



Donald Rapp

# BUBBLES, BOOMS, AND BUSTS



The Rise and Fall  
of Financial Assets



Second Edition

 Springer

## Bubbles, Booms, and Busts


Donald Rapp

# Bubbles, Booms, and Busts

The Rise and Fall of Financial Assets

Second Edition

 Springer

  
Copernicus Books is a brand of Springer

Donald Rapp  
South Pasadena  
California  
USA

ISBN 978-1-4939-1091-5 ISBN 978-1-4939-1092-2 (eBook)

DOI 10.1007/978-1-4939-1092-2

Springer New York Heidelberg Dordrecht London

Library of Congress Control Number: 2014944655

© Springer Science+Business Media New York 2009, 2015

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed. Exempted from this legal reservation are brief excerpts in connection with reviews or scholarly analysis or material supplied specifically for the purpose of being entered and executed on a computer system, for exclusive use by the purchaser of the work. Duplication of this publication or parts thereof is permitted only under the provisions of the Copyright Law of the Publisher's location, in its current version, and permission for use must always be obtained from Springer. Permissions for use may be obtained through RightsLink at the Copyright Clearance Center. Violations are liable to prosecution under the respective Copyright Law.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

While the advice and information in this book are believed to be true and accurate at the date of publication, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Printed on acid-free paper

Copernicus Books is a brand of Springer Science+Business Media LLC New York  
Springer Science+Business Media LLC New York is part of Springer Science+Business Media  
(www.springer.com)

# Preface

One of the problems that has challenged us for as long as we can remember is: how to value assets? In response to that challenge, we have invented the “free market economy” in which the price of an asset is set by the give-and-take between the buyer and the seller, one seeking the lowest price, and the other seeking the highest possible price. When demand is high, prices tend to rise, and *vice versa*. The two types of assets of greatest consequence to most of us are real estate and corporate stocks. According to classical economics, “the price is right” because it is set by negotiation between a rational buyer and a rational seller as to the “worth” of the asset. Unfortunately, history shows that at frequent intervals, this system gets seriously out of whack and the pricing of assets goes haywire. Stock and real estate prices are driven to “irrational exuberance.” A bubble forms, and inevitably the bubble bursts and there is great misery throughout the land. Then the cycle repeats itself—again and again.

What seems to happen is that some event, some expectation, or some new development starts the asset price rise rolling. As asset prices rise, a vacuum is generated that sucks in more investors, hungry for quick profits. The momentum so generated attracts yet more investors. By now, most new investors ignore or are oblivious of the original stimulus for the boom, and are only buying with the intent of selling at a profit to “a bigger fool” who is expected to come along soon. Greed descends upon the land like a ground fog.

We have seen this process repeat itself with a minor variations as far back as we can remember,<sup>1</sup> whether in tulips in Holland in the seventeenth century, the South Seas bubble of the eighteenth century, the Florida land boom of the 1920s, the stock market boom and crash of the 1920s, the great bull market in stocks of 1982–1995, the Japanese boom of the 1980s, the savings and loan scandal of the 1980s, the *dot.com* boom of 1996 to 2000, the sub-prime mortgage housing boom of 2002–2007, and more recently, the stock market bubble of 2012–2014.

---

<sup>1</sup> Early booms and busts were discussed in: McKay, Charles (1841) *Extraordinary Popular Delusions and the Madness of Crowds*. Richard Bentley, London. Reprinted Farrar, Strauss Giroux: New York: 1932.

To add to the confusion, the bubble atmosphere provides a playground for charlatans, schemers, and crooks within which to operate. The Republican Party has provided impetus to these corporate criminals by implementing “deregulation” and interpreting this as “no regulation.” In such an environment, banks and investment companies are free to play with the public’s money and be bailed out by the Government.

The first part of this book examines the nature, causes and evolution of bubbles, booms and busts in asset markets as phenomena of human greed and folly. In doing this, I have built upon the foundations laid down by John Kenneth Galbraith’s various works and I have also utilized material from Kindleberger’s work: “Manias, Panics and Crashes”, as well as various other sources cited in my book. Understanding bubbles, booms and busts requires first and foremost examination of the human element (greed, extrapolation, expectation and herd behavior).

The process by which a boom evolves into a bubble and thence to a bust is explored in detail. In many cases, there is a legitimate basis for expecting significant future growth (as with widespread electrification and the expansion of automobiles and highways in the 1920s, or the introduction and expansion of the personal computer and the Internet in the 1990s). This leads to investment of new money, which produces a boom. The boom expands into a bubble when the original basis for investing is gradually displaced by *momentum buying* when speculators invest only because the asset price is rising without regard to the merits of the organization. As prices rise, more speculators are sucked into the vacuum. Eventually, when the rate of rise reaches unsustainable epic proportions, the bubble pops.

Sornette and Woodward<sup>2</sup> discussed “the illusion of a *perpetual money machine*.” They said:

This term refers to the fantasy developed over the last 15 years that financial innovations and the concept that ‘this time, it is different’ could provide an accelerated wealth increase. In the same way that the perpetual motion machine is an impossible dream violating the fundamental laws of physics, it is impossible for an economy which expands at a real growth rate of 2–3 % per year to provide a universal profit of 10–15 % per year, as many investors have dreamed of (and obtained on mostly unrealized market gains in the last decade). The overall wealth growth rate has to equate to the growth rate of the economy.

---

<sup>2</sup> Financial Bubbles, Real Estate bubbles, Derivative Bubbles, and the Financial and Economic Crisis, <http://arxiv.org/abs/0905.0220>; updated October 2012 as The Illusion of the Perpetual Money Machine by Didier Sornette and Peter Cauwels, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2191509](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2191509).

Sornette and Cauwels<sup>3</sup> (SC) drew analogies with the laws of physics. Referring to the impossibility of a perpetual motion machine and the impossibility of creating energy out of nothing, they asked whether we can perpetually create wealth out of nothing? They said:

What about wealth? Can it be created out of thin air? Surely, a central bank can print crisp banknotes and, by means of the modern electronic equivalent, easily add another zero to its balance sheet. But what is the deeper meaning of this money creation? Does it create real value? Common sense, ... would argue that money creation that outpaces real demand is a recipe for inflation...

The rationality of investors comes into question. So does the rationality of bankers, who also display these same tendencies to an irrational degree. Events in 2008 showed that just about every major bank, brokerage house and mortgage company was rocked by multi-billion dollar losses in the sub-prime mortgage fiasco, and their stock values plummeted.

In addition, we examine how Government policy (monetary policy, fiscal policy, tax structure)—or the perception by investors that the Government will bail them out of a financial crisis—affects bubble formation and collapse. Bubbles require money. The money is supplied by banks, which in turn are enabled by loose government monetary policies. Government policies include manipulation of interest rates and tax laws. Over the past 35 years or so, Government policies have been skewed repeatedly to support bubbles in real estate and stocks. Low interest rates hurt savers, and most savers are not wealthy. Low income taxes (particularly on upper bracket income, capital gains and dividends) promote speculation and bubble formation, which benefit the rich. Asset bubbles enrich those who own assets. Therefore, it is relevant to examine who owns the assets in America. We found that a relatively small percentage of people at the top, own a large percentage of the assets. Hence preservation and enlargement of assets via bubbles preferentially benefits the rich, and that has been and remains the policy of the US Government. This raises the question whether asset bubbles create wealth, or vice versa? While classical economics might suggest that asset bubbles should merely create inflation, not wealth, there is considerable evidence in recent decades that wealth has been created merely by bidding up the prices of stocks and housing (on paper), thus defying the laws of classical economics (the so-called “wealth effect” of Alan Greenspan). As a result, the rich get richer (relative to the poor and middle class) and the disparity between the top and the bottom expands

---

<sup>3</sup> The Illusion of the Perpetual Money Machine by Didier Sornette and Peter Cauwels, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2191509](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2191509).

with time. The major supporter, architect and protector of bubbles over the decades prior to 2008 was Alan Greenspan who used Federal Reserve policies to support bubbles in almost every instance whenever it appeared. Since that time, Ben Bernanke has followed the same policies, promising Fed intervention every time the asset markets falter, and flooding the economy with borrowed money to generate a new bubble in the aftermath of the collapse of the previous bubble in 2008.

Much of the prosperity is confined to the rich. Most of the prosperity is due to the asset growth and since the rich own most of the assets, they have profited the most. By contrast, real wages (adjusted for inflation) have been relatively flat for some time. Modifications to the income tax structure by Republicans (with support of Democrats) have exacerbated this disparity. In addition to asset growth, a huge expansion in debt: federal, state, municipal and personal, has created the illusion of wealth. Ronald Reagan's introduction of "spend and borrow" as a new theme for the Republican Party over the past three decades, competes with the Democrat's "tax and spend" philosophy. In a widely quoted comment, then Vice-President Chaney voiced the Republican viewpoint: "Deficits don't matter." The combination of (1) asset bubbles, (2) expansion of debt, and (3) temporary control of inflation by purchasing cheap goods from China (while losing our manufacturing industries and blue-collar jobs) seems to have worked—but this shaky house of cards could easily collapse, and likely will.

The second part of this book examines a number of specific boom-euphoria-bust cycles during the last 100 years. Most of the emphasis is on American bubbles but a few overseas bubbles are also included.

The Florida land boom of the 1920s ushered in the era of boom-bust cycles in the twentieth century, when a single piece of property might trade six times in a single day with each purchase heaping promissory note upon promissory note until the whole thing collapsed.

The stock market in the late-1920s was a bubble in which stock prices rose incredibly from 1924 to 1929, and the general atmosphere was that of a gigantic bubble driven by euphoric investors, with heavy margin buying and leverage introduced via investment trusts. However, a number of learned articles claim that most stocks were not overpriced in 1929. There are many explanations for why the stock market collapsed in October 1929, and all of these provide insights; nevertheless an all-inclusive explanation has yet to be found. It appears that the economy topped out about three years before the stock market crash. The stock market crash of 1929 did not in itself cause the ensuing depression. We have discussed theories for the cause of the depression of the 1930s later in this book.



The savings and loan scandal of the 1980s was partly a bubble and partly out-and-out fraud, encouraged, supported and abetted by policies of the Reagan administration that blindly believed that deregulation (interpreted as no regulation) would solve an inherent problem of S&Ls in which their revenues from fixed mortgages would no longer cover their costs when interest rates on deposits escalated. The cost of bailing out failing S&Ls could have been contained if the Reagan administration had acted in a timely fashion; but it didn't, and unseemly speculators and criminals took over the S&L industry while Mr. Reagan kept his head in the sand. In the end, the taxpayers paid for the debacle after Mr. Reagan left office.

The *dot.com* mania of the late 1990s was based on a sound intuition that the Internet would have a profound positive effect on communications, business efficiency and information storage and retrieval. However, the boom very quickly turned into euphoria as new companies were created daily and bid up to incredibly high prices. The valuations (stock price  $\times$  number of shares outstanding) given to minor emergent Internet businesses with no earnings often exceeded valuations of major companies like General Electric. It was inevitable that after the huge run-up in stock prices prior to 2000, the bubble would collapse in 2000; and it did collapse with a thud.

Mr. Greenspan tried to rescue the collapsing stock market with a series of drastic rate cuts starting in 2002, and to some extent he was successful. But an unintended (at least presumably unintended) consequence of the rate cuts was generation of a new huge bubble in residential housing prices from 2002 to 2007. This bubble was aided and abetted by the prevailing interpretation of deregulation of banks and home loan institutions as “no regulation”—allowing them to pursue speculative, risky, and in many cases just plain stupid policies regarding issuing mortgages without adequate down payments, and issuing gerrymandered loans to people who could not afford the payments, in the expectation that rising house prices would bail them out. This was further exacerbated by large financial institutions packaging large numbers of mortgages into investment vehicles that obscured the fragility of the underlying collateral. Once more the adage is proved that “the road to hell is paved with good intentions”. The desire of the Government to provide house ownership to those who could not afford it under previous regulations, pressured the government backed mortgage agencies to reduce the standards for issuing mortgages.

When the housing bubble popped in late 2007, as it had to, it dragged down the stock market as the realization spread that most financial institutions had lost countless billions in inflated real estate securities. However, once again “Helicopter Ben” and the Fed came to the rescue dropping down

money on the markets after every significant falter in the stock market. And with each money drop, the federal deficit inflated. It took a few years, but by 2012–2014 new bubbles were forming in stocks and real estate.

Perhaps most wondrous of all is not the repeated boom-bubble-bust cycle that we see over and over again in asset investments; but rather it is almost the religious belief of investors who prostrate themselves before the Federal Reserve with its rate-settings, as if like a Colossus astride the economy, it can single-handedly steer the ship of state to safety.

It appears that Eric Janszen's insights into bubble formation and popping may be correct.<sup>4</sup> "The new economy belongs to finance, insurance, and real estate—FIRE" and represents "a credit-financed, asset-price-inflation machine" that is built upon a fundamental belief that the value of one's assets no longer fluctuates in response to the business cycle and the financial markets, but now mainly rises, with only infrequent short-term reversals.

Dr. Donald Rapp

April 2014

---

<sup>4</sup> Eric Janszen (2008) The Next Bubble: Priming the markets for tomorrow's big crash, Harper's Magazine, February, 2008.

# Introduction—The Holland Tulip Mania of 1636–7

One of the first documented boom-bubble-bust cycles was the “tulip craze” that took place in Holland in 1636–1637 when buying and selling tulips became a national mania that led otherwise rational people into mortgaging their worldly goods to invest in tulips.

Tulips originated in Asia and Turkey, where they were cultivated and propagated in Turkey almost a thousand years ago. They were introduced into Holland for the first time in 1563, where they were propagated and studied by a Dutch botanist from the 1570s to the 1590s. The culture of tulips and propagation from bulbs or seed is a slow process. By 1600, tulips were in some demand throughout Europe but supplies were limited. The colors of tulips began to change due to a virus and some magnificent tulips evolved. Tulips were valued by their color, and a hierarchy of tulips evolved with the most desirable ones bringing very high prices. A tulip called “*Semper Augustus*” was mostly the highly prized of all, and quickly became very valuable.

Between 1600 and 1630, Dutch tulip growers propagated more tulips, and tulip sales became a thriving business. Tulips were taken out of the ground after the blooming season and dried and stored for the summer to preserve them prior to replanting in the fall. Most sales therefore took place in mid to late summer when the bulbs were accessible. With the passage of time, tulip prices rose significantly, but in an orderly fashion.

In this era, some Hollanders became wealthy through trade with distant lands, but the great majority of the Dutch were artisans or farmers who worked long hours for subsistence wages. It was tempting to these laboring people to try to earn some additional money by acquiring and propagating tulips themselves. Thus, with the expansion of the tulip market, a number of amateurs began growing tulips for sale in the early 1630s.

Dash<sup>5</sup> described two national propensities of the Dutch of that time: savings and gambling. The plague killed off a number of people during the 1630s, leaving a shortage of labor. Wages went up as a result, and artisans had

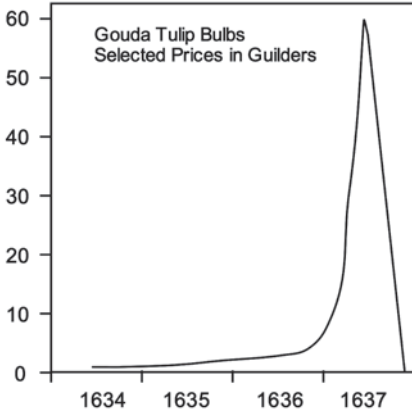
---

<sup>5</sup> Dash, Mike (1999) *Tulipomania*, Three Rivers Press, New York, NY.

some extra savings to gamble on the tulip trade. Tulip prices rose considerably from 1630 to 1635, and the interest in earning profits from tulips expanded amongst the populace during that period.

The demand for tulips was such that a market that only existed for about two months in late summer was inadequate. As a result, in 1635, an important change was made in the way tulip sales were carried out. Instead of an exchange of cash for bulbs in late summer, the transactions could now take place at any time of the year, even while the tulip bulbs remained in the ground, and the exchange of cash was for a contract in which the bulbs would be made available to the buyer at the next late summer opportunity. This introduced several issues because the buyer was not sure exactly what he was getting, and the care of the sold bulbs was not always ideal. At the same time, many sales were made on contracts in which the buyers put up little cash, but paid a down payment in kind, with personal goods, and promised to pay the seller a large cash payment after the buyer took possession (based on the expectation that he could sell the bulbs to another buyer at a higher price). Most of these people could not possibly come up with the cash required at completion of the deal, except by selling their tulips to a hypothetical future buyer. (If this sounds familiar in current times, it is because this was the same philosophy of those who bought housing that they could not afford in 2004–2007 with the expectation that rising prices would bail them out.) Very often, the down payment was a small percentage of the total price. Thus, buyers were highly leveraged. With these changes in the market, there was no need to know much about growing or propagating tulips. Investments were now made for the purpose of resale, not for the purpose of use. Thus, the tulip market passed from a boom phase to a mania phase.

Beginning in the autumn of 1635, prices escalated and as they did, more and more investors were sucked into the market to buy, driving prices higher and higher. By 1636, tulips were traded on the stock exchanges of numerous Dutch towns and cities. This encouraged trading in tulips by all members of society, with many people selling or trading their other possessions in order to speculate in the tulip market. By the autumn of 1636, a single tulip bulb could command a price equivalent to a few years' average salary, and the top bulbs were priced at several decades of average salary. Prices rose by a factor of ten from November 1636 to January 1637. The peak in the market occurred in early February 1637, when an auction of tulips netted 90,000 Guilders. (For calibration, an artisan's salary was about 300–400 Guilders/year and a prosperous merchant may have earned 1000 or more Guilders per year.) However, at an auction a few days later, there were no bids. This led to a nationwide panic as buyers disappeared from the markets. The ensuing collapse of the tulip market was swift and profound. By the spring of 1637, tulip



**Fig. 1** Estimated price of selected tulip bulbs around 1635–1637 (originally drawn by Elliott Wave International)

prices had dropped by factors of 20 to 100. Many of the relatively common tulips became completely worthless. As in the case of the Florida land boom of the 1920s, a given tulip may have been bought and sold several times, each time with a small down payment and a promissory note. As each buyer defaulted, they left behind a tangled web of unpaid bills.

Jiménez<sup>6</sup> provided Fig. 1.

Had the tulip transactions been enforced, those who had mortgaged their few possessions to enter the tulip market would have been ruined—implying consignment to the workhouse, or starvation. Attempts were made to resolve the situation to the satisfaction of all parties, but these were unsuccessful. Ultimately, individuals were stuck with the bulbs they held at the end of the crash—no court would enforce payment of a contract, since judges regarded the debts as contracted through gambling, and thus not enforceable by law. In many cases the people who owed had no assets worth suing for anyway. It appears that after the collapse of the tulip market, the courts decreed that all purchase contracts would be treated as options to buy and need not be fulfilled.

Dash described the end result of the tulip craze as surprisingly benign. Most of the crazy deals were negated and life went on, although bankruptcies increased and there are other signs of financial stress in the aftermath. However, Galbraith claimed that a recession followed the puncture of the bubble.

<sup>6</sup> Understanding Economic Bubbles, Álvaro Jiménez Jiménez, <http://www.eco.uab.es/ue/trabajos%20premi/tfc%2061%20Jiménez%201.pdf>.

# Contents

Preface .....	v
Introduction—The Holland Tulip Mania of 1636–7 .....	xi
Abbreviations .....	xix
List of Figures .....	xxiii
List of Tables .....	xxvii
<b>1 The Nature of Manias, Bubbles, and Crashes .....</b>	<b>1</b>
1.1 Introduction .....	1
1.2 Value Trading versus Momentum Trading .....	5
1.3 The rise of manias and bubbles .....	11
1.4 Stages in the Boom–Bubble–Bust Sequence .....	18
1.5 Fueling the Boom: Role of the Media .....	20
1.6 Bubbles, Wealth, and Inflation .....	21
1.6.1 Do Bubbles Produce Wealth? .....	21
1.6.2 Bubbles and Inflation .....	35
1.7 Speculations, Bootstraps, and Swindles .....	40
1.8 The Rationality of Investors, Bankers, and Experts? .....	42
1.8.1 The Rationality of Investors .....	42
1.8.2 The Rationality of Bankers and Experts? .....	44
1.9 Monetary Policy and the Federal Reserve System .....	57
1.10 Fiscal Policy and Taxes .....	73
1.10.1 Tax Policies .....	73
1.10.2 Income Tax Brackets and Budget Deficits .....	84
1.10.3 Capital Gains .....	89
1.10.4 SS and Medicare .....	90
1.11 Inequality .....	94
1.11.1 Why Inequality Persists and Expands .....	94
1.11.2 Inequality of Wealth and Income in the USA .....	98
1.11.3 Global Inequality .....	105
1.12 Debt .....	107
1.12.1 US Federal Debt .....	107

1.12.2 State and Municipal Debt . . . . .	117
1.12.3 Household and Mortgage Debt . . . . .	117
1.12.4 Bankruptcies . . . . .	125
1.13 Deposit Insurance . . . . .	126
1.14 Regulation, Deregulation, and No Regulation . . . . .	132
1.14.1 Introduction . . . . .	132
1.14.2 Example of the Airlines . . . . .	135
1.15 Pension Plans . . . . .	137
1.15.1 Corporate Pensions . . . . .	137
1.16 The Valuation of Common Stocks . . . . .	145
1.17 Internal Feedback and Endogenous Risk . . . . .	152
1.18 When the Bubble Pops . . . . .	154
References . . . . .	156

**2 A Short History of Booms, Bubbles, and Busts . . . . . 159**

2.1 The New World . . . . .	160
2.1.1 South Seas Bubble . . . . .	160
2.1.2 John Law's Mississippi Company . . . . .	162
2.2 Florida Land Boom of the 1920s . . . . .	164
2.2.1 The Rise . . . . .	164
2.2.2 The Fall . . . . .	165
2.2.3 Underlying Causes . . . . .	166
2.3 The Stock Market and the Economy of the 1920s . . . . .	167
2.3.1 The Real Economic Boom of the 1920s . . . . .	167
2.3.2 The Stock Market of the 1920s . . . . .	174
2.3.3 The Crash of 1929 . . . . .	177
2.4 The Great Depression of the 1930s . . . . .	180
2.5 The Savings and Loan Scandal of the 1980s . . . . .	191
2.5.1 The Original Problem . . . . .	191
2.5.2 Deregulation and No Regulation . . . . .	196
2.5.3 How Mr. Reagan Made a Bad Problem Worse . . . . .	198
2.5.4 The False Spring of 1983 . . . . .	201
2.5.5 The "Go-Go" Period . . . . .	203
2.5.6 Fraud and Misconduct . . . . .	205
2.5.7 The Aftermath . . . . .	213
2.6 The Bull Market of 1982–1995 . . . . .	215
2.7 The Crash of 1987 . . . . .	222
2.8 The Dot.Com Mania . . . . .	228
2.8.1 Boom and Euphoria . . . . .	228
2.8.2 Greenspan and the Role of the Federal Reserve . . . . .	230
2.8.3 Bursting of the Bubble . . . . .	236
2.8.4 Merrill-Lynch is Bullish on America . . . . .	239

2.9	The Debt-Driven Asset Bubble Era of 1982–2013 .....	241
2.10	Other Bubbles and Swindles of the late 1990s and 2000s .....	242
2.10.1	Adelphia .....	243
2.10.2	Rogue Traders at Banks .....	244
2.10.3	Orange County .....	248
2.10.4	Bernie Madoff .....	248
2.10.5	Enron .....	250
2.10.6	Long-Term Capital Management .....	256
2.10.7	Albania’s Ponzi Schemes .....	265
2.10.8	Corporate and Accounting Scandals .....	267
2.11	The Subprime Real Estate Boom 1998–2007 .....	280
2.11.1	Historical Background .....	280
2.11.2	House Prices During the Boom .....	281
2.11.3	Contributing Factors Toward the Boom .....	286
2.11.4	The Punctured Bubble .....	312
2.11.5	Government Response to the Punctured Bubble .....	321
2.11.6	International Mortgage Debt .....	324
2.12	The Real Estate Boom of 2013–2014 .....	326
2.13	Japan and East Asia .....	329
2.13.1	Japan 1970–2007 .....	329
2.13.2	East Asia .....	335
2.14	The Next Bubble .....	338
	References .....	342
<b>Index</b>	.....	<b>347</b>



# Abbreviations

<b>ACC</b>	American continental corporation
<b>ADC</b>	Acquisition, development, and construction
<b>AH</b>	Affordable housing
<b>AMT</b>	Alternative minimum tax
<b>AMTP</b>	Alternative Mortgage Transactions Parity Act
<b>AOL</b>	America on-line
<b>ARM</b>	Adjustable rate mortgage
<b>ARPA</b>	Advanced research projects agency
<b>ATM</b>	Automatic teller machine
<b>BAPCPA</b>	Bankruptcy Abuse Prevention and Consumer Protection Act of 2005
<b>BLS</b>	Bureau of labor statistics
<b>CAB</b>	Civil aeronautics board
<b>CBPP</b>	Center for budget and policy priorities
<b>CD</b>	Certificate of deposit
<b>CDOs</b>	Collateralized debt obligations
<b>CDS</b>	Credit default swap
<b>CEO</b>	Chief executive officer
<b>CFO</b>	Chief financial officer
<b>CFTC</b>	Commodity futures trading commission
<b>CINB</b>	Continental illinois national bank and trust company
<b>CPI</b>	Consumer price index
<b>CPI-U</b>	Consumer price index for urban areas
<b>CQS</b>	Case, Quigley and Shiller
<b>CSREI</b>	Case-Shiller real estate index
<b>DBL</b>	Drexel, Burnham and Lambert
<b>DCJ</b>	David Cay Johnston
<b>DIDC</b>	Depository Institutions Deregulation and Monetary Control Act of 1980
<b>DJIA</b>	Dow-Jones industrial average
<b>DOJ</b>	Department of justice
<b>ENW</b>	Edward N. Wolff

<b>ERISA</b>	Employee Retirement Income Security Act
<b>FDIC</b>	Federal deposit insurance company
<b>Fed</b>	Federal reserve system
<b>FHA</b>	Federal housing administration
<b>FERC</b>	Federal energy regulatory commission
<b>FHLBB</b>	Federal home loan bank board
<b>FIRE</b>	Finance, insurance, and real estate
<b>FOMC</b>	Federal open market committee
<b>FSLIC</b>	Federal savings and loan insurance corporation
<b>GDP</b>	Gross domestic product
<b>GNP</b>	Gross national product
<b>GPS</b>	Global positioning system
<b>GS</b>	Gjerstad and Smith
<b>GSAMP</b>	Goldman sachs alternative mortgage product
<b>GSE</b>	Government supported enterprises
<b>HUD</b>	Housing and urban development (Department of)
<b>ICT</b>	information and communications technology
<b>IMF</b>	International monetary fund
<b>IPO</b>	Initial public offering
<b>JKG</b>	John Kenneth Galbraith
<b>K&amp;A</b>	Kindleberger and Aliber
<b>LMI</b>	Low- and moderate-income borrowers
<b>LTCM</b>	Long term capital management
<b>LTV</b>	Loan-to-value ratio
<b>MBLI</b>	Mutual benefit life insurance
<b>MBS</b>	Mortgage backed security
<b>MLS</b>	Multiple listing service
<b>NAR</b>	National association of realtors
<b>NBR</b>	Nightly business report
<b>NINA</b>	No income—no assets
<b>NIVA</b>	No income—verified assets
<b>MWH</b>	Megawatt-hours
<b>NBR</b>	Nightly business report (Public Television)
<b>NPR</b>	National public radio
<b>NYSE</b>	New York Stock Exchange
<b>NYTI</b>	New York Times Index (of 25 industrial stocks)
<b>OMB</b>	Office of management and budget
<b>OPEC</b>	Organization of petroleum exporting countries
<b>P/E</b>	Price/earnings ratio
<b>PBGC</b>	Pension benefit guaranty corporation
<b>PCE</b>	Personal consumption expenditures

<b>PFM</b>	Pizzo, Fricker and Muolo
<b>PG&amp;E</b>	Pacific gas and electric
<b>PPI</b>	Producer price index
<b>S&amp;L</b>	Savings and loan
<b>S&amp;P</b>	Standard and poor's
<b>SEC</b>	Securities and exchange commission
<b>SIV</b>	Structured investment vehicle
<b>SS</b>	Social security
<b>SW</b>	Sornette and Woodward
<b>TIAA-CREF</b>	Teachers insurance annuity association
<b>WTHII</b>	Inflation-what-heck-is-it
<b>WWII</b>	World War II
<b>Y2K</b>	Year 2000 problem

# List of Figures

<b>Fig. 1</b>	Estimated price of selected tulip bulbs around 1635–1637 . . . . .	xiii
<b>Fig. 1.1</b>	“Normal” fluctuations of asset value about a long-term trend line . . . . .	7
<b>Fig. 1.2</b>	Market boom departs from a long-term trend line . . . . .	7
<b>Fig. 1.3</b>	Stages of a boom, bubble, bust, and recovery . . . . .	19
<b>Fig. 1.4</b>	US total household wealth as percentage of GDP . . . . .	24
<b>Fig. 1.5</b>	Share of wages and of private consumption in gross domestic product (GDP) for the USA + European Union + Japan . . . . .	25
<b>Fig. 1.6</b>	Rate of profit ( <i>left scale</i> ; from investments) and rate of accumulation or savings ( <i>right scale</i> ) for the USA + European Union + Japan . . . . .	25
<b>Fig. 1.7</b>	The stock market level and household wealth in the USA (arbitrary units, scaled to fit). The Dow Jones Industrial Average ( <i>DJIA</i> ) is shown scaled to base 100 in 1960 . . . . .	27
<b>Fig. 1.8</b>	Growth in median household income . . . . .	29
<b>Fig. 1.9</b>	Wealth and income per capita in California (2006 dollars) . . . . .	33
<b>Fig. 1.10</b>	Modification of Fig. 1.3 to show a net long-term gain from the boom–bubble–bust sequence . . . . .	34
<b>Fig. 1.11</b>	Comparison of bull markets of 1924–1929 and 1982–1987 . . . . .	55
<b>Fig. 1.12</b>	Income tax rate (%) in the highest income bracket for each year since 1913. Also shown is the maximum long-term capital gains tax rate . . . . .	85
<b>Fig. 1.13</b>	Annual increases in federal debt. The <i>dot.com</i> stock market bubble artificially expanded government revenues during the late 1990s . . . . .	86
<b>Fig. 1.14</b>	US budget deficits and surpluses . . . . .	86
<b>Fig. 1.15</b>	The disparity of income in America. Percent of total adjusted gross income ( <i>AGI</i> ) for top 10, 5, 1, and 0.1 % of incomes . . . . .	88
<b>Fig. 1.16</b>	Average household income (real year dollars) for the five quintiles of income and the top 5 % . . . . .	88
<b>Fig. 1.17</b>	The top ten percent share of US total income (1917–2011) . . . . .	103
<b>Fig. 1.18</b>	Decomposing the top ten percent of US income share into three groups, 1913–2011 . . . . .	103
<b>Fig. 1.19</b>	US average real wage (1982–1984 dollars) . . . . .	104
<b>Fig. 1.20</b>	US average real weekly earnings (1982–1984 dollars) . . . . .	105

Fig. 1.21	The rise in US Federal debt from 1970 to 2012 showing which political party was in power in each major segment of increase in debt . . . . .	110
Fig. 1.22	US Federal debt and budget deficit from 1970 to 2006 showing effects of tax cuts and the <i>dot.com</i> mania . . . . .	110
Fig. 1.23	US Federal debt and budget deficit from 1970 to 2012 showing effects of tax cuts, the <i>dot.com</i> mania, and Obama's spending . . . . .	111
Fig. 1.24	State and local government debt . . . . .	117
Fig. 1.25	Household debt in the twenty-first century . . . . .	121
Fig. 1.26	Ratio of household debt to disposable personal income . . . . .	121
Fig. 1.27	Ratio of household debt service to disposable personal income . . . . .	122
Fig. 1.28	US savings rate . . . . .	124
Fig. 1.29	Number of bank failures per year . . . . .	130
Fig. 1.30	History of the price/earnings ratio of the Shiller version of the S&P 500 Index . . . . .	146
Fig. 1.31	Comparison of long-term interest rates with the P/E ratio of the S&P 500 index (P/E on left scale, interest rates on right scale) . . . . .	152
Fig. 2.1	South Sea Company share prices . . . . .	162
Fig. 2.2	Comparison of residential housing starts in the era 1970–2010 with that for 1890–1940 . . . . .	172
Fig. 2.3	Sources of funding for residential construction, 1911–1939 . . . . .	172
Fig. 2.4	Comparison of real estate and stock market booms of the 1920s. Vertical scale is US\$ billions in 1929 dollars. . . . .	173
Fig. 2.5	Dow-Jones Industrial Average in the 1920s and 1930s . . . . .	176
Fig. 2.6	Dow-Jones Industrial Average in the 1920s . . . . .	177
Fig. 2.7	Variation of interest rates from 1962 to 2013. . . . .	193
Fig. 2.8	The S&P Index from 1950 to 2013 . . . . .	217
Fig. 2.9	Internet stock index during dot.com boom . . . . .	230
Fig. 2.10	Market indices during the final phase of the dot.com boom/bust . . . . .	231
Fig. 2.11	Stock price history of Internet Capital Group . . . . .	238
Fig. 2.12	Stock price history of Infospace.com . . . . .	238
Fig. 2.13	Comparison of DJIA in three eras. . . . .	242
Fig. 2.14	Variation of an economic parameter over time, comparing actual variations with the long-term trend . . . . .	259
Fig. 2.15	Relative occurrence of variations of actual data from the long-term trend . . . . .	259
Fig. 2.16	Life expectancy of a turkey (turkey's point of view). . . . .	260
Fig. 2.17	Relative occurrence of variations of actual data from the long-term trend with extended "tails" . . . . .	260
Fig. 2.18	Estimated national average inflation-adjusted house prices dating back to 1895 . . . . .	281
Fig. 2.19	Comparison of real estate bubbles of the 1920s and 1997–2007. . . . .	282
Fig. 2.20	Case–Shiller real estate indices for a composite of ten cities and for Los Angeles. . . . .	282

<b>Fig. 2.21</b> Case–Shiller real estate indices for Los Angeles, with adjustment for inflation . . . . .	283
<b>Fig. 2.22</b> Case–Shiller real estate indices for the USA, with adjustment for inflation . . . . .	284
<b>Fig. 2.23</b> Year-to-year percent change in house prices for a “hot market” in Florida . . . . .	284
<b>Fig. 2.24</b> Year-to-year percent change in house prices for a “hot market” in Los Angeles . . . . .	285
<b>Fig. 2.25</b> Case–Shiller index for Los Angeles broken down into three tiers of house value . . . . .	285
<b>Fig. 2.26</b> Percentage of zero down payment mortgages in California . . . . .	288
<b>Fig. 2.27</b> Mortgages packaged into a SIV that issues a hierarchy of bonds over a range of financial ratings . . . . .	297
<b>Fig. 2.28</b> Comparison of house prices with rental index . . . . .	302
<b>Fig. 2.29</b> Single family housing starts in the USA . . . . .	309
<b>Fig. 2.30</b> Extraction of equity from residence and personal savings ( <i>smoothed curves</i> ) . . . . .	311
<b>Fig. 2.31</b> The rise and fall of the paper value of US residential real estate during and after the housing boom of 2002–2007 . . . . .	312
<b>Fig. 2.32</b> Real house prices in various countries . . . . .	325
<b>Fig. 2.33</b> Case–Shiller housing index for 20 cities and yearly percent change . . . . .	326
<b>Fig. 2.34</b> Japan real estate index 1980–2009 . . . . .	335
<b>Fig. 2.35</b> Market value (number of shares times price per share) of NASDAQ stocks versus year . . . . .	339
<b>Fig. 2.36</b> Market value of US real estate versus year . . . . .	340
<b>Fig. 2.37</b> Is the stock market the next bubble? . . . . .	341

# List of Tables

<b>Table 1.1</b>	Gains of Standard & Poor's (S&P) 500 and the National Association of Securities Dealers Automated Quotations (NASDAQ) during 1995–2013	59
<b>Table 1.2</b>	Value of an investment of US\$ 100 in the S&P 500 or the NASDAQ in 1994 or in 1999	60
<b>Table 1.3</b>	Asset gain at the end of 2012 that would result from annual investments each year of US\$ 100 into the S&P 500, the NASDAQ, or fixed interest	61
<b>Table 1.4</b>	Who pays how much income tax in the USA?	76
<b>Table 1.5</b>	Who pays how much income tax in the USA?	77
<b>Table 1.6</b>	Number of taxable estates by size in year 2000, prior to Bush tax cuts of 2001. The personal exemption was US\$ 675,000 (double for a couple) and the nominal tax rate was 55 %	78
<b>Table 1.7</b>	Schedule for estate taxes as changed by the Bush 2001 tax cuts	79
<b>Table 1.8</b>	Effect of raising estate tax exemption	80
<b>Table 1.9</b>	Dependence of number of estates subject to estate tax on exemption level	80
<b>Table 1.10</b>	Effect of raising the estate tax exemption on farm and small business estates	80
<b>Table 1.11</b>	Estate Tax Data for 2012	82
<b>Table 1.12</b>	% of total stock owned by various wealth classes as of 2005	89
<b>Table 1.13</b>	Comparison of total tax brackets for single filers when SS and Medicare are added to income tax	93
<b>Table 1.14</b>	Percentage share of total wealth	99
<b>Table 1.15</b>	Percentage share of nonhome wealth	100
<b>Table 1.16</b>	Mean wealth holdings by wealth class, 1983–2010 (1000s of 2010 dollars)	100
<b>Table 1.17</b>	% of total assets held by wealth class (2010)	101
<b>Table 1.18</b>	Mean income by income class, 1982 and 2010 (thousands of 2010 dollars)	102
<b>Table 1.19</b>	Number of households with net worth exceeding 1, 5, or 10 million dollars from 1983 to 2012	106
<b>Table 1.20</b>	The concentration of global wealth	107
<b>Table 1.21</b>	History of US federal debt	108
<b>Table 1.22</b>	Recent history of US federal debt	109

<b>Table 1.23</b>	US consumer debt (\$ billions) . . . . .	118
<b>Table 1.24</b>	Mortgage debt in America (billions of dollars) . . . . .	119
<b>Table 1.25</b>	Annual investment in residential mortgages (billions of dollars) . . . . .	120
<b>Table 1.26</b>	Bankruptcy Filings in the USA, 1980–2012 (thousands) . . . . .	125
<b>Table 1.27</b>	Largest bank failures in recent history . . . . .	129
<b>Table 1.28</b>	Funding for single-employer pension plans for S&P 500 companies (in millions of dollars). . . . .	140
<b>Table 1.29</b>	Comparison of defined benefit plans with defined contribution plans . . . . .	141
<b>Table 2.1</b>	Bank clearings for Miami . . . . .	166
<b>Table 2.2</b>	Performance of real estate bonds 1919–1931 . . . . .	174
<b>Table 2.3</b>	Solvency of S&Ls in the 1980s . . . . .	195
<b>Table 2.4</b>	Average yearly earnings by LTCM before fees . . . . .	258
<b>Table 2.5</b>	Brief summary of a few of the many corporate scandals of the 1990s . . . . .	269
<b>Table 2.6</b>	Comparison of equity lost and impact on financial firms in bursts of <i>dot.com</i> and housing bubbles . . . . .	318
<b>Table 2.7</b>	Largest US financial institutions by asset size (December 31, 2007) . . . . .	321
<b>Table 2.8</b>	US bailout history (2008 dollars) . . . . .	323
<b>Table 2.9</b>	IMF estimates of home-price overvaluation . . . . .	324



# 1

## The Nature of Manias, Bubbles, and Crashes

### 1.1 Introduction

John Kenneth Galbraith (JKG)<sup>1</sup> pointed out,

The free-enterprise economy is given to recurrent episodes of speculation. These great events and small, involving bank notes, securities, real estate, art, and other assets or objects are, over the years and centuries, part of history.

He then sought to find common features for these episodes because as he said, only through such understanding can the investor be warned and saved from “what must conservatively be described as mass insanity.” However, as JKG amply demonstrated, such warnings will be met with vilification and abuse by the ruling powers during the manic phase of a boom.

JKG concluded,

The more obvious features of the speculative episode are manifestly clear [in which assets] when bought today, are worth more tomorrow. This increase and the prospect attract new buyers; the new buyers assure a further increase. Yet more are attracted; yet more buy; the increase continues. The speculation building on itself provides its own momentum.

JKG described two types of participants in these booms. The true believers “are persuaded that some new price-enhancing circumstance is in control, and they expect the market to go up and stay up, perhaps indefinitely.” They envisage a brave new world ahead where the rules have changed. A smaller group of superficially more astute speculators are aware of the speculative mood of the moment and the likelihood that it will eventually come to an end. Their goal is to ride the upward wave with the aim of getting out before the speculation runs its course. If they are successful, they will do very well.

---

<sup>1</sup> Galbraith (1993).

It is in the nature of speculative booms that there will be an inevitable fall, and that fall will not usually occur gently or gradually. It will typically occur with a comparatively sudden and decisive collapse. According to JKG, “that is because of the groups of participants in the speculative situation are programmed for sudden efforts at escape.” At some point in the upward spiral, JKG postulated that “something, it matters little what—although it will always be much debated—will trigger the ultimate reversal.” Astute (or lucky) speculators may get out in time. Those who thought the wave would continue upward forever, ride the downward wave until they sell in desperation, driving the market down further. And as JKG summarized,

... thus the rule, supported by the experience of centuries: the speculative episode always ends not with a whimper but with a bang. There will be occasion to see the operation of this rule frequently repeated.

The mathematics of rise and fall may not be widely understood. When the price of an asset doubles (increases by 100%), it only requires a 50% drop to restore it to its original price. Thus, a stock that was originally priced at 10 that doubles to 20, needs only to drop by 50% to return it to 10. Similarly, if an asset goes from 10 to 40, a 400% appreciation, then a mere 50% reduction will wipe out half of the 400% gain. Thus, even a moderate percentage drop from the high point can erase a substantial percentage of the previous gains. Those who joined the boom late may be hit especially hard by such losses.

JKG commented on the mass psychology of the speculative mood. In order for an individual to resist the suction generated by the allure of quick riches during a speculative boom, he must

... resist two compelling forces: one, the powerful personal interest that develops in the euphoric belief, and the other, the pressure of public and seemingly superior financial opinion that is brought to bear on behalf of such belief.

In this connection, JKG quoted Schiller’s dictum:

*Anyone taken as an individual is tolerably sensible and reasonable but as a member of a crowd, he at once becomes a blockhead.*

Those involved with the speculation are experiencing an increase in wealth and there is a tendency for them to believe that this is neither fortuitous nor undeserved. “All wish to think that it is the result of their own superior insight or intuition.”

According to JKG, two factors that contribute to the bubble mentality are:

1. The short financial memory (or ignorance of history) that makes investors oblivious of previous financial disasters.
2. The tendency to attribute greater intelligence to individuals, in proportion to income or assets that they control.

The ignorance of the history of booms and busts is a theme that was oft repeated by JKG. He suggested that there are many characteristics in common between boom/bust cycles over the past 400 years and “the lessons of history are compelling—and even inescapable.”

In a world where acquisition of riches is difficult for most people, admiration for those who have accumulated wealth is seemingly unbounded. The public’s fascination for the great financial mind is only dampened by speculative collapse, which then leads to disillusionment—until the next speculative boom.

A third factor (not discussed by JKG because this phenomenon seems to have taken root mainly since the 1980s) that contributes to the bubble mentality is the expectation that the government and central banks will “bail out” speculators through active intervention with monetary and fiscal policies if and when the bubble pops (also known as “the Greenspan put”). There is ample evidence of this in the USA. Recent examples of this are the government and Federal Reserve reactions to (1) the 1987 stock market collapse, (2) the popping *dot.com* bubble in 2002, (3) the collapse of the housing market bubble in 2007, and (4) the emergent stock and housing bubble in 2012–2014. In all cases, the government flooded the banks with low-interest funds, borrowed money to distribute to the public, provided support to those who speculated and overborrowed, and provided verbal reassurance every single time the markets faltered. In the aftermath of the 2007 housing debacle, the Federal Reserve bailed out the biggest carmaker, the biggest insurance company, and the biggest banks in America. (It was for this reason that the head of the Federal Reserve, Ben Bernanke was often referred to as “Helicopter Ben” for dropping money down on the banking system and bailing out troubled institutions.)

JKG described the aftermath of the end of “the inevitable crash” as “a time of anger and recrimination and also of profoundly unsubtle introspection.” The anger will be directed against those who were previously respected as the most perceptive financial gurus. Some of them will have “gone beyond the law, and their fall and, occasionally, their incarceration will now be viewed with righteous satisfaction.”

It would be of great value to investors if there were a good method to sense the oncoming of the end of a bubble. However, this would not apply to those

who believe the bubble will have no end. Unfortunately, there does not seem to be any reliable process for sensing that the end is near. However, there does seem to be some indication that high volatility with wild swings upward and downward may (at least sometimes) presage the end of a stock market bubble.

JKG went on to say there will be investigations into previous financial practices that were highly praised in their heyday. Some of these practices were merely implausible; others were clearly illegal. And as JKG indicated,

There will be talk of regulation and reform. What will not be discussed is the speculation itself or the aberrant optimism that lay behind it. Nothing is more remarkable than this: in the aftermath of speculation, the reality will be all but ignored.

JKG suggested that there are two reasons for this. One is that there are too many people and institutions involved and he emphasized,

Whereas it is acceptable to attribute error, gullibility, and excess to a single individual or even to a particular corporation, it is not deemed fitting to attribute them to a whole community, and certainly not to the whole financial community. Widespread naiveté, even stupidity, is manifest; mention of this, however, runs drastically counter to the earlier-noted presumption that intelligence is intimately associated with money.

According to JKG, the second reason that the speculative mood and mania are exempted from blame is that there is an almost theological faith in the free enterprise market “so there is a need to find some cause for the crash, however far fetched, that is external to the market itself.” JKG cited the investigations and probes after the 1987 stock market meltdown, none of which ever considered excessive speculation as the main contributing factor. However, in the past 30 years, it has become apparent that capitalism does not work with balanced budgets. The Federal Government is committed to provide more support and services than it can pay for, and it cannot raise taxes in an attempt to balance the budget without generating a severe recession. Thus, the government is doomed to repeated and continual budget deficits, and its debt will build up in time until at some point, the whole system will collapse. The government is committed to promoting financial bubbles because it does not know how to increase average wages.

Finally, JKG closed with a discussion of what, if anything should be done. He suggested that there probably is not a great deal that can be done. It is impractical to attempt to outlaw mass financial euphoria that seems to be imbedded in the human psyche.

## 1.2 Value Trading versus Momentum Trading

It seems to be a fundamental (perhaps even genetic) trait of humans that people appreciate a windfall more than almost anything else. Many people are very proud of the profit they made from a rise in their investment, particularly if some unforeseen event (a buyout?) drove a stock price well above what they had originally expected. By contrast, fewer people seem to find satisfaction in the hard-earned bucks they made from their salaries by dint of their labor. We seem to value investment income over wages. Perhaps that is why wages are taxed at a much higher rate than capital gains. While many economists claim that low capital gains taxes promote business expansion, the data suggest that this expansion seems to occur in the form of bubbles in the prices of paper assets—which primarily benefit the rich.

Markets in common stocks, real estate and other assets have provided investors with media for seeking paper profits from capital appreciation for hundreds of years.

One may conceive of hypothetical criteria for determining the worth of an asset. For example, to obtain an estimate of the *worth* of a residence as the replacement cost, one could estimate an average construction cost in the local area (\$/square foot) and multiply this by the number of square feet in the residence, and add this to an estimated land value. At different times, buyers are willing to pay more (or less) than the estimated replacement cost of a residence. In fact, during the housing bubble in California from 2001 to 2007, the connection between sales price and replacement cost was typically widely ignored. The value of a share of common stock is even more subjective. On a theoretical basis, the *value* or *worth* of assets such as common stocks and real estate is almost always quite subjective. In actual practice, the *immediate value* at any moment can be construed to be what someone else is willing to pay for it.

History shows that all asset markets fluctuate as buyers and sellers move into or out of the markets. In some cases, now and again, a strong trend (upward or downward) might be established. This might be due to a random occurrence, or more likely, to some important outside factor (or factors) that exerts an influence. Kindleberger and Aliber (K&A),<sup>2</sup> following Minsky, suggested that an upward boom can be initiated by “an exogenous outside shock to the macroeconomic system ... if sufficiently large and pervasive.” They suggested: “the rapid expansion of automobile production and associated development of highways together with electrification of much of the country ... provided such a shock in the 1920s.” The development and expanded use of

---

<sup>2</sup> Kindleberger and Aliber (2005).

the Internet in the late 1990s provided a shock that also produced a common stock boom. K&A also described a form of shock they called a “displacement” in which an outside event, typically unforeseen, “changes horizons, expectations, anticipated profit opportunities, . . .” They mentioned changes in the price of oil or outbreak of war as examples of shocks that produce displacement. K&A also suggested that the aftermath of a bubble generated by such a boom is usually a crash.

In 1995, when JKG republished his classic work *The Great Crash*, he described the boom–bust cycle as follows:

There is a basic and recurrent process. It comes with rising prices, whether of stocks, real estate, works of art or anything else. This increase attracts attention and buyers, which produces the further effect of even higher prices. Expectations are thus justified by the very action that sends prices up. The process continues; optimism with its market effect is the order of the day. Prices go up even more. Then, for reasons that will endlessly be debated, comes the end. The descent is always more sudden than the increase; a balloon that has been punctured does not deflate in an orderly way.

He also emphasized: “at some point in the growth of a boom all aspects of property ownership become irrelevant except the prospect for an early rise in price.” Any use of the enterprise, or its value in the long run becomes academic. Instead, the only concern becomes whether the market price will rise soon, as it has in the recent past. There is no other benefit to ownership than the hope of selling at a higher price in the near future. In fact, JKG suggested that if the actual business conducted by the enterprise could somehow be divorced from the “burdens of ownership, this would be much welcomed by the speculator. Such an arrangement would enable him to concentrate on speculation which, after all, is the business of a speculator.” It is well known that during the *dot.com* boom, many people bought stocks in companies for which the investors did not have a clue what products or services the companies produced.

While there are many theories, it is difficult to be certain how or why such a boom originates. The important point is that whether due to random fluctuations or exogenous shocks, moderate upward movements in the prices of assets occur rather frequently. In most cases, the natural laws of supply and demand dampen these movements, leading to limited oscillations about the long-term trend line as shown in Fig. 1.1. In a few cases, a boom develops in which prices rise unaccountably, eventually reaching extraordinarily high values, as shown in Fig. 1.2. As this figure suggests, the aftermath of such a rise might be a return toward the long-term trend.

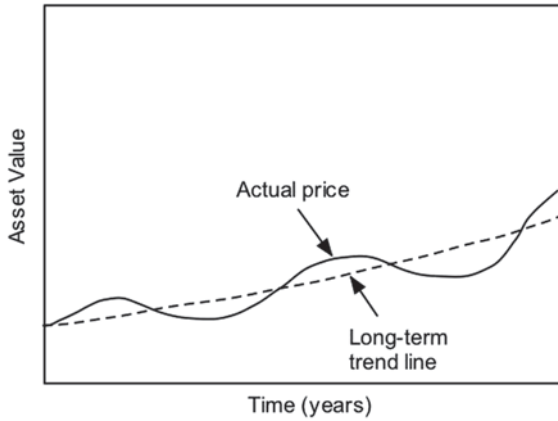


Fig. 1.1 “Normal” fluctuations of asset value about a long-term trend line

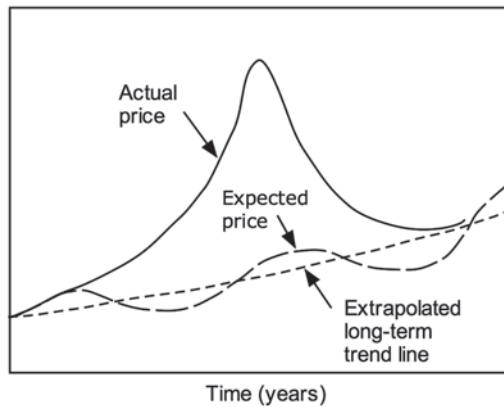


Fig. 1.2 Market boom departs from a long-term trend line

When such an upward trend begins, it provides a great attraction to many people who view this as a pathway to riches. While many hold back at first, as the boom accelerates upward, the urge to join in becomes almost irresistible.

A good metaphor is provided by the classic silent film of 1927, directed by René Clair: *A Nous La Liberté*. There is a scene in the film in which many dignified members of the Chamber of Deputies, dressed in formal attire, are lined up in a courtyard to honor an entrepreneur who is upstairs preparing to abscond with a suitcase full of paper money. A windstorm comes up and blows the bills out the window where they drop down and swirl around at the feet of the Deputies. At first, no one makes a move. Then one, then two, then a few Deputies start picking up bills. Finally, they are all floundering around on all fours retrieving errant bills.

The essence of the boom is *momentum buying*. Whether it is stocks or real estate or whatever, the issue is no longer one of *value* in the usual sense. In this scheme of things, the whole notion of a *value* of an investment or commodity becomes irrelevant. Once such a trend is established, a large number of greedy investors jump on the bandwagon. By investing further into the boom, they create more demand, driving prices further up. As this upward momentum spiral expands, the lure of wealth, quick wealth, and wealth unearned becomes enormous. Those who held back in the beginning are sucked in, as by a gigantic vacuum.

Gjerstad and Smith<sup>3</sup> (GS) said,

A sufficient condition for a bubble to arise and be sustained is when some agents buy not on any *discount from fundamental value*, but on price trend or *momentum*. When the momentum trading sentiment increases, the bubble becomes more pronounced. If momentum traders have more liquidity, either in the form of higher endowments of cash or access to margin buying, they can sustain a bubble longer.

Momentum trading and liquidity can fuel a bubble, but the factors that spark the formation of ebullient price expectations both inside and outside the laboratory—in a “crowd”—and those that trigger the sudden turnaround in those expectations, resulting in a crash, remain mysteries. We can model price bubbles, and we have learned much about the conditions that exacerbate or dampen them. But the sparks that ignite them, and the myopic, self-reinforcing behavioral mechanisms that sustain them, remain unpredictable.

GS cited numerous studies and models that indicate that markets function very well when the “items traded are not re-traded later, but instead are produced, purchased, consumed, and disappear, and this process is repeated over and over.” But GS pointed out,

... in asset markets where the item can be resold, value can depend on how a buyer thinks others will value it in the future... Human behavior in asset-trading markets leads to dramatically different convergence results from those in commodity-flow markets, even under conditions of high transparency. In their experiment, assets pay dividends over many periods. In early periods, prices rise and soon exceed the expected stream of dividend payments that the asset will yield. Halfway through an experiment session, asset prices are often 50 % or even 100 % higher than the expected dividend payments. While under stationary conditions, a market consisting of people who have previously been through two complete experiment sessions—such that they’ve had the

<sup>3</sup> By permission from: Gjerstad and Smith (2009).



same experience twice before—finally converges to fundamental values (rational equilibrium) in the last session, it will tend to generate substantial bubbles in the earlier sessions. Although baffling at first, these results were replicated with widely different groups of traders.... While under stationary conditions, a market consisting of people who have previously been through two complete experiment sessions—such that they've had the same experience twice before—finally converges to fundamental values (rational equilibrium) in the last session, it will tend to generate substantial bubbles in the earlier sessions. Economists first had to overcome the shock that laboratory markets, like those of daily consumer life, proved the “wisdom of crowds” when people—informed only about their private individual values (as buyers) or of their private costs (as sellers)—sell, buy, and consume items in a process that is replicated over time. But the next shocker was that in asset markets, the wisdom of crowds failed decisively. The key difference in asset markets was the prospect of resale, with no immediate endpoint consumption.

Houses and securities can be re-traded, unlike hamburgers, plumbing repairs, haircuts, and all manner of consumer and producer services. People rely on their investments in asset markets, including the chief asset of many—their houses—to meet retirement and other significant lifecycle needs, and, naturally, they desire high yields on those investments. Firms rely on asset markets for the effective allocation of savings toward productive new investments and innovative technologies. When bubbles emerge, the effect is to distort prices and yields, interfering with both of these objectives.

The sparks that initiate bubbles remain a mystery, but once one is underway, we have a basic understanding of their mechanics. The expectations that people have of future price changes, and the provision of liquidity to an asset market, are integral elements in understanding how bubbles grow and are sustained.

The conclusion from all this research seems to be that for assets that can be purchased and resold, as opposed to goods that are consumed, the formation of bubbles seems to be in the very heart of human nature. Thus, a bubble is not an unnatural state. Quite the contrary, it lies in human nature that assets which can be resold will undergo price variations and when for any reason, an upward trend gets established, the age-old desire to buy based on momentum (rather than value) takes over. As momentum builds, more and more reluctant investors are sucked in as by a gigantic vacuum, and the bubble expands ever more rapidly. When asset markets behave with moderation, that is the exception rather than the rule.

As K&A pointed out astutely:

“There is nothing as disturbing to one’s well-being and judgment as to see a friend get rich.”

Many more people cannot resist the temptation to make a quick buck for no effort, and more and more money pours into the system, driving prices to previously unimaginable levels. The urge to make quick unearned profits becomes so great that investors borrow to the hilt to invest even more funds into the boom, thus leveraging their investments.

*Momentum buying* involves: (1) identify a trend, (2) pay almost any price to get aboard the trend, (3) wait a bit for someone (“a bigger fool”) to come along and drive up the price further, and (4) sell to him. Who has not received a circular urging purchase of a common stock at 50 that not so long ago was at 1 or 2?

Inevitably, the result of such a boom is that eventually, asset prices top out when they are driven to such extraordinary values that they can no longer be sustained. For example, housing prices might become so high that hardly anyone can afford to buy one, and the sales boom collapses. Or by some strange coincidence, a number of investors might feel that the boom has run its course, and sell, thus driving prices down. There might be more objective reasons for the end of the boom. For example, in the California housing boom of 2001–2007, many speculative house buyers took on adjustable rate mortgages with low initial rates, expecting that capital appreciation would allow them to sell out with a profit just about when the mortgage rate was programmed to increase to an unaffordable level. When capital appreciation topped out in 2007, they were left holding mortgages that stepped up to levels they could not afford. Some politicians rushed in to try to bail out these speculators under the belief that they were poor people manipulated by big bad banks.

*Momentum selling* works in reverse of *momentum buying*, although price drops tend to be more precipitous than price increases for a number of reasons (it requires funds to buy, not to sell; margin calls can produce forced selling of stocks; during downward spirals, there may not be buyers around, etc.). The greatest challenge in *momentum buying* is step (4): selling to a bigger fool before the inevitable collapse of the bubble. The problem is that while a boom is racing upward, it is difficult to tell how far the market is from a top, and the euphoria is so endemic that few people perceive that there even will be a top. Very few people can sell out during the middle of a boom without great regret and heartache when prices continue to rise after they sold out. Many stories abound of investors who sold, agonized as the market continued upward, and then were lured back in, only to see the market collapse upon their second investment.

It is widely believed that loose monetary policy and low interest rates promote bubble formation. This is undoubtedly true to a great extent. However, JKG also concluded,

Far more important than rate of interest and the supply of credit is the mood. Speculation on a large scale requires a pervasive sense of confidence and optimism and conviction that ordinary people were meant to be rich.

The effect of low interest rates does not seem to be a direct stimulation of business, as much as it discourages savers from investing in interest-bearing accounts and securities, thus promoting paper asset bubbles. JKG also reported on Will Payne's distinction between an investor and a gambler, saying that in gambling there is a fixed amount of money and there is a loser for each winner. However, in investing, if the bubble keeps expanding, everyone wins. *A* buys at 10, and sells at 20 to *B*. *B* sells to *C* at 30, etc. Until the bubble pops, everyone gains.

### 1.3 The rise of manias and bubbles

It seems likely that manias and booms are not typically generated merely on the basis that an arbitrary market is rising due to a statistical fluctuation, and investors want to get “on board” before the train reaches its destination. In many cases, there appear to be external influences that lead investors to think there is a credible basis for investing in the boom. These influences might be categorized as follows:

1. ***New technology***: K&A postulated (after Minsky) that “shocks” were responsible for booms. JKG suggested that discovery of something that is ostensibly new, might provide the impetus for a new boom and bubble. These seem to be alternative ways of saying almost the same thing. Certainly, there have been booms and bubbles that were based on sound anticipation of gains to be made from new technical developments. There might be beliefs that new technology will fundamentally alter the business picture, allowing companies to make unprecedented profits. This was a major factor in the boom of the 1920s (widespread expansion of automobiles, highways and electrification), and the 1990s (the Internet would change the way we purchase goods, store information, and communicate). In both instances, these beliefs proved to be correct in the longer run. Automobiles, highways, electrification, and the Internet did indeed eventually produce massive benefits to society and significant increases in efficiency and productivity. Where investors went wrong was in anticipating a more immediate payoff than was possible, and more importantly, these fields became overpopulated with too many companies rushing in to participate too quickly. Ultimately, there had to be a shakeout that eliminated many of the weakest. As

the years went by, the stronger firms with the best products (e.g., Google) prospered. These booms were initially based on sound perceptions, even if the timing was off and the expectation of immediate profits got out of hand. Nevertheless, during the booms of the 1920s and 1990s, investors bid up the price of common shares to levels far beyond what could reasonably be considered appropriate (in retrospect), even taking into account the benefits of new technology.

2. ***Domino effect:*** There is a phenomenon that K&A called “bubble contagion.” According to K&A, four distinct asset price bubbles in the last 15 years of the twentieth century were systematically related. As each bubble popped, the remaining accumulated funds found their way into an emerging bubble in another country. The Japanese real estate and stock bubble provided funds to expand the bubble in real estate and stocks of Finland, Norway, and Sweden. After the Japanese bubble burst around 1990, an inflow of funds from Tokyo in the several years following the Japanese implosion supported the bubbles in Thailand, Malaysia, and Indonesia and their neighbors in the mid-1990s. This eventually led to a surge in the flow of funds from the East Asian countries to the USA that helped boost the *dot.com* bubble of late 1990s in the USA. This was followed by the combined stock and housing boom of 1997–2007 fueled by a plentiful money supply that the Fed generated as an antidote to the crash of the *dot.com* bubble. When the 1997–2007 bubble burst, the Fed immediately embarked on a huge program of even more plentiful money supply, fueled by debt, as an antidote to the crash of the housing bubble. This, in turn, created a new stock market bubble and incipient new housing bubble in 2012–2013. Asset price bubbles in major industrial countries had been rare prior to the past few decades of the twentieth century, with the boom of the late 1920s representing a unique occurrence. However, beginning around 1982 we have experienced repeated bubbles, often with multiple nations participating. This appears to be tied to the excessive money supply worldwide, fueled by debt, acting like a fluid under pressure, flowing into whichever reservoirs are attractive at the time. As each reservoir overfills and empties, the fluid under pressure seeks the next available reservoir.
3. ***Money supply and interest rates:*** It is widely believed that actions (or inactions) of central banks via monetary policy and interest rate adjustment have a profound effect on the economy. Since about 1980, and to a great degree even well before, whenever the US Federal Reserve System even hinted at a cut in interest rates, common stocks usually went shooting up, while in the absence of prospects for a plentiful money supply, other financial woes weighed the stock markets down.

The common belief is that the role of a central bank is a delicate balancing act. On the one hand, lowering interest rates and increasing the money supply improves prosperity, but it runs the risk of increased inflation. According to this theory, if it were not for the threat of inflation, central banks could reduce interest rates to generate almost any desired level of prosperity, but the threat of runaway inflation inhibits this action. According to myth, central banks lower interest rates when they fear stagnation in the economy. However, as this stimulus generates a boom in asset prices, central banks are loath to stifle the boom by raising interest rates because of potential negative political consequences—they do not want to be the rain that falls on the investors' picnic. K&A discussed at some length whether monetary authorities should tighten credit to raise the cost of speculation during asset booms. They argued that when commodity and asset markets move together, up or down, the direction that monetary policy should take is clear (opposing extremes in either direction). But according to K&A, when share prices or real estate or both soar while commodity prices are stable or falling, the authorities face a dilemma. Note that if paper asset prices soar while commodity prices remain stable, this would seem to create wealth out of nothing. If more money is available for products at stable prices, this should make everyone richer. We discuss this in Sect. 1.6. If the authorities stifle speculation, there is a likelihood that the economy could plunge. On the other hand, if they support the economy with low interest rates, speculation is likely to be rampant. This dilemma was faced in the 1920s in the USA, in Japan in the late 1980s, again in the USA in the late 1990s, and once more in the USA in 2008–2013. Alan Greenspan was concerned (or pretended he was concerned—we will never know) that US stock prices were too high or increasing too rapidly when he made his famous remark “irrational exuberance” in December 1996. Despite this comment, the Federal Reserve was reluctant to raise interest rates to dampen the booming stock market because they were concerned that they might stifle economic growth. In addition, the Fed was concerned about the so-called “Y2K problem, the likelihood that US computer systems collapse because so many software programs were not designed to [accommodate] the transition to 2000.” As a result, they pumped money into the banking system to promote liquidity in late 1999. As K&A said: “...the money had to go someplace so it fed stock market speculation.”

Supposedly, central banks are most concerned with keeping inflation at 2% or lower, but should asset prices be included in the calculation of inflation rate? K&A pointed out: “in one view, asset prices should be incorporated into the general price level because, in a world of [supposedly] efficient markets, they hold a forecast of future prices and consumption. But this view assumes that asset prices are determined by the economic fundamentals and are not

affected by herd behavior that leads to a bubble.” A stronger argument can be made that asset prices should be included in the general price level because (1) investing in stocks is a real cost to most people during their working years who contribute yearly to retirement plans and when stocks are higher, this cost goes up; (2) new entries into the residential home market face higher prices when housing prices rise; and (3) during housing bubbles, the ratio of house prices to rentals rises significantly but the cost of living only includes rental costs. K&A concluded that central bankers “have been exceedingly reluctant to attempt to deal with asset price bubbles or even to recognize that they exist or could have existed.” The answer seems to be that they do not want to be the *Grinch who stole Christmas*. Central banks would rather allow a bubble to expand than be accused of opposing prosperity. Over the past three decades or so, real wages have risen very slowly, if at all (see Figs. 1.8 and 1.20). The increase in productivity resulting from modern computers, electronics, and the Internet enabled businesses to build and deliver goods with fewer employees. The growth in free trade has allowed much of US manufacturing capacity to be usurped by China and other developing nations. This combination has put a damper on consumer prosperity. Capitalism has not found a way to put more purchasing power in the hands of the general public through real earned income, and the only alternative seems to be to promote asset bubbles. Starting with the Reagan administration in the early 1980s, and extending forward through administrations of Bush and Greenspan, and Obama and Bernanke, the policies of the US government have been first and foremost to promote asset bubbles.

The discussion by K&A seems to neglect the fact that the Federal Reserve is a quasi-political body that keeps one eye on the upcoming election. People are happier during asset boom times and are more likely to reelect the current party in power. In late 2007, the stock market underwent a number of severe 1-day precipitous drops in reaction to the collapse of the housing bubble and its effect on subprime mortgages and bank losses, but the Federal Reserve rose to each such occasion with rate cuts that produced equally sharp 1-day reversals in the stock market indices. The Federal Reserve seemed to take on the role of the protector of stock market bubbles. The same has been true during the period 2008–2014. Every hint by the Fed of an increase in interest rates is followed by a precipitous drop in the stock markets. This panics the Fed, and they immediately recant. The stock market then bounces up 1000 points or more.

Whether the Federal Reserve should intercede to protect the profits of speculators has been argued from both sides. But neither side of the debate seems to doubt the power of monetary policy to affect economic growth.

However, Robert E. Lucas (Nobel laureate in economics) argued against the common belief that easy money policy with low interest rates boosts economic growth. Ever more empirical evidence suggests that monetary policy might be ineffective. For example, two decades of close to zero interest rates in Japan and Switzerland were totally inadequate to provide any stimulus to their sluggish growth. According to Lucas, the only significant effect of increasing the money supply is to increase inflation, which slows down growth in the long run. So any attempt to boost growth through reducing interest rates is therefore ultimately counterproductive. Yet in the aftermath of the 2008 crash, the Fed has kept interest rates at record lows and there has not been excessive inflation. Furthermore, low interest rates make saving less attractive, which drives money out of the fixed-income investments into stocks and real estate, making the rich richer, and the poor poorer.

It seems evident that easy money policy with low interest rates boosts speculation, paper profits, and bubbles, but that is not quite the same as prosperity—or is it? In Sect. 1.6, I discuss the point that classical economics would predict that flooding the marketplace with easy money should produce significant inflation as more money chases the same amount of goods. However, in the past few decades, we have experienced massive expansions of the money supply without severe inflation (as defined by the conventional Consumer Price Index). Nevertheless, if the rise in asset values were added to consumer price inflation, that would change inflation indices dramatically. In addition, there were special circumstances holding a lid on the cost of consumer goods in the 1990s that might not work so well in the future (e.g., cheap imported goods from China).

Paul Vreyman<sup>4</sup> performed an analysis of 50 years of monetary history, and concluded that the evidence indicated that expansion of the money supply has no significant effect on gross domestic product (GDP) growth. He pointed out that the total spending in the economy is a product of (amount of money in circulation) and (rate at which money circulates). The rate at which money circulates (aka money velocity) is measured by the number of times each unit of currency is used during a year.

The common wisdom (widely assumed) is that the money velocity is fairly constant. Therefore, increasing the amount of money in circulation is supposed to increase total spending proportionately. Vreyman plotted changes in the money supply and the money velocity on the same graph from 1962 to 2012 and discovered a remarkable strong anticorrelation between the two. As he said,

---

<sup>4</sup> Vreyman (2013).



The monetary expansion is neutralized largely by the simultaneous decline of money velocity. Most of the cash injected in the economy is neither spent nor lent but hoarded.

He also analyzed data over the same time period comparing growth in the GDP with changes in the money supply and found very little correlation of GDP growth with increases in the money supply during preceding quarters. Instead of stimulating the economy, he argued that “interest rate suppression in particular proves counterproductive with devastating deflationary effects as a result.” Low yields tend to stimulate hoarding, depressing aggregate demand.

While low interest rates have the intended effect of boosting demand for credit, they also depress the supply. Lenders’ eagerness to grant loans declines along with declining rates and margins. “Savers, insurance trusts, investment funds, retirees etc. thereby see their spending power structurally impaired. The lower yields, the more pension reserves need to be provisioned and the less cash remains available for immediate spending.”

#### *4. Developing new areas with favorable features.*

On occasion, the prospect of opening up new areas for living in favorable climates can provide the impetus for investment bubbles. For example, over the years, there have been land booms in the South Seas, Florida, and California and the Southwestern USA (see Sects. 2.2, 2.6, and 2.11).

#### *5. Financial Innovation*

JKG<sup>5</sup> claimed that some booms and bubbles were based on financial (as opposed to technical) innovations. One example is the advent of holding companies (*a.k.a.* investment trusts) in the 1920s. The stockholders issued bonds and preferred stock, and used the proceeds to invest in other common stocks, but all this amounted to was increased leverage: a means of increasing the amount of money invested in the stock market compared to the investment made by common stockholders in the holding company. Investment trusts were described in some detail by JKG.<sup>6</sup> They were in some sense a precursor to modern mutual funds. These trusts provided ordinary citizens with a means of investing on a leveraged basis into a broad aggregate of common stocks that they would not have been able to afford if they had bought stocks directly.

Another example was the issuance of junk bonds in the 1980s with comparatively high interest rates for the purpose of raiding and taking over legitimate companies by relatively lesser companies of dubious distinction. A third

---

<sup>5</sup> Galbraith (1993).

<sup>6</sup> Galbraith (1954).



example during the 1980s was the deregulation of savings and loan institutions (S&Ls) in the misguided belief that this could allow them to cope with the underlying problem of high current interest rates paid out on deposits versus low rates of return on long-term mortgages. A fourth example was the deregulation of utilities that led to criminal manipulation of utility assets by the Enron Corporation and others in the 1990s.

However, JKG took a dim view of “financial innovation.” He suggested that what the world celebrates as great financial innovations are actually small variations on past systems that have been forgotten due to the “short memory of financiers.” As JKG described it,

The world of finance hails the invention of the wheel over and over again, often in a slightly more unstable version. All financial innovation involves, in one form or another, the creation of debt secured to a greater or lesser adequacy by real assets.

Many other booms and bubbles were based on pure fluff, and amounted to little more than elaborate Ponzi schemes. These include John Law’s Banque Royale and its Mississippi Company (1716–1720) to pursue putative gold deposits in the Louisiana Territory in which the sale of stock was not used to prospect for gold but to pay French government debts. The English version of the Ponzi scheme was the South Sea Company that also blew up in 1720, leading to passage of the “Bubble Act” to constrain illegitimate promotions. See Sect. 2.1. The current debt of the US Federal Government in 2013 is a Ponzi scheme because there seems to be no way that these loans can be repaid except by borrowing via new loans.

Jiménez<sup>7</sup> presented a discussion of financial bubbles that is somewhat parallel to that given herein. Jiménez listed four aspects that seem to be common to most financial bubbles:

1. A supreme rise in asset prices. Asset prices rising usually at double digits in a short period of time, diverging from fundamental values and as Jiménez said, “reaching ridiculously high prices.” Of course, not everyone agrees as to when a price is “ridiculously high.” Certainly, the Federal Reserve has a high tolerance for seemingly absurd prices of assets. Quite a few authors, including Jiménez, have produced complex mathematical models to determine whether a bubble exists, but these seem to be unnecessary and artificial. There are some things that we know even though we might lack a mathematical algorithm to validate it.

---

<sup>7</sup> Jiménez (2011).

2. A massive investment/speculation with large amounts of money flowing “towards one focus.” Here again, what constitutes a massive amount of money lies somewhat in the eye of the beholder.
3. A prospect of new technology or new ventures with great potential to revolutionize business; however, there is great uncertainty about the “profitability of companies involved, as well as their business strategy, their markets capacity, etc.” We have seen this with the advent of modern computers, electronics, and the Internet in the 1990s.
4. Leverage also seems to be a necessary factor in generating bubbles. Jiménez cited many examples where financial leverage influenced bubbles, starting with the tulip craze.
5. Jiménez argued that government policies played a role in various stages of every historical bubble. He said: “It could be argued that governments usually take part directly or indirectly at a certain stage of a bubble process, being it at the incubation, the formation, the proliferation, or the burst—if not at every stage.” As we discuss further in this book, government action occurs primarily in providing an ample money supply, responding to every falter in the markets with a rate cut, and assuring a bailout if the bubble bursts. Since the 1980s, the Federal Reserve has come riding to the rescue every single time the markets (stock or real estate) faltered.

## 1.4 Stages in the Boom–Bubble–Bust Sequence

Jiménez presented a graphical outline of the stages of a bubble and bust (originally drawn by J. P. Rodrigue<sup>8</sup>) as shown in modified form in Fig. 1.3.

In a very astute and incisive description of the boom–bubble–bust sequence, Rodrigue<sup>9</sup> described the stages of the boom–bubble–bust sequence as follows:

### Stealth Phase

Those who understand the new fundamentals realize an emerging opportunity for substantial future appreciation, but at a substantial risk since their assumptions are so far unproven. So the “smart money” gets in, often quietly and cautiously. This category of investor tends to have better access to information and a higher capacity to understand it. Prices gradually increase, but often completely unnoticed by the general population. Larger and larger positions are established as the smart money start to better understand that the funda-

<sup>8</sup> <http://canadianfinanceblog.com/is-the-current-market-a-return-to-normal/>.

<sup>9</sup> <http://canadianfinanceblog.com/is-the-current-market-a-return-to-normal/>.

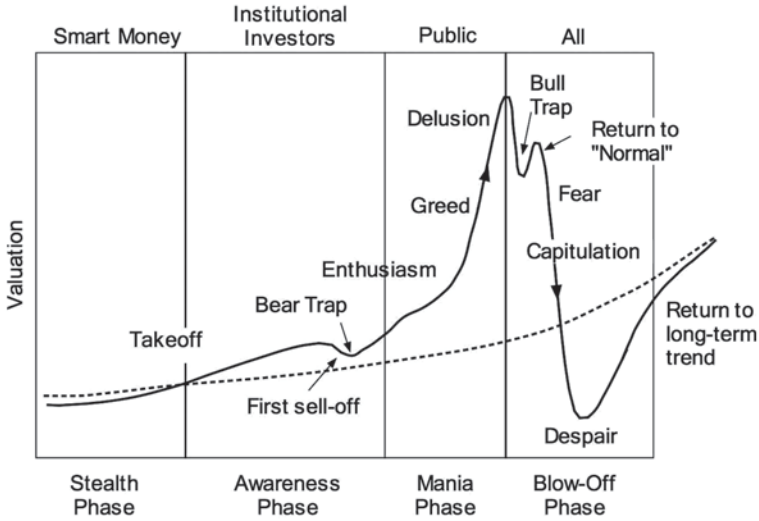


Fig. 1.3 Stages of a boom, bubble, bust, and recovery

mentals are well grounded and that this asset is likely to experience significant future valuations.

#### Awareness Phase

Many investors start to realize the momentum, bringing additional money in and pushing prices higher. There can be a short-lived sell off phase taking place as a few investors cash in their first profits (there could also be several sell off phases, each beginning at an higher level than the previous one). The smart money takes this opportunity to reinforce its existing positions. In the later stages of this phase the media starts to notice and those getting in are increasingly “unsophisticated.”

#### Mania Phase

Everyone notices that prices are going up and the public jumps in for this “investment opportunity of a lifetime.” The expectation of future appreciation becomes a “no brainer” and a linear inference mentality sets in; future prices are a “guaranteed” extrapolation of past price appreciation, which of course goes against any conventional wisdom. This phase is however not about logic. Floods of money come in creating even greater expectations and pushing prices to stratospheric levels. The higher the price, the more investments pour in. Fairly unnoticed from the general public caught in this new frenzy, the smart money as well as many institutional investors are quietly pulling out and selling their assets to eager future bag holders. Unbiased opinion about the fundamentals becomes increasingly difficult to find as many players are heavily invested and have every interest to keep the appreciation—“the game”—going. The market gradually becomes more exuberant as “paper fortunes” are made and greed sets in. Everyone tries to jump in and new investors have absolutely

no understanding of the market, its dynamic and fundamentals. Prices are simply bid up with all financial means possible, particularly leverage and debt. If the bubble is linked with lax sources of credit, then it will endure far longer than many observers would expect. At some point statements are made about entirely new fundamentals implying that a “permanent high plateau” has been reached to justify future price increases; the bubble is about to collapse.

#### Blow off Phase

A moment of epiphany (a trigger) arrives and everyone roughly at the same time realizes that the situation has changed (like the Road Runner Coyote realizing he is about to fall after walking on thin air for a few seconds). Confidence and expectations encounter a paradigm shift, call it a reality check, not without a phase of denial where many try to reassure the public that this is just a temporary setback and that anyone saying otherwise does not know what he is talking about. Some are fooled, but not for long. Like a directionless herd many try to unload their assets to a greater fool, but takers are few; everyone is expecting further price declines. The house of cards collapses under its own weight and latecomers (commonly the general public) are left to hold the bag while the smart money has pulled out a long time ago. Prices plummet at a rate much faster than the one that inflated the bubble. Many over-leveraged bag holders go bankrupt, triggering additional waves of sales. There is even the possibility that the valuation undershoots the long-term mean, implying a significant buying opportunity. However, the general public at this point considers this sector as “the worst possible investment one can make in his life.” This is the time when the smart money starts reacquiring assets at bargain bottom prices.

While this classical description is probably reasonably accurate for past bubbles, there did not seem to be much “smart money” around during the real estate boom of 2002–2007.<sup>10</sup>

## 1.5 Fueling the Boom: Role of the Media

K&A discussed a number of factors that help fuel booms. Books, magazines, news reports, and the media in general amplify the enthusiasm for the boom. JKG noted that during the boom years of the 1920s, there were many articles and press releases encouraging the bubble. One example was an article in the *Ladies Home Journal* entitled: “Everybody Ought to be Rich.” The book *Japan as Number One—Lessons for America* was a 1979 best seller that “launched a thousand other efforts in *Japan Hying*.” In the 1980s, there were many

---

<sup>10</sup> The above was inserted with permission from J. P. Rodrigue.

rooms in the USA filled with white-collar professionals paying hundreds of dollars each, for the right to hear a speaker tell of the wonders of Japanese management schemes that were far ahead of the rest of the world. The World Bank published *The East Asian Miracle* several years before the bubble in real estate prices and stock prices in Thailand and Malaysia and their neighbors imploded. As the boom progresses, the urge to create landmark skyscrapers and other buildings provides further fuel for the boom.

During bubble expansions, anyone who suggests that the bubble will pop is typically denounced in the press. On September 5, 1929, Roger Babson made his famous prognostication:

Sooner or later, a crash is coming, and it may be terrific.... Factories will shut down...men will be thrown out of work...the vicious circle will get into full swing and the result will be a serious business depression.

Babson was roundly vilified by the whole investment community.

K&A asserted that rising asset prices (typically residential housing and stocks) provide positive feedback loops to national income, which then cyclically, further increases asset prices. According to K&A, households typically have savings or wealth objectives. As their paper wealth increases from the surge in asset prices, households save less from earned income because their future is secured by their increases in asset values, and thus they spend more on consumer goods and services. When stock prices increase, firms can raise cash from existing and new investors at lower costs and can undertake new projects that would be less profitable. Greenspan referred to this as “the wealth effect” and seemed to think it was a good thing to be encouraged by policies of the Fed.

The main question here is whether rising assets produce wealth or increased wealth produces rising asset prices. This is discussed in the next section.

## 1.6 Bubbles, Wealth, and Inflation

### 1.6.1 Do Bubbles Produce Wealth?

Imagine that we could all get together at once and decide that the price of all housing in America will double as of today. Since the major asset of many people in the middle class is their residence, this would almost double the net worth of many millions of people. Similarly, suppose we could all agree to increase the price of stocks by a factor of 10. That would benefit the rich the most, but it would also increase the net worth of many in the middle class,

particularly those at the higher end. Now if costs of consumer goods and services did not change much as a result of these changes in asset prices, consumers could borrow against the increase in value of their homes, or sell some securities, and use the money so released to purchase many more goods and services than they could yesterday. Homeowners and stock investors would be substantially richer than they were yesterday.

Alternatively, suppose that the Federal Government prints a huge pile of cash and distributes to each citizen an amount of cash equal to his net worth. (Note that in 2008, the Congress distributed as much as US\$ 1200 to each household in America. The source of these funds is likely to have been borrowing from China. China was happy to provide these funds to protect its principal markets, knowing that most of the money will be spent on goods produced in China.) Then each person would be twice as rich as he was previously.

According to Economics 101, that cannot (or at least it should not) happen. For example, the following quote is taken from Paul Vreymans:<sup>11</sup>

Inflationary money such as bankers create from thin air obviously does not increase wealth of a nation nor its real buying power, as their increase of the money supply is not accompanied by an increase of real goods or services. The nominal buying power such money provides to borrowers is merely diluted buying power.... Easy money policy can never cause real growth, but merely creates a nominal illusion of progress. In the end real wealth can only be increased through increasing the availability of real goods and services, and the only way to increase production of tangible services and commodities is by working more or by producing more efficiently. And productivity can only be improved to a substantial extent through investment in better machines, superior techniques or improved infrastructure. So a policy aiming at real growth must therefore promote saving and investment, and certainly should not stimulate consumption. Easy money does the opposite: it promotes consumption, discourages saving, penalizes investment and productive contribution, in the long run all slowing down real growth; exactly the opposite of what it was set up to do.

This is the standard textbook explanation. To produce a “real” increase in wealth, one must “increase production of tangible services and commodities” rather than merely raising asset values or printing money. Merely increasing asset values or the money supply should theoretically cause more money to

---

<sup>11</sup> By permission of Paul Vreymans: Work and Wealth for All, [http://workforall.net/ineffectiveness\\_of\\_monetary\\_policy\\_.html](http://workforall.net/ineffectiveness_of_monetary_policy_.html).

chase the same amount of goods, driving up consumer prices, causing inflation, with no real gain in true wealth.

However, increases in asset values or the money supply do not occur instantaneously and it might require considerable time for their impacts to take effect. Over such a period, it is conceivable that continued expansion of the money supply and/or growth of asset values might actually create demand which could stimulate increases in capacity as well as innovation, that could lead to “increased production of tangible services and commodities.” Yet this effect, being secondary rather than primary, would not likely lead to significantly greater prosperity. The classical economic belief is that expansion of the money supply and/or growth of asset values do not per se increase wealth and prosperity.

A website<sup>12</sup> provides the common wisdom:

Can Governments or Central Banks “Will” Real Wealth into Existence? Of course not! Real Wealth can only be created from work and natural resources. It is physically impossible to “Will” real wealth into existence. WORK must be performed to create Real Wealth with the exception of Natural Resources. i.e. Real Wealth is NOT Fiat Currency, Bonds, “paper assets,” etc.

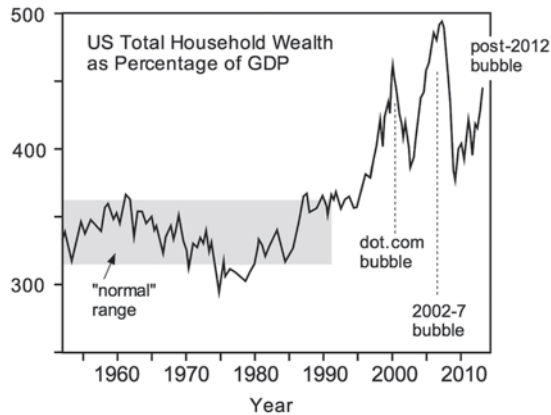
This is the commonly held belief.

Sornette and Woodward<sup>13</sup> discussed “the illusion of a *perpetual money machine*.” They said,

This term refers to the fantasy developed over the last 15 years that financial innovations and the concept that ‘this time, it is different’ could provide an accelerated wealth increase. In the same way that the perpetual motion machine is an impossible dream violating the fundamental laws of physics, it is impossible for an economy which expands at a real growth rate of 2–3 % per year to provide a universal profit of 10–15 % per year, as many investors have dreamed of (and obtained on mostly unrealized market gains in the last decade). The overall wealth growth rate has to equate to the growth rate of the economy. Of course, some sectors can exhibit transient accelerated growth due to innovations and discoveries. But it is a simple mathematical identity that global wealth appreciation has to equal GDP growth. However, in the last decade and a half, this identity has been violated by an extraordinary expansion of the financial sphere. Here we confront the issue as to whether wealth can be created out of thin air by bidding up the price of paper.

<sup>12</sup> Can Governments or Central Banks “Will” Real Wealth into Existence?, [austrianenginomics.com/CanGovernmentsorCentralBanksWillRealWealth.pdf](http://austrianenginomics.com/CanGovernmentsorCentralBanksWillRealWealth.pdf).

<sup>13</sup> Sornette and Woodward (2009), all quotes from Sornette papers by permission from Didier Sornette.



**Fig. 1.4** US total household wealth as percentage of GDP. (By permission of Didier Sornette, Sornette and Cauwels 2014)

They showed that the total household net worth in the USA, expressed as a fraction of GDP... was relatively stable between 300 and 350 % for more than 40 years. Since 1995, two major peaks towering above 450 % occurred that were followed by their collapse. After the peak attained in the third quarter of 2007, there was a drastic drop (See Fig. 1.4).

In 2009, while gloom pervaded the markets, Sornette and Woodward said,

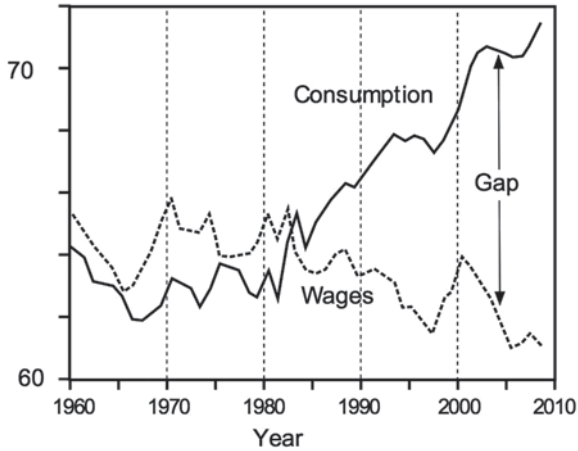
...[the data suggest] that the drop may have to continue for another 50 to 100 % of GDP to come back to historical values. This could occur via a combination of continuing house value depreciation and stock market losses. The earlier peak coincides with the top of the dot.com bubble in 2000 that was followed by more than two years of strong bearish stock markets....

As it turned out, the plunge in the ratio of total household net worth to GDP that occurred in 2008–2009 barely dropped below 400 % and a new bubble formed in the 2009–2013 period that was building momentum in 2014, as is illustrated in Fig. 1.4.

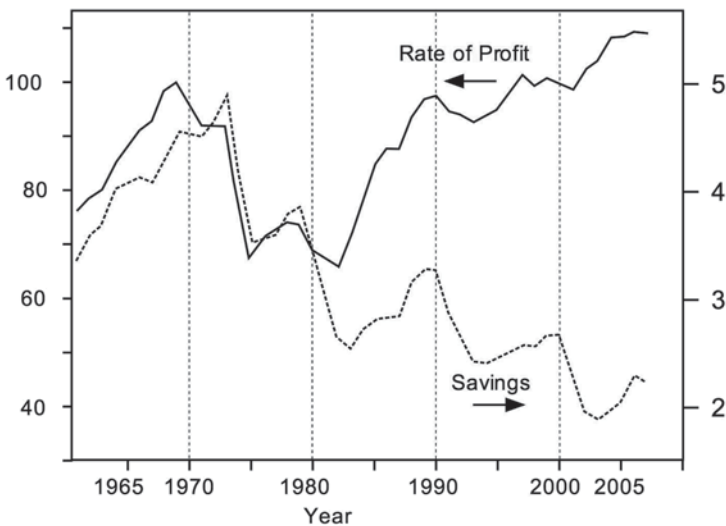
Sornette and Woodward also provided Fig. 1.5 that provides a view of the divergence between consumption and earnings in the global USA, the European Union, and Japanese economies.

One can see that prior to 1981, wages funded consumption. After the early 1980s, the gap between consumption and wages grew dramatically. This implies that consumption had to be funded by other sources of income than wages. The early 1980s coincided with the Reagan years that originated the era of large government deficits, reduced taxes, loose money supply, and booming stock and real estate markets. As profits from appreciation of paper expanded, consumers relied less and less on wages to cover spending for consumption.





**Fig. 1.5** Share of wages and of private consumption in gross domestic product (GDP) for the USA+European Union+Japan. (By permission of Didier Sornette, Sornette and Cauwels 2014)



**Fig. 1.6** Rate of profit (*left scale*; from investments) and rate of accumulation or savings (*right scale*) for the USA+European Union+Japan. (By permission of Didier Sornette, Sornette and Cauwels 2014)

Figure 1.6 shows the “rate of profit” on investments (basically a measure of the profitability of investments) compared to savings over the past four decades. As in the case of Fig. 1.5, the divergence between profits from investments and savings began in the early 1980s, and the divergence has continued ever since.

As Sornette and Woodward put it,

This suggests that the other source of income is nothing but the increasing profits from investments, while the diminishing level of savings...covered [less and less of] the increased consumption propensity. The gap widened between profit and accumulation in Fig. 1.6, so as to compensate for the difference between the share of wages and the share of consumption in Fig. 1.5.

These two figures tell us that households in the US, European Union and Japan increased their overall level of consumption from about 64% of GDP to almost 72% of GDP by extracting wealth from financial profits. Figures for the US alone confirm and amplify this conclusion. The big question is whether the financial profits were translated into real productivity gains and, therefore, were sustainable. It seems obvious today to everybody that financial innovations and their profits, which do not provide productivity gains in the real economy, cannot constitute a source of income on the long-term. This evidence was, however, lost as several exuberant bubbles developed during the last 15 years.<sup>14</sup>

The bubbles referred to by Sornette and Woodward include:

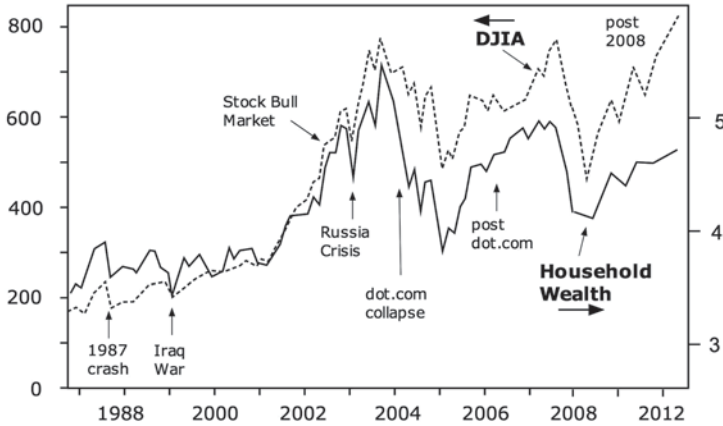
1. The *new economy* information and communications technology (ICT) bubble starting in the mid-1990s and ending with the crash of the dot.com stock market in 2000.
2. The real estate bubble launched in large part by easy access to a large amount of liquidity as a result of the active monetary policy of the US Federal Reserve lowering the Fed rate from 6.5% in 2000 to 1% in 2003 and 2004 in a successful attempt to alleviate the consequence of the 2000 stock market crash.
3. The innovations in financial engineering with the *collateralized debt obligations* (CDOs) and other derivatives of debts and loan instruments issued by banks and eagerly bought by the market, accompanying and fueling the real estate bubble.
4. The commodity bubble(s) on food, metals, and energy.
5. The post *dot.com* stock market bubble peaking in October 2007.

They also showed a strong correlation between US household wealth and the level of the stock market as evidenced by the Dow Jones Industrial Average (DJIA; see Fig. 1.7).

Sornette and Woodward went on to say,

This supports the concept that financial profits have played a crucial role in the increase of household consumption discussed above. The component of wealth

<sup>14</sup> By permission of Didier Sornette, Sornette and Cauwels 2014.



**Fig. 1.7** The stock market level and household wealth in the USA (arbitrary units, scaled to fit). The Dow Jones Industrial Average (*DJIA*) is shown scaled to base 100 in 1960. (By permission of Didier Sornette, Sornette and Cauwels 2014)

due to real estate appreciation during the housing bubble may have actually played an even bigger role, as it is well documented that the so-called wealth effect of house value is about twice that of the financial markets.

As long as the incomes drawn from financial assets are re-invested, the fortunes increase independently of any material link with the real sphere and the variation can potentially increase without serious impediment. But, financial assets represent the right to a share of the surplus value that is produced. As long as this right is not exercised, it remains virtual. But as soon as anyone exercises it, they discover that it is subject to the law of value, which means one cannot distribute more real wealth than is produced. The discrepancy between the exuberant inflation of the financial sphere and the more moderate growth of the real economy is the crux of the problem.

The lack of recognition of the fundamental cause of the financial crisis as stemming from the illusion of the '*perpetual money machine*' is symptomatic of the spirit of the time. The corollary is that the losses are not just the downturn phase of a business or financial cycle. They express a simple truth that is too painful to accept for most, that previous gains were not real, but just artificially inflated values that have bubbled in the financial sphere, without anchor and justification in the real economy. In the last decade, banks, insurance companies, Wall Street as well as Main Street and many of us have lured ourselves into believing that we were richer. But this wealth was just the result of a series of self-fulfilling bubbles.... In the USA and in Europe, we had the Internet bubble (1996–2000), the real-estate bubble (1997–2006), the mortgage-backed securities (MBS) bubble (2002–2007), an equity bubble (2003–2007), and a commodity bubble (2004–2008), each bubble alleviating the pain of the previous bubble or supporting and justifying the next bubble. The painful conse-

quence of this brutal truth is that trying to support the level of valuation based on these bubbles is like putting gas in the ‘*perpetual money machine*.’ Worse, it misuses scarce taxpayer resources, increasing long-term debts and liabilities, which are already at dangerous levels in many countries.... Objective measures and indicators can be developed to quantify the ratio of wealth resulting from finance compared with the total economy. For instance, when it is measured that, on average, 40 % of the income of major US firms result from financial investments, this is clearly a sign that the US economy is ‘building castles in the air’.

In their October 2012 update, Sornette and Cauwels<sup>15</sup> (SC) drew analogies with the laws of physics. Referring to the impossibility of a perpetual motion machine and the impossibility of creating energy out of nothing, they asked whether we can perpetually create wealth out of nothing? They said,

What about wealth? Can it be created out of thin air? Surely, a central bank can print crisp banknotes and, by means of the modern electronic equivalent, easily add another zero to its balance sheet. But what is the deeper meaning of this money creation? Does it create real value? Common sense,...would argue that money creation that outpaces real demand is a recipe for inflation.... While it is true that, like energy, wealth cannot be created out of thin air, there is a fundamental difference: whereas some marginal scientists’ belief in a perpetual motion machine had essentially no impact, its financial equivalent has been the hidden cause behind the current economic impasse.

Not only did SC question whether wealth can be created out of nothing, but they implied that the cause behind the recent economic problems lies in the widely held belief that wealth can be created simply by bidding up the price of assets.

SC put the question more specifically by asking:

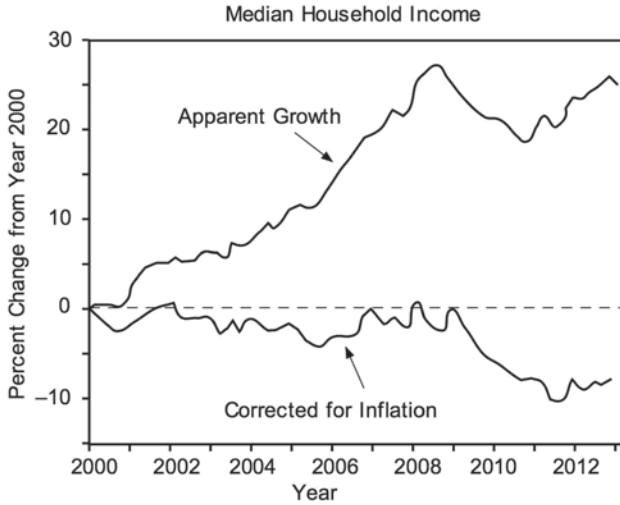
Is it sustainable for an economy that expands at a real growth rate of 2–3 per cent per year to provide a return of say 10–15 per cent per year averaged over all the possible investment opportunities offered to all investors?

SC responded to this question by arguing that while some special situations can grow at a faster pace, on an overall basis:

Overall, global wealth cannot grow sustainably faster than GDP does. In fact, any difference can be explained only through the existence of bubbles, which

---

<sup>15</sup> Sornette and Cauwels (2012).



**Fig. 1.8** Growth in median household income. (By permission from Smith 2013)

in this context can be understood as temporary acceleration in the financial growth of a sector or a company that is not translated into real productivity gains.

They presented data on stock prices and household wealth from 1952 to 2012 that showed:

1. On average, “GDP and US stock market valuation have grown roughly at the same rate, supporting the argument made above that, in the long term, they grow together at a similar rate.”
2. However, large excursions from this average took place on three occasions when excessive valuations were followed by sharp crashes that brought the levels back down to the long-term trend.
3. “Household wealth has basically been tied to the bubbles and crashes that determined the financial profits obtained from stock-market investments and real estate. Interestingly, at about four times GDP (see Fig. 1.4), the present level of wealth is still above the average level of the pre-1990 period (see Fig. 1.5). This raises the question of whether this is a sign of permanent improvement, or whether more deflation is still to come.” (Indeed, since real wages did not increase sufficiently to account for this increase in wealth (see Fig. 1.8), it had to derive from financial profits.)

SC pointed out that Fig. 1.5 indicates that “until the mid-1980s, wages mainly funded consumption. Since then, consumption has outstripped wages and

the gap has been increasing dramatically. This begs the following fundamental question: if not with wages, how has this increase in consumption been financed?" They provided data that show that households in the USA, the European Union, and Japan have increased their overall level of consumption by "somewhat decreasing savings and mainly by extracting wealth from financial profits."

According to SC, "The final piece of the puzzle is obtained by plotting the sum of Federal government debt plus private sector debt as a percentage of GDP. This ratio, which had been fairly consistent at around 150 % from 1870 to 1980 (except for a thin spike centered on 1933 when the GDP dropped precipitously) exploded upward after the mid-1980s, reaching about 380 % in 2010 and 350 % in late 2013." SC analyzed these data and concluded:

Thirty years ago, our economic and financial system shifted from growth based on productivity to growth based on debt. As a consequence, the past three decades have been characterized by financial markets, central banks and treasuries being entangled in a series of manias and panics. This process has been fuelled by ever-increasing debt levels." They concluded that debt levels are on "unsustainable tracks that, according to their bubble models, are expected to reach a critical point towards the end of the present decade.

SC went on to say,

The big question is still whether these financial profits were somehow translated into real productivity gains and, therefore, whether they were sustainable. As long as the incomes from financial assets are reinvested and kept in the financial sector independently of the "real" economy, their prices can increase independently of any economic reality. But, in essence, financial assets represent the right to a share of some future surplus value, profit or revenue. Provided this right is not exercised, asset prices can continue their bubbly trajectory. However, as soon as it is exercised, it becomes subject to the law of value. At that moment, prices are judged against an expected fundamental value and people suddenly remember that it is impossible to distribute more real wealth than is produced.

SC provided data that showed that despite the advent of the electronics/computer/Internet age, business productivity, which was increasing at an average annualized growth rate of 1.9 % per year from 1947 to 1969, slowed down to 1.6 % per year from 1970 to 2012. On a cumulative basis, this generated a 35 % reduction in 2012 compared to where productivity would have been, had it continued upward at 1.9 %. They concluded: "The discrepancy

between the exuberant expansion in the financial sector and the more moderate growth of the real economy is the crux of the problem we are currently confronted with.” They described this as “the illusion of the perpetual money machine.”<sup>16</sup>

A website run by Charles Hugh Smith discussed the so-called wealth effect.<sup>17</sup> According to him,

Central banks’ attempts to boost borrowing, consumption and wages by inflating asset bubbles leads to a poverty effect, not a wealth effect. Central bankers have been counting on the “wealth effect” to lift their economies out of the post-2009 global meltdown slump. The wealth effect concept is simple: flooding the economy with credit and zero-interest money boosts the value of assets such as housing, stocks and bonds. Those owning the assets feel wealthier, and thus more inclined to borrow and spend more money. This new spending creates more demand leading to employers to hire more employees. Unfortunately for the bottom 90% who don’t own enough stocks to feel any wealth effect, the central bankers got it wrong: wages don’t rise as a result of the wealth effect, they rise from an increased production of goods and services. Despite unprecedented money printing, zero interest rates and vast credit expansion, real wages have declined.... The unintended consequence of inflating asset bubbles to drive an illusory wealth effect is that speculative bubbles inevitably pop, creating a pervasive poverty effect. The asset bubble creates phantom collateral that households borrow against. When the bubble pops, they’re left with the debt and debt payments (“the poverty effect”) while the ephemeral “wealth” has vanished.

Smith supported this assertion with Fig. 1.8.

Despite the huge asset bubbles (*dot.com* and housing) during this time period, wages continued to fall when corrected for inflation by the CPI. However, even though wages declined, those in the upper realms of income with substantial investments in real estate and stocks still probably come out ahead. Case, Quigley and Shiller (2011<sup>18</sup>; CQS) discussed wealth effects with particular relevance to a comparison of the effects of a rise in housing prices versus stock prices on personal consumption. The opening sentence of their report is “It has been widely observed that changes in the values of financial assets are associated with changes in national consumption.” They went on to say that if one plots consumption versus stock market level (on a log scale), the slope of the line is the “wealth effect.” They went on to say that “there is every

<sup>16</sup> By permission of Didier Sornette, Sornette and Cauwels 2014.

<sup>17</sup> <http://www.oftwominds.com/blogmar13/wage-effect3-13.html>.

<sup>18</sup> By permission from Case et al. (2011).

reason to expect that changes in housing wealth exert effects upon household behavior that are quite analogous to those found for financial wealth.” And they pointed out that whereas in the past, extracting cash from a perceived growth in house prices was not very simple, in the era of low interest rates and new mortgage options, “it is as simple to extract cash from housing equity as it was to sell shares or to borrow on margin.”

CQS said,

...the public’s widespread impression is that increased home prices make them very much better off. Part of the reason may be psychological, due to the salience of the home price increases and the myopic failure to consider that there can’t be such an advantage if most other homeowners have experienced the same price increases. Part of the reason they feel that way may have to do with a popular view that the collateral value of a home is of singular importance.

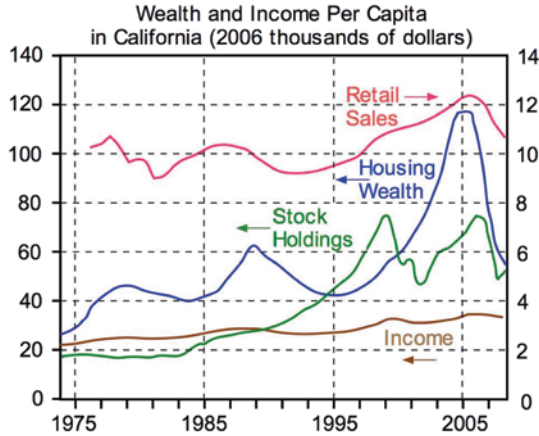
They also said,

Given the magnitude of [the increase in valuation of US real estate that tripled from 1995 to 2005] and the general failure at the time to recognize them as part of a credit bubble, it is hard to imagine that the build-up in home equity when and where it occurred did not encourage aggregate spending there and then. Nor that the bust in home prices did not discourage spending.

In the *Conclusion* section of their paper, they said: “The importance of housing market wealth and financial wealth in affecting consumption is an empirical matter.” However, as they pointed out, there is not much elasticity in consumption. A 30 % change in housing wealth is expected to produce only a 2.4 % change in consumption. Since consumption is about US\$ 10 trillion, a decline in consumption of 2.4 % corresponds to about US\$ 240 billion annually, which is still a significant impact on the economy. Figure 1.9 shows that in California, for example, while housing and stocks underwent grinding ups and downs, the prevailing trend has been upward, whereas income has been relatively static. From 1995 to 2005, housing wealth tripled and stock wealth increased 60 %, whereas retail sales increased about 30 %. Although specific data are difficult to find, it seems clear that the stock and housing curves rose significantly while the income remained flat.

Nevertheless, we have seen several asset bubbles apparently contribute to American wealth during the period 1980–2013 without a proportionate rise in consumer prices. For example, the DJIA rose from 1000 to 14,000 from 1985 to 2007, a factor of more than 13, while the Consumer price index (CPI) only doubled over that period. The DJIA rose from less than 8000 to 16,000 from 2008 to 2013, a factor of 2, while the CPI only increased by





**Fig. 1.9** Wealth and income per capita in California (2006 dollars). (By permission from Case et al. 2011)

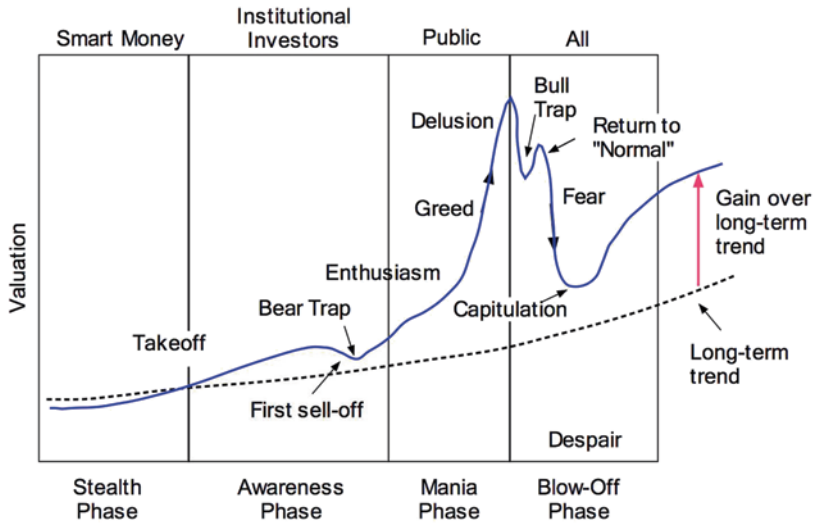
10% over that period. Similarly, the Case–Shiller Real Estate Index (CSREI) for 20 major metropolitan areas rose from 100 in 2000 to as high as 206 in 2006, and despite backing off in subsequent years still remains at more than 150 in 2013. For some areas, such as Los Angeles, the peak in CSREI in 2006 was 274, indicating that on average, a house in Southern California appreciated by 174% from 2000 to 2007. Despite backing off in subsequent years, it still remains at around 215 in 2014. We have seen no such rise in overall consumer prices. There is evidence that a similar boom in house prices is evolving in 2014.

Therefore, a case can be made that contrary to economic theory, and indeed contrary to common sense, wealth can be created by increases in paper asset values. If we bid up the prices of paper assets to create an asset bubble, it appears that consumer prices will not necessarily follow, or at least will lag far behind the rise in asset values, resulting in an effective increase in wealth for many people—at least for a significant period. Thus, Fig. 1.3 might have to be modified as shown in Fig. 1.10. Here, the phases of the boom–bubble–bust cycle are the same as in Fig. 1.3 except that the capitulation stage does not drop as much, and the recovery phase ends up considerably higher than the initial long-term trend. The bubble has created wealth above and beyond the long-term trend.

In fact, Alan Greenspan was quoted as saying (in 1999) that a permanent increase in spending would result from increased housing wealth.<sup>19</sup>

Is it possible that the US government can flood its banking system with money, based to a considerable extent on debt, thereby driving up repeated

<sup>19</sup> Case et al. (2011).



**Fig. 1.10** Modification of Fig. 1.3 to show a net long-term gain from the boom–bubble–bust sequence

bubbles in real estate and stocks, and thus create prosperity despite the fact that real wages are relatively stagnant? As long as there are governments, institutions, and individuals in the world willing to lend money to this Ponzi scheme, it might seem to work.

Sornette and Cauwels<sup>20</sup> discussed the creation of wealth in the context of the “perpetual money machine”—an analog for the fictitious perpetual motion machine in physics. They said,

What about wealth? Can it be created out of thin air? Surely, a central bank can print crisp banknotes and, by means of the modern electronic equivalent, easily add another zero to its balance sheet. But what is the deeper meaning of this money creation? Does it create real value? Common sense, and Austrian economists in particular, would argue that money creation that outpaces real demand is a recipe for inflation. In this paper, we show that the question is much more subtle and interesting, especially for an understanding of the extraordinary developments since 2007. While it is true that, like energy, wealth cannot be created out of thin air, there is a fundamental difference: whereas some marginal scientists’ belief in a perpetual motion machine had essentially no impact, its financial equivalent has been the hidden cause behind the current economic impasse.

<sup>20</sup> The Illusion of the Perpetual Money Machine by Didier Sornette and Peter Cauwels, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2191509](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2191509).

They provided data indicating that despite the irrational exuberance of markets since the 1980s, the aftermath of burst bubbles always returned to a long-term trend of growth at around 2%.

### 1.6.2 Bubbles and Inflation

As we pointed out in the previous section, a fundamental principle of Economics 101 is that supposedly, you cannot create wealth merely by bidding up paper asset values. Wealth is supposedly created only by increased productivity and efficiency. According to this viewpoint, if the money in circulation increases but the products remain the same, you end up with more dollars chasing the same amount of goods and thus you end up with inflation. Hence, you have more dollars but no real increase in purchasing power.

The baby boomer generation has set about to disprove this venerable law of economics. The baby boomers demand wealth, quick wealth, and wealth unearned. And the amazing thing is that to some considerable extent, they have succeeded—at least so far.

JKG<sup>21</sup> discussed inflation at some length. He began by noting that historically, inflation has mainly been fueled by war, postwar strictures, and other special situations. In the late twentieth century, however, inflation has been significant during periods of prosperity. Inflation peaked in the mid-1970s. In the public arena, inflation is widely deplored and condemned by politicians of both parties, particularly conservatives. As JKG emphasized,

Businessmen, bankers, insurance executives and nearly every type of professional public spokesman at one time or another have warned of the dangers of continued inflation, . . . this conviction leads to remarkably little effort and, indeed, to remarkably few suggestions for specific action. Where inflation is concerned, nearly everyone finds it convenient to confine himself to conversation.

The problem is that the remedies that are available are typically viewed by the Federal Reserve as being worse than the disease.

JKG provided several reasons why inflation might not be opposed by any serious effort:

1. Some people profit from inflation.
2. Some hope that inflation will eventually correct itself.
3. With the memory of the 1930s lurking in the background, most of us believe that “the most grievous threat to the American economy is a depres-

---

<sup>21</sup> Galbraith (1958–1998).

sion.” That being the case, politicians are loath to take actions that could conceivably lead to an economic depression.

4. The belief is currently widespread that monetary policy by the Federal Reserve can control inflation.

Inflation can conceivably contribute to the promotion of bubbles because in times of high inflation, investors are likely to avoid holding cash, and invest in ventures that they perceive might provide protection from inflation.

However, although we have a sense of what inflation is (like wealth), it is difficult to define it exactly. Inflation is described by a website: “inflation-what-heck-is-it” (WTHII).<sup>22</sup>

WTHII provides eight distinctly different definitions of inflation and suggests that many more may yet found. These are:

- Decline in purchasing power of the currency held
- Rising prices in general (essentially the same as #1 although some might disagree)
- Rising consumer prices (CPI)
- Rising producer prices (PPI)
- Rising prices due to expansion of money supply
- Rising prices due to expansion of money supply and credit
- Expansion of money supply
- Expansion of money supply and credit

Unfortunately, there are several different measures of money supply, and there are consumer prices, producer prices, or simply prices in general.

*Dictionary.com* defined inflation as:

A persistent increase in the level of consumer prices or a persistent decline in the purchasing power of money, caused by an increase in available currency and credit beyond the proportion of available goods and services.

Other definitions of inflation were provided by a website that specializes in inflation.<sup>23</sup> These range from an “increase in the amount of currency in circulation” to “a persistent increase in the level of consumer prices or a persistent decline in the purchasing power of money.” Typically, some of these definitions add a phrase beginning with “because of.” As WTHII pointed out, the

<sup>22</sup> By permission of Mike Shedlock, Inflation-what-heck-is-it? <http://globleconomicanalysis.blogspot.com/2006/02/inflation-what-heck-is-it.html>.

<sup>23</sup> <http://inflationdata.com>.

problem with definitions that have a “because of” clause is that it is difficult to know exactly *why* prices are rising or falling.

WTHII brought up several other important aspects. One of these is the issue of whether increases in asset prices should be incorporated into indices of inflation. WTHII claimed that this would be too difficult and complicated but that does not necessarily appear to be so. Introducing stock and house prices appears to be much easier than preparing a CPI as presently defined based on a shopping cart of thousands of small items. However, the real issue here is that the appropriate rate of inflation depends markedly on one’s income and whether one invests in buying a house and securities. For poor people who own no stocks, the increase in stock market indices is irrelevant. However, the price of housing is important to the poor since it affects their ability to someday own their own home. As house prices escalate, they diverge further away from the realm where the poor could consider buying one. Hence, that may be the most important element of inflation for the poor—ultimately more important than the price of milk. Many people in the middle class typically already own their own homes, and to that extent, depending on location, may be protected from future inflation of home prices. Indeed, they may ultimately profit from inflation of home prices, although as home prices rise, other expenses (repairs, insurance, taxes, etc.) increase. Some people, typically the elderly, thereby become house-rich and cash-poor. Nevertheless, younger people who do not yet own their own home, or apartment dwellers contemplating home ownership, might be shut out of the home market by rising prices. The middle class typically depends heavily on 401(k), 403(b), and other retirement investment plans, and those in the upper range of the middle class might have (or contemplate) sizable personal investments in stocks through these retirement plans during their working years. Since the majority of people appear to believe that in the long run, stocks provide the best investment for retirement plans, many of them are committed to continuous purchase of stocks during their working years. Increasing stock prices are a benefit for older employees contemplating retirement, but are problematic for younger employees who must pay higher prices for stocks for many years prior to retirement. Since investments in stocks for retirement via 401(k) plans might typically constitute a major expenditure of middle-class families, a rising stock market might constitute a significant form of inflation for them, as well as risk that such a market may be vulnerable to a future downward correction.

WTHII also introduced another issue. There are items that have become necessities (either culturally or legally) that might not have existed in the past or probably were considered to be luxuries. In either case, the cost of acquiring these goods and services adds to the cost of living as a new cost, rather than

as an increase in a past cost. The example is given of double pane-insulated argon gas-filled windows that did not even exist 30 years ago. These are now required by code in most areas. There are also costs for computers, tablets, cell phones, cable hookups, Internet service providers, and GPS navigation systems that did not exist in prior years. It is not clear how these affect the CPI but they certainly add to the cost of living.

WTHII pointed out that in the 1990s, “the money supply rose dramatically by any commonly used measure” but Greenspan and the economists “were not alarmed because the price of oil and gold and copper and computers were falling.” In the spirit of classical economics, WTHII then said: “Can a definition of inflation that ignores such problems possibly be right?” Apparently, “such problems” refer to the increase in the money supply. WTHII then provided an explanation for how Greenspan got away with the increase in money supply without paying a price in runaway inflation: “Improvements led by an Internet revolution, along with global wage arbitrage and outsourcing to China and India, lowered costs on manufactured goods and kept the lid on wage increases in the manufacturing sector.” WTHII went on to conclude:

Those factors all helped mask rampant inflation in money supply. The Greenspan Fed further compounded the problem by injecting massive amounts of money to fight a mythical Y2K dragon that simply did not exist. Those monetary injections helped fuel a massive bubble in the stock market in 2000.

But if pumping money into the system produced a booming stock market with no price escalation, should we care if the money supply increased sharply? It appears that the 1990s represented a defeat for Economics 101: Under the right circumstances, it seems possible to expand the money supply, produce increases in asset values via bubbles, and not endure excessive consumer price inflation. Can this state of nirvana persist ad infinitum? As we discussed in a previous section, Sornette and Woodward<sup>24</sup> discussed “the illusion of a *perpetual money machine*.” They argued that such a state of affairs can only be temporary and will eventually correct itself. Rodrigue’s chart (Fig. 1.3) suggests that after a bubble pops, the system will return to its long-term trend. However, Fig. 1.10 indicates that perhaps a persistent gain might result from the aftermath of a popped bubble. The answer is uncertain. In the era 1997–2007, the money supply was again greatly expanded, also leading to booming housing and stock markets, but these markets crashed, producing the worst recession since the 1930s. The limits of the money supply expansion game

---

<sup>24</sup> Sornette and Woodward (2009). [www.er.ethz.ch/presentations/FinancialCrisis\\_CCSS\\_Zurich\\_9June09.pdf](http://www.er.ethz.ch/presentations/FinancialCrisis_CCSS_Zurich_9June09.pdf).

seemed to have been reached in July 2008. However, after the collapse of real estate and stock markets, the Federal Reserve, fueled by government borrowing, opened the spigots of the money supply further than ever before, and this produced a remarkable recovery in the stock markets from 2009 to 2014 and in the real estate markets in 2012 through 2014, with no major increases in the consumer price index.

The most widely used index of inflation is the so-called CPI-U Index (consumer price index for urban areas). The actual calculation of the index is very complex and beyond the scope of this book. Morris Rosenthal provided a brief summary.<sup>25</sup> He estimated that the CPI includes the following elements:

- Food and beverages 15 %
- Housing rentals (includes utilities) 43 %
- Apparel 4 %
- Transportation 17 %
- Medical care 6 %
- Recreation 6 %
- Education and communication 6 %
- Other goods and services 3 %

Rosenthal emphasized that the CPI-U attempts to measure monthly out-of-pocket expenses, and does not seem to take into account run-out costs. The reason that medical care is listed as 6 % of total expenses is that many people have medical plans through their place of employment, and they only pay for a fraction of the total cost of the plan, plus some co-payments and drugs. However, the actual cost of medical care (including the cost borne by employers and Medicare) is probably more like 20 % of the total and is escalating rapidly. As employers take on this rising cost, wage increases are inhibited. A recent New York Times article<sup>26</sup> pointed out:

“Many of the 158 million people covered by employer health insurance are struggling to meet medical expenses that are much higher than they used to be—often because of some combination of higher premiums, less extensive coverage, and bigger out-of-pocket deductibles and co-payments.”

A case was cited where out-of-pocket medical costs for utility workers in Arizona rose from US\$ 2000/year to US\$ 5600/year in 5 years.

Hence, the CPI-U would have you believe that medical costs are a small part of the cost of living, but that is not true. Rosenthal also points out that

<sup>25</sup> By permission of Morris Rosenthal, <http://www.fonerbooks.com/cpi-u.htm>.

<sup>26</sup> Abelson and Freudenheim (2008).

education costs are misleading. If you have children in public school, these costs may be small for many years, but if you send them to a private college, expect a bill for about US\$ 200,000 for 4 years including room and board.

As the government explanation of the CPI explains, “Purchases of houses...are viewed as investment expenditures and are therefore excluded [from the CPI]. Thus, during the period 2000–2007 when house prices more than doubled across the nation and nearly tripled in some localities, there was little impact on the CPI. Similarly, when stocks more than doubled from 2009 to 2013, the CPI increased by an average of about 2.5% per year.”

Does the conventional Consumer Price Index (CPI-U) have much utility? WTHII answered this question very accurately:

“The basket of goods and services as well as subjective measures of quality improvements can indeed be used by the government to underpay holders of inflation protected securities, as well as understate cost of living adjustments to social security recipients.”

## 1.7 Speculations, Bootstraps, and Swindles

Manias and bubbles typically involve borrowing large amounts of money. This might involve buying stocks on margin, borrowing from banks to finance investment, selling assets on an installment payment plan, or companies obtaining financing from speculators based on promises of future repayment. In the US real estate bubble of 1997–2007, as real estate values rose, many people refinanced their homes several times with larger mortgages, thus using their homes as a sort of ATM where you only take money out but never make deposits. For example, there was an article in the *Los Angeles Times* about a couple in Corona, CA, who refinanced about six times from 2000 to 2007, tripling the size of their mortgage, until finally, they could not make the payments and defaulted. In this case, the banks provided funds against extrapolated future increases in real estate value as the bubble expanded. Section 2.11 covers the subprime real estate bubble in detail.

As K&A pointed out, the prospects for paying back these marginal or speculative loans might vary over a wide spectrum. Minsky categorized manias and bubbles according to the probability of payback on loans used to support the enterprise. In our discussion, Minsky’s terminology will be changed, but his ideas are retained. Minsky distinguished between three levels of soundness of an enterprise. We will denote these as *speculations*, *bootstraps*, and *swindles*.

In a *speculation*, there is a reasonable prospect that if all goes well, the operating income from the enterprise will be sufficient to pay off both the interest



and amortization of its indebtedness. Barring unforeseen problems, the enterprise will be able to pay off its debt. If not, it will have to borrow to cover the amounts due on maturing loans. However, in typical cases, there are little or no reserves, so speculations are susceptible to future problems that might (and often do) arise.

In a *bootstrap* operation, it is likely that anticipated operating income will be sufficient to pay the interest on its indebtedness. However, even making favorable assumptions, it is unlikely that the operating income will cover the amounts due on maturing loans. The enterprise must hope that it can either sell inflated stock or take on new loans to pay off the old ones as they become due. In the case of the housing bubble of 2002–2007, many people bought houses they could not afford with loans that they could not maintain past the initial favorable terms, with the expectation that if housing prices increased at 10–20% per year (as they did for several years), they could turn the house over in a year or two and make a huge percentage profit before payments rose to unaffordable levels. When housing prices stopped rising in 2007, they were unable to make the mortgage payments. If the enterprise cannot pay off loans with sale of inflated stock or by selling appreciated assets, it is doomed to continually “borrow from Peter to pay Paul” in an endless chain of borrowing to remain afloat—until they run out of lenders willing to provide them with funds.

In a *swindle*, the anticipated operating income is not likely to pay the interest or the principal on its indebtedness on the scheduled due dates; to obtain cash, the firm must continually increase its indebtedness until lenders will no longer support the venture. A *swindle* is almost certain to end in collapse. The epitome of a swindle is the Ponzi scheme in which one promises an inordinate rate of return to lure greedy (and gullible) investors to invest their funds in the venture. Instead of paying them interest out of earnings (of which there are little or none), the Ponzi scheme uses some of the capital it raised to pay fictitious interest to investors for a short period to demonstrate the supposed reality of the scheme. This lures additional new investors to contribute their funds. If this were continued, pretty soon, all the invested funds would be used up paying back fictitious interest to investors. However, long before that, the operators of the scheme disappear with the remaining funds.

Minsky's hypothesis was that when the economy slows, some of the firms that had been involved in *speculation* finance are forced by circumstances into the *bootstrap* category and that some of the firms that had been involved in *bootstrap* finance group now find they are forced into the *swindle* finance group.

## 1.8 The Rationality of Investors, Bankers, and Experts?

### 1.8.1 The Rationality of Investors

K&A devoted a chapter to the rationality of investors and markets. Classical economics tends to attribute rationality to investors, and would therefore conclude that prices reflect information—or at least rational expectations based on currently available information. If prices rise, that would be a reflection of a rational analysis of supply/demand and future prospects that led to optimistic conclusions. But as K&A pointed out, there are many examples of irrational markets, and the nomenclature used to describe irrational markets is very diverse:

...manias, insane land speculation, blind passion, financial orgies, frenzies, feverish speculation, epidemic desire to get rich quick, wishful thinking, intoxicated investors, turning a blind eye, ...fools' paradise, overconfidence, over speculation, a craze....

How does one explain irrational markets based on rational individual investors? K&A listed several possible explanations:

1. ***Mob psychology***: In this model, virtually all of the participants in the market change their views at the same time and move as a herd.
2. ***Individual crescendo***: In this model, different individuals change their market views at different stages as part of a continuing process; “most start rationally and then more of them lose contact with reality, gradually at first and then more quickly.” This is well described in Ionescu’s farce: *Rhinoceros*.
3. ***Group crescendo***: In this model, rationality differs among different groups of traders, investors, and speculators, and these groups gradually succumb to hysteria as asset prices increase and the temptation to make quick profits becomes irresistible.
4. ***Fallacy of composition***: This is a philosophical view that a conclusion cannot necessarily be drawn about the whole from the features of its constituents. “From time to time the behavior of the group of individuals differs from the sum of the behaviors of each of the individuals in the group.” For example, an athletic team composed of outstanding players might not play well if the individuals do not integrate well.
5. ***Erroneous models or information***: What appears to be irrational behavior of the group might be the result of rational behavior based on the wrong model or lack of proper information. However, that would seem to come

under the category of errors in models or analysis, which though regrettable, is hardly irrational. Nevertheless, investors, working with bad models and bad information, might appear to be irrational to others. K&A suggested that basically rational people will act irrationally at times. “Mob psychology or hysteria is well established as an occasional deviation from rational behavior.” Perhaps the Schiller quote (Sect. 1.1) sums it up best:

Anyone taken as an individual is tolerably sensible and reasonable but as a member of a crowd, he at once becomes a blockhead.

K&A also discussed stages of speculation. What seems to happen is that in the first phase, one invests in a venture because there is a prospect of a profit from the activities in the venture. Thus, when farm products sell for a high price, the value of farmland might rise. Initially, investors might invest in farmland with the reasonable and rational expectation that the products produced on that farmland will generate significant profits. In the second stage, as the price of farmland increases, speculators move in and buy farmland, not for the products grown on the farms, but with the intent of turning over their holdings to another speculator who hopefully will arrive on the scene later than them, having noted the expanding bubble in farmland. In the speculative stage, the original reason for investing in farmland is forgotten, and one invests only to turn over the investment to “a bigger fool.” As the frenzy builds, speculators borrow to increase their leverage, and thus expand the bubble until eventually it pops (see Figs. 1.3 and 1.10).

Investors often rely on financial advice from experts. The role of investment advice was discussed by JKG in a small book entitled *Innocent Fraud*. *Innocent fraud* is lawful fraud committed with the willing participation of the defrauded in ways that are acceptable as cultural norms. *Innocent fraud* is not commonly recognized to be fraud. A major example is providing financial advice by the world of finance—banking, corporate finance, the securities markets, the mutual funds, and financial guidance counselors. As JKG said, there is the inescapable fact that the future economic performance of the economy, the passage from good times to recession or depression and back, cannot be foretold. There are many predictions, and those that prove to be correct are the result more of luck than foresight. Yet as JKG pointed out, in the economic and financial worlds, there is an army of analysts who predict the unpredictable future, usually with considerable variance from reality. And many of these have rewarding careers because “what is predicted is what others wish to hear and what they wish to profit or have some return from, hope or need covers reality.” JKG went on to say,

Those employed or self-employed who tell of the future financial performance of an industry or firm, given the unpredictable but controlling influence of the larger economy, do not know *and normally do not know that they do not know*.

Nevertheless, as JKG said, “Financial advice and guidance, however worthless, can be for a time financially rewarding.” And when the predictions of future glory turn out not to be true, the errors and misconceptions of experts are soon forgotten.

## 1.8.2 The Rationality of Bankers and Experts?

### 1.8.2.1 Loans to Foreign Countries

If you query “Google” with the words “stupidity of bankers” you get several million web pages returned.

A quote from an Internet web page is:

Intelligent banking is a contradiction in terms. Like military intelligence.

JKG<sup>27</sup> suggested that the wisdom attributed to financiers and bankers has made them self-satisfied and inhibits their self-scrutiny (which JKG suggested is a necessary prerequisite for “good sense”). As an example, he pointed out the stupidity of New York banks and bankers that made bad loans to Latin America, Africa, and Poland in the 1970s.

In 1984, Delamaide wrote a book<sup>28</sup> on the threat to financial stability posed by the massive lending to third world countries of petrodollars that were invested in the West by the oil-producing countries of Organization of the Petroleum Exporting Countries (OPEC). Delamaide pointed out that Latin American countries began borrowing soon after they gained independence in the 1820s but by 1940 nearly 4/5 of the Latin American bonds were in default. Yet that did not inhibit banks from continuing to originate new loans with developing nations.

In Ann Crittenden’s review,<sup>29</sup> she described Delamaide’s view of international bankers as “well-tailored hucksters who flew around the world selling money without any thought of the consequences.” Citibank’s chairman was described by Delamaide as “a glorified vacuum cleaner salesman, a small-town

<sup>27</sup> Galbraith (1993).

<sup>28</sup> Delamaide (1984).

<sup>29</sup> <http://query.nytimes.com/gst/fullpage.html?res=9407EED91239F93BA35754C0A962948260&n=Top%2FFeatures%2FBooks%2FBook%20Reviews>.

smooth-talker whose only goal in life was to make a buck.... The herd mentality that led the world banking community to follow Citibank's lead into the wilds of Africa and Latin America is presented in devastating detail, often by the bankers themselves." The banks seemed to have no idea where their money went or what it was used for. Much of it ended up as Swiss bank accounts for presidents, and in one case, the American loans were used to purchase US\$ 250 million worth of military planes from Russia.

Delamaide suggested that the cause was the banks' foreign lending procedures failed to observe time-honored banking practices regarding amounts of credit and collateral per borrower. Yet as he pointed out, "regulators virtually everywhere accepted the banks' assurances that business should go on as usual...." All of this was aided and abetted by Treasury Secretary Donald Regan who was also a major figure in the Savings and Loan scandals (see Sect. 2.5).

Delamaide provided the following anecdote relating to the fact that as often as we go through these banking crises, we never fix the system:

It is reminiscent of the rope basket going up to the Greek monastery. The basket was the only access to the monastery, perched on top of a mountain crag. A visitor who was about to be hauled up the sheer cliff wall noticed that the rope attached to the basket was frayed in several places. Concerned, he asked one of the accompanying monks how often they replaced the rope. "Every time it breaks," was the laconic response.

When one examines the savings and loan crisis of the 1980s or the subprime mortgage mess of the 2000s, the first questions that jump into mind are: Didn't bankers know this would happen? Why did they pursue obviously destructive paths? Were they dumb or crafty? Delamaide commented on the seemingly endless process where banks made bad loans in 1982 and 1983. No one knew the implications and domino effects if a bank failed of the stature of say, Chase Manhattan or Citibank. Thirty years after Delamaide's book, we can see that this sequence in one form or another has repeated several times, and furthermore we can add one more step: The government will bail out the failed banks if they are big enough.

Delamaide mentioned that Kindleberger listed bank-lending manias to foreign countries in the years: 1808–1810, 1823–1825, 1856–1861, 1885–1890, 1910–1913, 1924–1928. He said: "productive loans in the developing countries are not very productive and do not stay long out of default...." As a result, the worthless bond certificates from earlier years are collected and traded like old postage stamps. As bad as banking policies were to developing countries, Delamaide claimed they were even worse for loans to the communist bloc.

Delamaide discussed at length the situation when the OPEC countries quadrupled oil prices in 1973–1974, and thereby altered the world’s capital flows. This created an international imbalance in money flows with the OPEC countries collecting a lot more money than they could spend, and the other countries were running a deficit. The sums involved were enormous. The developing nations had to borrow, but the OPEC countries did not want to lend money directly to them. Instead, they deposited their money in the big international banks. These banks became flooded with money, but their demand for loans in industrialized countries was low because higher oil prices had generated a recession. Delamaide pointed out that when OPEC tripled oil prices in 1972–1973, the OPEC nations acquired huge amounts of cash, which they deposited in the major banks of the world. The banks did not have very many customers that could borrow such large sums other than developing nations. They could not just sit on the money. They had to lend it out.

As a result, the banks started lending the money to the oil-importing developing countries that were running large balance-of-payments deficits. The OPEC countries accumulated deposits in the international banks, and the importing countries accumulated debts to the international banks. Then, as Delamaide put it: “the developing nations defaulted—as usual, precipitating the financial crisis of 1982–1983.”

Delamaide described the various attempts to deal with wholesale defaults of huge amounts of debt by the developing countries during the financial crisis of 1982–1983. Delamaide opined that these were generally subterfuges of one kind or another. He argued that the only real solution was to pay the debts off. The temporary expedients of delaying the inevitable were based on the false premise that with time, the debtors could accumulate enough cash to pay off the loans. He used phrases like “shadow boxing,” “shilly-shally,” and “shell game” to describe efforts by bankers to cover up their losses so they would not have to declare bankruptcy.

### 1.8.2.2 The Housing Bubble of 1997–2007

Paul Krugman in the *New York Times*<sup>30</sup> asked what the Wall Street titans were smoking when they lost staggering sums, and answered that they were high on the usual drug—greed:

And they were encouraged to make socially destructive decisions by a system of executive compensation that should have been reformed after the Enron and WorldCom scandals, but wasn't.

---

<sup>30</sup> Krugman (2007).

But even as the danger signs multiplied, Wall Street piled into bonds backed by dubious home mortgages. Most of the bad investments now shaking the financial world seem to have been made in the final frenzy of the housing bubble, or even after the bubble began to deflate.

Now the bill is coming due, and almost everyone—that is, almost everyone except the people responsible—have to pay.

The losses suffered by shareholders in Merrill, Citigroup, Bear Stearns and so on are the least of it. Far more important in human terms are the hundreds of thousands if not millions of American families lured into mortgage deals they didn't understand, who now face sharp increases in their payments—and, in many cases, the loss of their houses—as their interest rates reset.

However, it seems doubtful that many of those who faced foreclosure did not understand the leverage they were taking on. But they, like the banks, had bubble fever and believed that 10–20% annual increases in property values would more than compensate for their debt overload. (Remember, that if you put 10% down on a house and it goes up 10% in value, you make 100% on your investment. If you put 0% down, your percent gain is infinite). When Krugman handed out accusations of greed, he should include the millions of people who bought when they could not afford it, or upgraded when they shouldn't have, or refinanced and took cash out of their house, in the expectation that the inflating bubble would bail them out. As we pointed out previously, during the period 1997–2007 it was common for many people to treat their residences as ATM machines where they only withdrew money but never made deposits.

Krugman went on to discuss collateral damage to the economy—which was substantial. The rise in real estate values from 1997 to 2007 created a feeling of wealth and well-being for millions of people, which encouraged them to borrow and spend, which in turn, drove the economy to prosperity that otherwise might have stagnated. The prosperity from 1997 to 2007 was certainly not due to an increase in wages.

Krugman then asked: “How did things go so wrong?” He suggested that the answers lie in (1) lack of leadership and regulation by government and the Fed, and (2) the fact that corporate executives reap huge fortunes regardless of their poor performance.

While Delamaide claimed that the bankers were foolish and shortsighted, some argue that they were fully cognizant of the risks. The nature of banking is that one can speculate with other peoples' money, make huge short-term income and bonuses, and move on when the bubble pops. And the “other people” do not lose if they have Federal Deposit Insurance Corporation (FDIC)-protected accounts.



One must distinguish between banks and bankers. Banks seem to often lose huge sums of money but bankers seem to get paid well regardless of how much the banks lose.

As we discuss in Sects. 2.11.3.4 and 2.11.3.5 (Mortgage-Backed Securities), everyone made money while real estate values were going up from 2001 to early 2007. Individuals either reduced their payments through lower mortgage interest rates or were able to borrow more and have more disposable income. Speculators were able to take ownership of expensive houses for merely the cost of the loan fee. Banks and mortgage companies earned loan fees from a very high volume of new mortgages. They promptly sold those mortgages to investment bankers, who packaged them into structured investment vehicles, which they sold to institutions and the public. However, the investment banks did not take into account:

1. As the housing bubble expanded to a climax in 2004–2006, more and more speculators bought houses with the intent to make a quick profit before rising adjustable interest rates on their mortgage wiped them out.
2. Banks and mortgage companies, greedy for loan fees, and believing they could simply sell off new mortgages to investment banks, increasingly granted mortgages to speculators who could not possibly qualify under conservative standards.
3. Financial rating agencies, collecting huge profits from rating the high flux of new bonds based on mortgage collateral, were motivated to be optimistic in their appraisals, allowing bonds to be marketed to the unsuspecting.
4. Investment banks could turn over newly issued bonds based on mortgage collateral almost as fast as they were produced.
5. Where banks and mortgage companies went wrong was in holding on to too many of their subprime mortgages, instead of getting rid of them to investment banks. Where investment banks went wrong was in not getting rid of the mortgage-backed bonds quickly enough, and holding some for their own accounts. Where the public went wrong was in believing the ratings on mortgage-backed bonds.

Paul Krugman wrote a devastating criticism of his fellow economists<sup>31</sup> in the aftermath of the collapse of the housing bubble. In this lengthy report, he began by pointing out that prior to the collapse of the housing bubble, economists were “congratulating themselves over the success of their field” and claimed “the central problem of depression-prevention has been solved.”

---

<sup>31</sup> Krugman (2009).



In late 2009, Krugman said: “Few economists saw our current crisis coming, but this predictive failure was the least of the field’s problems. More important was the profession’s blindness to the very possibility of catastrophic failures in a market economy. During the golden years, financial economists came to believe that markets were inherently stable—indeed, that stocks and other assets were always priced just right. There was nothing in the prevailing models suggesting the possibility of the kind of collapse that happened last year.” Some believed that “free-market economies never go astray” and others “believed that economies might stray now and then but that any major deviations from the path of prosperity could and would be corrected by the all-powerful Fed. Neither side was prepared to cope with an economy that went off the rails despite the Fed’s best efforts.” He also said: “Monetarists asserted...that a very limited, circumscribed form of government intervention—namely, instructing central banks to keep the nation’s money supply, the sum of cash in circulation and bank deposits, growing on a steady path—is all that’s required to prevent depressions.” He went on to say, “By 1970 or so, however, the study of financial markets seemed to have been taken over by Voltaire’s Dr. Pangloss, who insisted that we live in the best of all possible worlds. Discussion of investor irrationality, of bubbles, of destructive speculation had virtually disappeared from academic discourse. The field was dominated by the “efficient-market hypothesis”...which claims that financial markets price assets precisely at their intrinsic worth given all publicly available information. (The price of a company’s stock, for example, always accurately reflects the company’s value given the information available on the company’s earnings, its business prospects and so on.)”

Krugman urged economists to realize that

...many real-world investors bear little resemblance to the cool calculators of efficient-market theory: they’re all too subject to herd behavior, to bouts of irrational exuberance and unwarranted panic. Second, even those who try to base their decisions on cool calculation often find that they can’t, that problems of trust, credibility and limited collateral force them to run with the herd.

Krugman quoted the old line that “the market can stay irrational longer than you can stay solvent.” As they pointed out, arbitrageurs—the people who are supposed to buy low and sell high—need capital to do their jobs. And a severe plunge in asset prices, even if it makes no sense in terms of fundamentals, tends to deplete that capital. As a result, “the smart money is forced out of the market, and prices may go into a downward spiral.”

Krugman supports the Keynesian approach of “active government intervention—printing more money and, if necessary, spending heavily on public works—to fight unemployment during slumps.”

Krugman pointed out,

By October of [2008]...Greenspan was admitting that he was in a state of “shocked disbelief,” because “the whole intellectual edifice” had “collapsed.” Since this collapse of the intellectual edifice was also a collapse of real-world markets, the result was a severe recession—the worst, by many measures, since the Great Depression. What should policy makers do? Unfortunately, macroeconomics, which should have been providing clear guidance about how to address the slumping economy, was in its own state of disarray.

Krugman said,

In 2004, Alan Greenspan dismissed talk of a housing bubble: “a national severe price distortion,” he declared, was “most unlikely.” Home-price increases, Ben Bernanke said in 2005, “largely reflect strong economic fundamentals.”

How did they miss the bubble?... It may be that Greenspan and Bernanke also wanted to celebrate the Fed’s success in pulling the economy out of the 2001 recession; conceding that much of that success rested on the creation of a monstrous bubble would have placed a damper on the festivities.

But there was something else going on: a general belief that bubbles just don’t happen. What’s striking, when you reread Greenspan’s assurances, is that they weren’t based on evidence—they were based on the *a priori* assertion that there simply can’t be a bubble in housing. And the finance theorists were even more adamant on this point. In a 2007 interview, Eugene Fama, the father of the efficient-market hypothesis, declared that “the word ‘bubble’ drives me nuts,” and went on to explain why we can trust the housing market: “Housing markets are less liquid, but people are very careful when they buy houses. It’s typically the biggest investment they’re going to make, so they look around very carefully and they compare prices. The bidding process is very detailed.”

Krugman went on to say,

Indeed, home buyers generally do carefully compare prices—that is, they compare the price of their potential purchase with the prices of other houses. But this says nothing about whether the overall price of houses is justified. It’s ketchup economics, again: because a two-quart bottle of ketchup costs twice as much as a one-quart bottle, finance theorists declare that the price of ketchup must be right.

However, Krugman did not discuss the key points of momentum trading versus value trading, and the fact that the mortgage agencies, the banking system, and the shadow banking system allowed rapid turnover in house ownership with rapid, generous mortgage availability, and a significant number of houses

were traded like stocks. (In some markets, flipping amounted to up to 35 % of activity). Finally, Krugman recalled the words of H. L. Mencken: “There is always an easy solution to every human problem—neat, plausible and wrong.”

### 1.8.2.3 The 1920s

The books by JKG are replete with reports of specious and unfounded prognostications by commercial magnates during the boom years of the 1920s that supported speculation in stocks. Many of these experts “assured...that [the stock market bubble] was well within the norms of contemporary and successful capitalism.” JKG quoted Irving Fisher of Yale...who “gained enduring fame for the widely reported conclusion that stock prices have reached what looks like a permanently high plateau.”

Only a few took exception (Paul M. Warburg and Roger Babson) but they were widely condemned. JKG traced out the history of the Harvard Economic Society that abandoned its summer position of pessimism late in 1929. In a series of quotations from November 1929 through 1930 and on into 1931, this learned economics society continued to sound the message of optimism. In November 1929, it said: “a serious depression like that of 1920–21 is outside the range of probability.” In December 1929, its forecast for 1930 was favorable. It repeated this judgment on November 23, 1929, and on December 21, 1929: “A depression seems improbable; [we expect] recovery of business next spring, with further improvement in the fall.” The phrases in their reports over the next 2 years included: “...the severest phase of the recession is over,” “definitely on the road to recovery,” “the outlook continues favorable,” and many more prognostications of the same ilk. As JKG pointed out finally:

Somewhat later, its reputation for infallibility rather dimmed, the Society was dissolved. Harvard economics professors ceased forecasting the future and again donned their *accustomed* garb of humility.

Professor Irving Fisher of Yale was a leading economist of his time who had authored books with titles *The Purchasing Power of Money*, *The Rate of Interest*, and *The Theory of Interest*. One of his arguments rested on the benefits he saw flowing from prohibition, citing the work of Columbia Professor Paul Nystrom, who concluded that “a dry nation would increase the efficiency of workers and switch demand from liquor to home furnishings, automobiles, musical instruments, radio, travel, amusements, insurance, education, books and magazines.” He produced a continuous stream of theories, books, and speeches during the 1920s supporting the expansion of the stock market bubble as being well grounded in solid fundamentals. A few days before the Stock Market Crash of 1929, Fisher insisted,

Stock prices have reached what looks like a permanently high plateau. I do not feel there will be soon if ever a 50 or 60 point break from present levels, such as (bears) have predicted. I expect to see the stock market a good deal higher than it is today within a few months.

At the first break in the 1929 markets, he insisted that the market was “only shaking out of the lunatic fringe” and went on to explain why he felt the prices still had not caught up with their real value and should go much higher. The *New York Times*, October 22, 1929, quoted him as saying: “Security values in most instances were not inflated.... The nation is marching along a permanently high plateau of prosperity.... Any fears that the price level of stocks might go down to where it was in 1923 or earlier are not justified by present economic conditions.” For months after the crash, he continued to assure investors that a recovery was just around the corner. JKG summarized,

Professor Irving Fisher tried hard to explain why he had been wrong. Early in November 1929 he suggested that the whole thing had been irrational and hence beyond prediction. In a statement that was not a model of coherence, he said: *It was the psychology of panic. It was mob psychology, and it was not, primarily, that the price level of the market was unsoundly high...the fall in the market was very largely due to the psychology by which it went down because it went down.* (Note that Professor Fisher never suggested that when the markets were leaping upward, they might have been going up because they were going up. And indeed, 75 years later, we still tend to think that bubbling markets are normal and any decline is abnormal.)

The explanation attracted little attention except from the editor of *The Commercial and Financial Chronicle*. The latter observed with succinct brutality: “The learned professor is wrong as he usually is when he talks about the stock market.” The mob he added, “...didn’t sell. It got sold out.”

Before the year was over, Professor Fisher tried again in his book, *The Stock Market Crash—and After*. He argued, and rightly for the moment, that stocks were “still on a plateau,” albeit a somewhat lower one than before, that the crash was a great accident, that the market had gone up “principally because of sound, justified expectations of earnings.” He also argued that prohibition was still a strong force for higher business productivity and profits, and concluded that for “the immediate future, at least, the outlook is bright.” This book attracted little attention. As JKG emphasized: “One trouble with being wrong is that it robs the prophet of his audience when he most needs it to explain why.”

For many years, Fisher was regarded as a pariah of the 1920s stock market bubble, but in recent years, his personal stock has risen. A Federal Reserve

Report<sup>32</sup> was published in December, 2003, entitled *The 1929 Stock Market: Irving Fisher Was Right*. The Abstract of this Fed Report is:

Many stock market analysts think that in 1929, at the time of the crash, stocks were overvalued. Irving Fisher argued just before the crash that fundamentals were strong and the stock market was undervalued. In this paper, we use growth theory to estimate the fundamental value of corporate equity and compare it to actual stock valuations. Our estimate is based on values of productive corporate capital, both tangible and intangible, and tax rates on corporate income and distributions. The evidence strongly suggests that Fisher was right. Even at the 1929 peak, *stocks were undervalued relative to the prediction of theory*.

It may be true that stocks were undervalued in 1929 relative to an abstract theory of economics, but if one considers a more pragmatic view that stocks were worth what investors were willing to pay for them, then they were clearly and massively overvalued.

The Fed Report went on to ask: “If stock prices were not inflated beyond their fundamental values in October 1929, why did the market crash?” They suggested that tightening of money by the Federal Reserve was the principal cause.

However, JKG<sup>33</sup> provided a lengthy discussion of the role (such as it was) of the Federal Reserve during the boom years of 1928–1929. He described the Fed in those days as being “not so much unaware or unwilling, but impotent.” He demonstrated that the speculative fever was so intense that any rise in interest rates would be no deterrent. Nevertheless, the Fed vacillated for 6 months after March 1929 before finally raising the discount rate from 5 to 6% in August 1929. The stock market’s response was a yawn, and it accelerated upward. JKG went on to assert,

The collapse in the stock market in the autumn of 1929 was implicit in the speculation that went before. The only question regarding that speculation was how long it would last.

It is worth noting that learned economists have continued to discuss (one way or the other) whether a “bubble” existed in stock prices in the 1920s. G. J. Santoni (of the Fed) argued against a bubble. White cautiously suggested that it was likely that there was a bubble.<sup>34</sup> De Long and Shleifer<sup>35</sup> concluded

---

<sup>32</sup> McGrattan and Prescott (2003).

<sup>33</sup> Galbraith (1954, Chap. II: “Something Should Be Done”).

<sup>34</sup> White (1990a, b).

<sup>35</sup> De Long and Shleifer (1990).

“that a substantial component of the rise in stock prices up to and fall of stock prices away from September of 1929 was in fact excessive, and not based on rational revisions of warranted valuations.”

JKG took a very different viewpoint. He argued that the economy (rather than the stock market) reached a peak in June 1929 and “then turned down and continued to decline throughout the rest of the year.... Production...for the moment, had outrun consumer and investment demand for them.” He suggested that in 1929 “modifying a famous cliché, the economy was fundamentally unsound.” He provided five factors underlying this weakness: (1) distorted distribution of income among Americans, (2) poor corporate structure, (3) poor banking structure, (4) problems with foreign exchange, and (5) bad economic intelligence. These themes are elaborated in Sects. 2.3 and 2.4. It is important to note that although the auto industry peaked in June 1929, the housing market peaked in 1925–1926 and went sharply downward after that. The automation of farming and the shift from an agricultural economy to a manufacturing economy caused a disjoint relation between productivity and purchasing power during the 1920s.

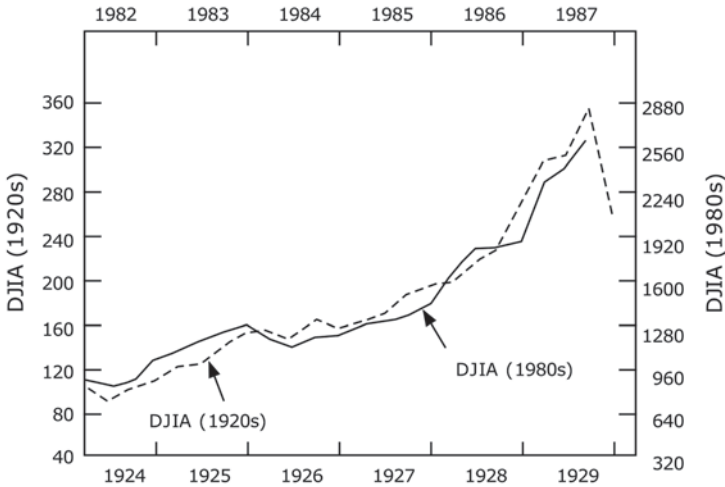
G. J. Santoni, a senior economist at the Federal Reserve Bank of St. Louis, wrote a learned paper in 1987 disputing the attribution of stock market crashes to bursting of bubbles.<sup>36</sup> G. J. Santoni emphasized that “Many people attribute the bull markets of 1924–29 and 1982–87 and the subsequent collapses to speculative bubbles in which a crash was inevitable until the bubble burst” and he showed the similarity of these two bull markets with a graph similar to that of Fig. 1.11.

Santoni quoted many experts who blamed these bull markets and collapses on “gambling, widespread intense optimism, overpriced due to speculation, absurdly high stock prices, unjustifiably high prices of common stocks, greed and fear, and that the collapse of 1929 was implicit in the speculation that went before.” (In doing this, Mr. Santoni clearly implied that these claims are specious and overly emotional.)

However, Santoni went on to say that “if stock price bubbles exist, economic policy makers face a difficult problem because bubbles suggest that plans to save and invest may be based on irrational criteria and subject to erratic change.” This seems to imply that if the behavior of the investing public is beyond rational prediction, then the Fed is in a quandary as to how to react. But the pejorative tone of the sentence suggests significant doubt that bubbles really do occur, despite the evidence provided by Fig. 1.11. For example, Santoni went on to say,

---

<sup>36</sup> Santoni (1987).



**Fig. 1.11** Comparison of bull markets of 1924–1929 and 1982–1987. (Adapted from Santoni 2003)

If stock price bubbles exist, the periods 1924–29 and 1982–87 are likely places to look for them.

This is a very reasonable conclusion. On the other hand, he investigated the possibilities that these increases in stock prices may have been in line with economic fundamentals—whatever that means. Santoni’s complaint seems to have been that there is no economic mathematical formula that can be used decisively to determine whether a bubble is occurring or has occurred. He demanded specific mathematical criteria by which to judge whether in fact a bubble has formed and claimed that attributions of bubbles are made subjectively and that “attributing crashes in stock prices to bursting bubbles adds nothing to our understanding of why crashes occur or how to prevent similar occurrences in the future.”

Finally, Santoni concluded,

This paper provides evidence contrary to the notion that the crashes were the result of bursting bubbles. Rather, the data suggest that stock prices followed a random walk.

Santoni did not seem to be bothered at all by sequentially repeated ~30% compounded increases per year in stock prices over a several-year period. Such stock price increases seemed to be neither incredible, nor unusual, nor unreasonable to him. And if such increases are indeed in line with economic fundamentals, that would seem to imply that either (1) at the beginning of



such a multiyear sequence stocks were grossly underpriced or (2) that economic growth at 30 % per year is commonplace. In fact, no price rise in paper assets seems to have outraged Santoni's sense of proportion. The only thing that bothered him was that "crashes occur" and they need to be prevented. In other words, the end product of repeated 30 % yearly gains needs to be preserved. If Santoni could figure out a way of doing that, maybe we would all be rich, as we would have a "perpetual money machine" (see Sect. 1.6.1). Finally, it would seem most strange that a random walk would produce a repetitive pattern of the sort shown in Fig. 1.11.

The stock market and the economy of the 1920s are discussed further in Sects. 2.3 and 2.4.

Economists, and particularly those who are employed by the Federal Reserve, have difficulty identifying and characterizing bubbles. Part of their problem seems to be that they are so encased in mathematical economic theory that they do not necessarily observe what is happening around them. I am reminded of an occurrence in my life in 1954. Having completed a course in physical chemistry, and attending a class in chemical engineering in college, the professor asked the class: "I have a vat of liquid that is being heated. How do I know when it is boiling?" One student said: "When the vapor pressure equals the atmospheric pressure." No good. Another student said: "When the vapor pressure of the liquid equals the sum of atmospheric pressure plus liquid head." No good. The professor said: "You know it is boiling when bubbles of vapor form in the liquid and rise up to the surface." As students, we were so imbedded in mathematics that we lost sight of the physical reality. So it is in economics. There are probably 100 learned papers in the economics literature full of mathematical equations that purport to provide formulae for detecting the existence of a financial bubble.<sup>37</sup> It seems doubtful to this writer that they provide much more insight than one can derive from common sense. One exception is the paper by Sornette and Cauwels.<sup>38</sup> They argued that "normal growth" is exponential, based on compounding a relatively constant rate of appreciation. They defined bubbles as periods of unsustainable growth. Their concept was that

Bubbles leave specific traces in the price series: the price increases ever faster, decorated by accelerating phases of corrections and rebounds. More technically, this means that during a bubble, the price follows a faster-than-exponential rise, decorated with log-periodic oscillations. This dynamic ends abruptly in a change of regime that may be a crash or a substantial correction. Because they

---

<sup>37</sup> One example of many is Jarrow et al. (2011). Read more at: <http://epubs.siam.org/doi/abs/10.1137/10079673X>.

<sup>38</sup> Didier and Cauwels (2014).



leave such specific fingerprints, bubbles may be recognized in advance, that is, before they pop.

Using a supercomputer at the ETH Zurich, they hunt for bubbles by scanning many thousands of financial time series to detect faster-than-exponential growth as a sign of a bubble. While this approach has considerable merit, it requires a major effort that only one institution in the world seems capable of carrying out.

## 1.9 Monetary Policy and the Federal Reserve System

Central banks, such as the US Federal Reserve, are supposed to be politically independent and are charged with the responsibility to maintain liquidity in the banking system, while avoiding excessive inflation.

As JKG pointed out, the two classic instruments that the Federal Reserve has in dealing with bubbles are open market operations and manipulation of the rediscount rate. Open market sales of governmental securities removes money that otherwise might be used for speculation, and would tend put a damper on speculation. On the other hand, open market purchases flood the banks with money. Theoretically, increasing the discount rate would tend to discourage speculation with borrowed dollars because the cost of borrowing would increase. However, JKG also pointed out that an increase of say 1% in the rediscount rate can hardly discourage an investor during boom times who believes he will make tens or hundreds percent gains with the borrowed money. During the stock bubble of the late 1920s, the interest rate for purchasing stocks on margin sometimes reached as high as 20%, but this did not discourage investors.

Since about the 1980s, the investment public's faith in the effectiveness of monetary policy in fulfilling its charter to maintain liquidity and control inflation seems to have grown by leaps and bounds. Each hint, innuendo, or implication in notes and releases by the Federal Reserve is given great weight and has an immediate short-term effect on the stock markets. In 2008, Richard Fisher, Dallas Federal Reserve President was quoted as saying,

Think of the Fed funds rate as a monetary spigot, and the Fed's goal is keeping the lawn of the economy green and healthy. If we turn the spigot up too forcefully, we will flood and kill the grass with inflation. If we provide too little, the lawn turns brown, starved for money.

However, the reality of the complexities of the investment banking sector led Fisher to admit that

...even as we have been cutting the fed funds rate, even as we have been opening the monetary spigot, interest rates for private sector borrowers have not fallen correspondingly, and rates for some borrowers have increased. The grass is turning brown.

Or, as Mr. LaMonica put it in 2008:

In other words, the rate cuts have not substantially helped and more big rate reductions might not either. Instead, they may simply lead to a further weakening of the dollar and more inflation.<sup>39</sup>

In late 2007 and early 2008, hints and innuendos regarding possible future rate cuts by the Fed made financial headlines and spurred the stock markets to sudden rallies. Fortunately for speculators, the Fed always came through with rate cuts in 2007–2008 whenever the stock market faltered. The stock market faltered in March 1929, and according to JKG, “March 26, 1929 could have been the end” (of the bubble, had the Fed clamped down on the money supply). However, the Fed, when faced with the choice of popping the bubble or prolonging it, chose the latter course.

While theoretically, one may think that part of the responsibility of the Fed is to stabilize the economy by exercising constraint over budding bubbles through monetary policy, in actual practice the Fed is beholden to the current political administration which desires to be returned to office at the next election. History amply demonstrates that people are much happier when their assets are growing by leaps and bounds, than they are when the Fed constrains the money supply to keep the economy in check. As a result, the Fed has actively intervened over and over and over again after 1990 to prop up faltering asset markets and perhaps unwittingly, support expansion of bubbles. One glaring example occurred in the period June–July 2013. On June 17, 2013, the DJIA stood happily at 15,318. At that point “Helicopter Ben” Bernanke announced that the Fed would stop its so-called quantitative easing program to drive down interest rates when unemployment drops to 6.5%. The stock market plummeted to 14,800 on June 21, a drop of over 500 points in 4 days. Helicopter Ben promptly recanted and told the investment world that he would indeed keep interest rates low for the foreseeable future (translated into investmentese: He promised to prop up the stock markets). The stock markets recovered and promptly set new highs.

---

<sup>39</sup> LaMonica (2008).

**Table 1.1** Gains of Standard & Poor's (S&P) 500 and the National Association of Securities Dealers Automated Quotations (NASDAQ) during 1995–2013. (By permission from Alan Reisch. [http://www.1stock1.com/1stock1\\_142.htm](http://www.1stock1.com/1stock1_142.htm))

Year	Gains of the S&P 500 (%)	Gains of the NASDAQ
1995	+37.4	+39.9
1996	+23.1	+22.7
1997	+33.4	+21.6
1998	+28.6	+39.6
1999	+21.0	+85.6
2000	−9.1	−39.3
2001	−11.9	−21.1
2002	−22.1	−31.5
2003	+26.4	+50.0
2004	+9.0	+8.6
2005	+3.0	+1.4
2006	+13.6	+9.5
2007	+3.5	+9.8
2008	−38.5	−40.5
2009	+23.5	+39
2010	+12.6	+16
2011	0.0	−4
2012	+13.3	+17
2013	+27	+38

The stock markets made incredible gains from 1995 to early 2000. Table 1.1 shows the gains made by the markets prior to the crash that started in 2000. Alarmed at the expanding bubble, Alan Greenspan made his now famous comment “irrational exuberance” in late 1996. However, there is no evidence that the Fed took any action against this bubble. After 1996, there were no further negative comments by Greenspan, but he did make quite a few rationalizations for the expanding bubble. Apparently, Greenspan desired to stay in office and be well regarded. The best way to do this was to allow as many people as possible to get rich quickly from asset growth. It is worth pointing out that despite these huge gains in stock prices, timing of stock purchases is very important. Table 1.2 shows the value of a US\$ 100 investment in the Standard & Poor's (S&P) 500 Index or the National Association of Securities Dealers Automated Quotations (NASDAQ) in succeeding years, when the money was invested in 1994 and when the money was invested in 1999. Money invested in 1994 tripled by 2012, while money invested in 1999 either stagnated or diminished in value.

**Table 1.2** Value of an investment of US\$ 100 in the S&P 500 or the NASDAQ in 1994 or in 1999

Year	Investment in S&P 500		Investment in NASDAQ	
	In 1994	In 1999	In 1994	In 1999
1994	100		100	
1995	137		140	
1996	169		172	
1997	226		209	
1998	290		291	
1999	351	100	541	100
2000	319	91	328	61
2001	281	80	259	48
2002	219	62	177	33
2003	277	79	266	49
2004	302	86	289	53
2005	311	89	293	54
2006	353	101	321	59
2007	365	104	352	65
2008	225	64	210	39
2009	278	79	291	54
2010	313	89	338	63
2011	313	89	325	60
2012	354	101	380	70

It is also interesting to compare the accumulation of funds at the end of 2012 that would result from annual investments each year of US\$ 100 into the S&P 500 or the NASDAQ. These results are shown in Table 1.3. They show that even though there were some large gains in the stock indices in some years, the large drops in 2001 and 2008 reduced overall gains to be comparable to those from fixed investments.

Artificially low interest rates create an illusion of wealth that tempts borrowers into taking on unsustainable debt. This illusion produces a temporary excess of demand over supply, driving up sales. Easy loans make expensive consumer goods suddenly appear affordable. Low interest rates and excessive money supply consequently cause asset prices to rise. During the real estate bubble from 2002 to 2007, the Fed drove down interest rates, reducing the national savings rate to low levels. No constraints were placed on banks issuing very risky mortgages, and a housing bubble resulted.

However, JKG was highly critical of monetary policy as an instrument of financial management. Thus, he said,

**Table 1.3** Asset gain at the end of 2012 that would result from annual investments each year of US\$ 100 into the S&P 500, the NASDAQ, or fixed interest

Year	Invest in S&P 500		Invest in NASDAQ		Invest at 3% interest		Invest at 4% interest	
1994	100		100		100		100	
1995	237		240		203		204	
1996	392		394		309		312	
1997	623		580		418		425	
1998	901		909		531		542	
1999	1191	100	1787	100	647	100	663	100
2000	1182	191	1185	161	766	203	790	204
2001	1142	268	1035	227	889	309	921	312
2002	989	309	809	255	1016	418	1058	425
2003	1351	490	1313	483	1146	531	1201	542
2004	1572	635	1526	625	1281	647	1349	663
2005	1719	754	1648	733	1419	766	1503	790
2006	2053	956	1904	903	1562	889	1663	921
2007	2225	1090	2191	1091	1709	1016	1829	1058
2008	1468	770	1403	749	1860	1146	2002	1201
2009	1913	1051	2051	1142	2016	1281	2182	1349
2010	2255	1284	2479	1424	2176	1419	2370	1503
2011	2355	1384	2480	1467	2341	1562	2565	1663
2012	2768	1668	3001	1817	2512	1709	2767	1829
Total investment	1800	1300	1800	1300	1800	1300	1800	1300
Asset gain	968	368	1201	517	712	409	967	529
Total % gain	53.8%	28.3%	66.7%	39.8%	39.5%	31.4%	53.7%	40.7%
Annual % gain	2.8%	2.0%	3.5%	2.8%	2.1%	2.2%	2.8%	2.9%

There is no magic in the monetary system, however brilliantly or esoterically administered, which can reconcile price stability with the imperatives, of production and employment as they are regarded in the affluent society. On the contrary, monetary policy is a blunt, unreliable, discriminatory and somewhat dangerous instrument of economic control. It survives in esteem partly because so few understand it, including [those] on whom it places the prime burden of its restraint.

As we pointed out earlier, Robert E. Lucas (Nobel laureate in economics) argued against the common belief that easy money policy with low interest

rates boosts economic growth, suggesting that any attempt to boost growth through reducing interest rates is counterproductive.

On January 17, 2008, Richard W. Fisher, head of the Dallas branch of the Federal Reserve System, gave a speech in which he elaborated his views on the role of the Fed.<sup>40</sup> In this speech, he asserted,

Our job is not to bail out imprudent decision makers or errant bankers, nor is it to directly support the stock market or to somehow make whole those money managers, financial engineers and real estate speculators who got it wrong. And it most definitely is not to err on the side of Wall Street at the expense of Main Street.

These are good words indeed, but are they credible? The day after the crash of October 19, 1987, the Fed acted to provide liquidity to the financial system “*in an effort to restrain the declines in financial markets*” and to prevent any spillovers to the real economy.<sup>41</sup> In late 2007 and early 2008, the Fed reacted promptly to every downturn in the stock market with a rate cut.

Fisher said that the Fed operates under two mandates: “grow employment *and* contain inflation.” He then went on to assert: “the Fed has delivered on its mandate.”

One cannot help but wonder whether the Fed would take credit for the sunrise every morning by facing east and saying: “arise oh sun.” Inflation has indeed been under control, but mainly because real wages have been rather stagnant for 25 years, and the main way that people have become more prosperous is through inflated stock and real estate bubbles.

Mr. Fisher then attacked inflation as a scourge that “ultimately proves debilitating for businesses, consumers, investors...and especially for the poor, the elderly and people on fixed incomes.” He said that inflation “inculcates bad financial behavioral patterns in the young by encouraging spending rather than investment and saving. Inflation is bad for Main Street and Wall Street.” He reaffirmed his dedication to combat inflation. However, I have observed that what is worst for the poor, the elderly and people on fixed incomes on Main Street is low interest rates, thus robbing them of a meager income from their savings. The Fed has proved itself willing and able to slash interest rates to preserve bubbles; how can it claim to desire to support Main Street and encourage saving?

William Poole, President of the Federal Reserve Bank of St. Louis presented a speech entitled: “Real Estate in the US Economy” before the Industrial As-

<sup>40</sup> [http://www.actionforex.com/fundamental-analysis/fed/\(fed\)-richard-w.-fisher-%11-challenges-for-monetary-policy-in-a-globalized-economy-2008011735172/](http://www.actionforex.com/fundamental-analysis/fed/(fed)-richard-w.-fisher-%11-challenges-for-monetary-policy-in-a-globalized-economy-2008011735172/).

<sup>41</sup> Carlson (2007).

set Management Council Convention in St. Louis on October 9, 2007. His speech seemed to minimize the depth of the financial problem facing the country in the wake of the punctured real estate bubble. He said: “Unfortunately, recent events suggest that housing will remain weak for several more quarters; stabilization may not begin until well into 2008.” As it turns out, stabilization did not occur until late 2012. It appears that the Federal Reserve grossly underestimated the extent and depth of the aftermath of the puncture of the real estate bubble.

What is more instructive, however, is Poole’s statement:

The Federal Reserve has neither the power nor the desire to bail out bad investments. We do have the responsibility to do what we can to maintain normal financial market processes. What that means, in my view, is that we want to see restoration of active trading in assets of all sorts and in all risk classes. It is for the market to judge whether securities backed by sub-prime mortgages are worth 20 cents on the dollar, or 50 cents, or 100 cents. Obviously, the market will judge different sub-prime assets differently, based on careful analysis of the underlying mortgages. That process will take time, as it is expensive to conduct the analysis that good mortgage underwriting would have conducted in the first place. Although there is a substantial distance to go, restoration of normal spreads and trading activity appears to be under way, and we can be confident that in time the market will straighten out the problems. We do not know, however, how much time will be required for us to be able to say that the current episode is over.

After observing the Federal Reserve’s panicky attempt to thwart the inevitable collapse of the real estate bubble via a succession of rate cuts and bailouts of failing institutions during 2008, we now have *prima facie* evidence that, contrary to Poole’s assertion, the Fed does have the *desire* to bail out bad investments. Whether it has the *power* to resurrect bad investments remains to be seen. As we go to press in early 2014, Fed policies seem to be regenerating the old housing boom.

We have previously quoted a Fed official who said that after the crash of 1987, the Fed acted to “*restrain the declines in financial markets.*”

The exact role of the Fed in “restraining the declines in financial markets” remains uncertain. A provocative report<sup>42</sup> suggested that the Fed’s role in protecting declining asset markets throughout the past few decades has been more active and direct than is generally realized. However, the report relied upon innuendo, inference, and reading between the lines of statements by high officials; there is no firm evidence for any of the claims that were made.

---

<sup>42</sup> Embry and Hepburn (2005).

Nevertheless, the views expressed in this report are not beyond credibility and are likely to represent fact to some considerable extent. Here is a brief digest of their conclusions:

- The USA has a so-called Plunge Protection Team whose primary responsibility is the prevention of destabilizing stock market declines. Comprising key government agencies, stock exchanges, and large Wall Street firms, this informal group was apparently created in 1989 as an outgrowth of the President's Working Group on Financial Markets.
- At the time of the Long Term Capital Management crisis in 1998, the Federal Reserve directed large banks to prop up the currency markets. This was apparently done to diffuse a global currency crisis.
- In response to the September 11 terrorist attacks, the Federal Reserve and large Wall Street firms prepared to support the main stock markets by buying shares if panic selling ensued. Investment banks and brokerage houses took concerted actions in the aftermath of the tragedy.
- Before the 2003 Iraq invasion, the USA and Japan reached an agreement to intervene in stock markets if a financial crisis occurred during the war. Though it was announced at a press conference by a Japanese government official, the USA never publicly acknowledged the accord.
- The stability of domestic stock markets is considered by the US government to be a matter of national security. Interventions are likely justified on the grounds that the health of the US financial markets is integral to American preeminence and world stability. (Since stocks are owned predominantly by the rich, this implies that preservation of the wealth of the rich is integral to American preeminence and world stability.)
- A 1989 *USA Today* story revealed that government regulators asked market participants to buy stocks in October 1989 to prevent another plunge. When these overtures proved ineffective, large brokerage firms appear to have intervened in the futures market to support the underlying index. In this regard, the recovery was remarkably similar to the miraculous turnaround in equities the day following the 1987 crash.
- The Fed will attempt to stabilize plunging stock markets by purchasing stock index futures contracts. Such a move would force the underlying index to rise. There are implications that the government supported the stock market in 1987, 1989, and 1992.

Shiller<sup>43</sup> argued that credit tightening was an important contributor to the crash of 1929 and the ensuing depression. He said,

---

<sup>43</sup> Shiller (2004).



There have been occasions on which tightened monetary policy was associated with the bursting of stock market bubbles. For example, on February 14, 1929, the Federal Reserve raised the rediscount rate from 5 to 6% for the ostensible purpose of checking speculation. In the early 1930s, the Fed continued the tight monetary policy and saw the initial stock market downturn evolve into the deepest stock market decline ever, and a recession into the most serious US depression ever.

However, as JKG showed, nothing could be further from the truth. First of all, the stock market inflated unabated after the February 1929 increase in the discount rate. The stock market shrugged off the increase in the interest rate. Secondly, the bubble mentality was so frothing that investors were happy to pay double-digit margin interest rates to plough more money back into the stock market. What might have contributed more to the demise of the bubble and formation of the depression was fiscal policy in which taxes were raised to balance the budget—which was what JKG calls the “conventional wisdom” of the times.

Shiller also believed that when Japan raised the discount rate from 2.5 to 6% at the peak of the Japanese stock market between May 1989 and August 1990 “which were thought to have become overpriced because of easy monetary policy...this action by the bank played some role in the stock market crash and severe recession that followed.” In saying this, he seems to imply that all was well in Japan with the Nikkei at 35,000 and the bubble would have endured had it not been for a tightening of credit. He does not seem to consider that the Japanese bubble was greatly overinflated with the Nikkei at 35,000 and was likely to pop of its own accord had it been left to run its course.

Shiller asserted that tightening money “has the potential to exert a devastating impact on the economy as a whole” but might not strongly affect the expansion of a bubble. He concluded:

A small, but symbolic, increase in interest rates by monetary authorities at a time when markets are perceived by them to be overpriced is a useful step, if the increase is accompanied by a public statement that it is intended to restrain speculation. But authorities should not generally try to burst a bubble through aggressive tightening of monetary policy.

He did not discuss the counterpoint to this. Should the monetary authorities merely make a small, but symbolic, decrease in interest rates at a time when markets are perceived by them to be falling rapidly? In retrospect, it now seems clear that decreased interest rates do not stimulate business directly as

claimed by many economists. Instead, the major effects of reduced interest rates are: (1) increased borrowing, (2) discouraging savings and investments in interest bearing securities, (3) promotion of bubbles in paper assets, and (4) increased disparity between the rich and the poor.

While the common belief is that reduced interest rates stimulate business by reducing the cost of borrowing, it seems likely that the major effect of reduced interest rates is mainly to discourage saving, and the funds that would have gone into saving then migrate into paper assets: stocks or real estate. The valuation of these assets rises as demand increases, producing what Mr. Greenspan called the "wealth effect" in which people feel wealthier, spend more, and stimulate the economy. Lower capital gains taxes also contribute to such booms. Hence, the stimulus for business produced by lower interest rates is mainly a consequence of bubble formation. Since the majority of stock is held by wealthier people, the people who "feel wealthier" are the ones in the upper strata of income in the first place. Meanwhile, those in the lower strata of income, who depend on interest income from savings accounts, suffer diminished income. Hence, we see that reduced interest rates promote a greater disparity between the wealthy and the poor.

The Federal Reserve System apparently operates under the belief that there is no end to American borrowing. The Federal Reserve System serves the rich who profit the most from bubbles, and cares not for the loss of income to savers.

JKG provided his assessment of the Federal Reserve System<sup>44</sup> when he described it as "our most prestigious form of fraud, our most elegant escape from reality." JKG began by emphasizing the lofty regard in which the Federal Reserve (and more specifically, its longtime chairman, Mr. Greenspan, and we should include his successor Ben Bernanke) is held for supposedly controlling inflation and recession. As JKG said,

Quiet measures enforced by the Federal Reserve are...manifestly ineffective. They do not accomplish what they are presumed to accomplish. Recession and unemployment or boom and inflation continue. Here is our most cherished and, on examination, most evident form of fraud.

JKG's claim was that all recessions eventually come to an end, but not because of actions taken by the Fed. However, the mystique of Greenspan, Bernanke, and the Fed is so pervasive that the Fed "will receive credit if and when there is full recovery." But JKG insisted,

---

<sup>44</sup> Galbraith (2004).

When times are good, higher interest rates do not slow business investment. They do not much matter; the larger prospect for profit is what counts. And in recession or depression, the controlling factor is the poor earnings prospect. At the lower interest rates, housing mortgages are refinanced; the total amount of money so released to debtors is relatively small and some may be saved. Widespread economic effect is absent or insignificant.

However, as the subprime mortgage fiasco indicates, if 12 trillion dollars worth of mortgages are refinanced, a housing bubble will result. JKG seems to have underestimated the potential for such a housing bubble resulting from low interest rates.

Finally, JKG described the Federal Reserve in 1929 as “a body of startling incompetence.” Is there any reason to believe that anything has changed since then?

Lawrence H. White (2009)<sup>45</sup> said,

Our current [2009] financial turmoil began with unusual monetary policy moves by the Federal Reserve System and novel federal regulatory interventions. These poorly chosen public policies distorted interest rates and asset prices, diverted loanable funds into the wrong investments, and twisted normally robust financial institutions into unsustainable positions. There is no doubt that private miscalculation and imprudence have made matters worse for more than a few institutions. Such mistakes help to explain which particular firms have run into the most trouble. But to explain industry-wide errors we need to identify price and incentive distortions capable of having industry-wide effects.

White went on to say,

“The Federal Reserve’s expansionary monetary policy supplied the means for unsustainable housing prices and unsustainable mortgage financing.” He also pointed out “The growth in regulatory mandates and subsidies exaggerated the demand for riskier mortgages, most importantly the implicit guarantees to Fannie Mae and Freddie Mac, combined with HUD’s imposition of “affordable housing” mandates on Fannie and Freddie accelerated the creation of a market for securitized subprime mortgages.”

White pointed out that while some authors have asked: “Should the Fed actively burst a growing bubble? If so, how?” But White argued that “a more important pair of questions is: Does Fed policy as currently conducted tend

---

<sup>45</sup> By permission from White (2009).

to inflate assets bubbles? If so, how can we reformulate policy to avoid that tendency?” However, if a bubble is the desired result, why raise the question how to stop bubbles from forming and expanding? White argued as an economist that a sane monetary policy does not “hold interest rates too low for too long.” He also argued “that a Fed policy that deliberately ignores asset prices, as though consumer prices alone were a sufficient indicator of excessive Fed expansion, is also not the way to avoid inflating asset bubbles.” He then recounted how the “Federal Reserve System under Chairman Alan Greenspan began aggressively expanding the U.S. money supply” after 2001. As he pointed out,

The real Fed funds rate was negative—meaning that nominal rates were lower than the contemporary rate of inflation—for an unprecedented two and a half years. A borrower during that period who simply purchased and held vacant land, the price of which (net of taxes) merely kept up with inflation, was profiting in proportion to what he borrowed.

White then posed the question: “How do we judge whether the Fed expanded more than it should have?” White then launched a discussion in terms of classical economics, and followed this with an application of the “Taylor rule,” which “...offers a method of estimating the level of the federal funds rate that would be consistent (conditional on current inflation and real income) with keeping the economy’s price inflation rate to a chosen target rate.” White pointed out that “...from early 2001 until late 2006 the Fed kept the federal funds rate on a path well below a rate that would have targeted a 2% inflation rate.”

In a later paper, White<sup>46</sup> argued,

...the use of financial regulation to try to prevent bubbles is a mistake—a fool’s errand. Bubbles are easy to identify after the fact but much harder (or impossible) to identify beforehand. In the absence of (the near impossible) success in correctly identifying bubbles beforehand, efforts to address bubbles beforehand run the severe risk of squelching efficient and productive price changes—the false positives—as well as squelching the speculative and ultimately wasteful price changes of a bubble.... However, what financial regulation—specifically, prudential regulation—can do is to ameliorate the consequences of a bursting bubble for the financial sector.

---

<sup>46</sup> By permission from White (2011).

White said,

The definitive identification of a bubble is always an after-the-fact event. During the period of the asset price increase, there will always be a diversity of opinion, including skeptics as well as enthusiasts—after all, someone must be selling at the time that the enthusiasts are buying—but during the period of the price increase the sentiment of the enthusiasts outweighs that of the skeptics. But this is no different from a period of an asset price increase that is based on what afterward turns out to be a solid foundation—for example, the rise in importance of the telegraph in the middle of the 19th century, the rise of the importance of the telephone in the late 19th and early 20th centuries, the rise of the automobile in the first half of the 20th century, the rise of radio broadcasting in the early 20th century, and the rise of television broadcasting in the middle of the 20th century. Enthusiasts promoted these trends; skeptics expressed doubt.

My response to this is skeptical. Maybe economists do not have mathematical formulae to precisely define the existence of a bubble, but common sense clearly defines the existence of a bubble. Multiple years of two-digit gains in paper assets are unsustainable. They amount to a “perpetual money machine.” Single yearly gains of 30% or even 90% are immediate and glaring evidence of a bubble. Yes, there have been technological and economic innovations that may have increased productivity. However, in every instance where this occurred, responses in asset price far outreached any reasonable expectation for profit gains. Furthermore, each such innovation seems to disjoint the economy. Increases in productivity allow producers to produce goods and services with fewer employees. As a result, there is typically a lengthy adjustment period whereby the net result is not that more people have more goods and services (i.e., a higher standard of living), but rather that more people are out of work. The “enthusiasts” that White refers to are the ones riding the wave of euphoria; in the case of the 1997–2006 housing bubble, it was the banks, the mortgage companies, the investment banks, the public who bought and refinanced, and the Federal Reserve who financed the whole thing. The “skeptics” were the realists who were not caught up in the maelstrom of enthusiasm.

White argued that one could not determine that a bubble existed until after it popped. Therefore, he argued that “widespread intervention to ward off asset bubbles” would be “giving excessive weight to skeptics.” But it is quite obvious that a bubble exists while it is expanding, and mathematical formulae are not needed. I wrote the first edition of this book originally in 2005–2006, with the main theme to expose the impending housing bubble collapse that I predicted would happen a year or two. By the time I lined up a publisher,

the collapse had already taken place. The book had to be rewritten in past tense. I did not need any complex economic formulation to tell me there was a bubble.

However, the Chairman of the Federal Reserve is basically a politician, or at least beholden to politicians. Greenspan has been quoted<sup>47</sup> in 2005 at the height of the housing bubble as predicting a rather benign end to the housing boom with significant benefits: "...an end to the housing boom could induce a significant rise in the personal saving rate, a decline in imports, and a corresponding improvement in the current account deficit." In other words, Greenspan foresaw a high plateau after the housing bubble runs its course, rather than the cataclysmic decline that actually occurred.

Roubini (2006) pointed out:

Fed officials have articulated—over the last few years—a series of arguments against the view of targeting asset prices in the conduct of monetary policy. And they have used these arguments to explain or justify why the Fed did not react to the “irrational exuberance” of the late 1990s in spite of the fact that the bubble eventually burst in 2000; as is well known, this crashing bubble and the ensuing investment bust was the major reason behind the economic recession of 2001. They have instead argued that the Fed should “mop up after,” i.e. react to bursting bubbles to prevent them from causing economic and financial damage after they crash. This view implies an asymmetric response to bubbles: no reaction to them on the way up but aggressive monetary easing when bubbles burst to contain the collateral damage of crashing bubbles.

Roubini made half a dozen arguments why the Fed should use “monetary targeting of asset prices and asset bubbles.” Roubini (like most other economists) agreed that it might be difficult at times to determine if there is a bubble, and furthermore whether the bubble “can have damaging effects on the economy.” Nevertheless, he argued, “monetary policy should respond to asset bubbles in a cautious and moderate matter.” He criticized “the Greenspan argument that the Fed should not react to rising bubbles but should be ready to ease in order to dampen the real costs of bursting bubbles (i.e., an asymmetric response to bubbles)” as being “inefficient and, possibly, a source of moral hazard distortions.”

Posen (2006)<sup>48</sup> wrote a rebuttal to Roubini’s paper in which he said: “Central banks should not be in the business of trying to prick asset price bubbles.” He said (correctly),

---

<sup>47</sup> By permission from Roubini (2006).

<sup>48</sup> By permission from Posen (2006).

Bubbles generally arise out of some combination of irrational exuberance, technological jumps, and financial deregulation (with more of the second in equity price bubbles and more of the third in real estate booms).

Then he went on to say,

Accordingly, the connection between monetary conditions and the rise of bubbles is rather tenuous, and anything short of inducing a recession by tightening credit conditions prohibitively is unlikely to stem their rise.

My response to this, once again, is skeptical. It seems abundantly clear that all of the bubbles of the past three decades were encouraged, supported, and even enabled by loose monetary policies, responses of the Fed to downturns in markets, and the so-called Greenspan put—the promise that the Fed would bail out big losers if there was a financial debacle. On the other hand, capitalism seems to have reached the point where the economic system has only two possible set points. In one, the books are balanced, monetary policy is firm, and the economy is in permanent recession. In the other, monetary policy is loose, debt grows by leaps and bounds, the economy limps along, and asset values bubble up and pop. It is indeed a Hobson's choice.

Posen went on to argue that the macroeconomic harm from a bubble bursting depends on the fragility of the underlying economy. He claimed that the negative effects of the bursting of the *dot.com* bubble were “relatively limited” (“relatively limited” = US\$ 3 trillion) because the US economy was robust. I suppose to an economist that might make sense but to ordinary citizens who work for a living, many people made and lost a lot of money and the whole investment field was turned into a crapshoot. Writing in 2006, shortly before the housing bubble popped, driving the so-called robust US economy into the worst recession since the 1930s, Posen displayed a remarkable lack of foresight.

The simple fact is that people are happier when they are in the midst of a financial bubble. The Fed does not want to pop bubbles. While it is true that bubbles inevitably pop of their own accord, politicians usually move on, leaving the popped bubble for successors to deal with. If the Fed wanted to quash a bubble, they could. But the truth is that the reason they support bubbles is not that they cannot discern a bubble exists, but rather that they do not want to rain on the investors' picnic. In the recent era during which real wages stagnated, the only hope for prosperity was to profit from asset bubbles.

In September 2009, in a lengthy New York Times article, Paul Krugman said,

During a normal recession, the Fed responds by buying Treasury bills—short-term government debt—from banks. This drives interest rates on government debt down; investors seeking a higher rate of return move into other assets, driving other interest rates down as well; and normally these lower interest rates eventually lead to an economic bounce-back. The Fed dealt with the recession that began in 1990 by driving short-term interest rates from 9 % down to 3 %. It dealt with the recession that began in 2001 by driving rates from 6.5 % to 1 %. And it tried to deal with the current recession by driving rates down from 5.25 % to zero.

But zero, it turned out, isn't low enough to end this recession. And the Fed can't push rates below zero, since at near-zero rates investors simply hoard cash rather than lending it out. So by late 2008, with interest rates basically at what macroeconomists call the "zero lower bound" even as the recession continued to deepen, conventional monetary policy had lost all traction.

Mike Shedlock provided an interesting viewpoint on how markets are affected by expectations for actions by the Fed.<sup>49</sup> He said,

The Fed, by its very existence, alters the economic horizon. Compounding the problem are all the eyes on the Fed attempting to game the system.

For example: If market participants are expecting the Fed to cut on weakness and the Fed does, market participants gets into a psychology of expecting more cuts on more weakness. Here is another example: If market participants expect the Fed to cut rates when economic stress occurs, they will takes positions based on those expectations. These expectation cycles can be self-reinforcing.

He illustrated this by pointing out that the 1 % Fed Funds Rate in 2003–2004 was artificial and "it is highly doubtful the market on its own accord would have reduced interest rates to 1 % or held them there for long if it did." He then suggested that

What happened in 2002–2004 was an observer/participant feedback loop that continued even after the recession had ended. The Fed held rates rates too low too long. This spawned the biggest housing bubble in history. The Greenspan Fed compounded the problem by endorsing derivatives and ARMs at the worst possible moment.

---

<sup>49</sup> By permission from M. Shedlock: The Fed Uncertainty Principle, [http://useconomy.about.com/od/glossary/g/Soc\\_Sec\\_Trust.htm](http://useconomy.about.com/od/glossary/g/Soc_Sec_Trust.htm).



## 1.10 Fiscal Policy and Taxes

### 1.10.1 Tax Policies

#### 1.10.1.1 Income Tax

While *monetary policy* is concerned with the money supply and interest rates, *fiscal policy* is concerned with the balance between government spending and tax receipts, producing either a budget surplus or a budget deficit. According to JKG, liberals tend to prefer fiscal policy, whereas conservatives tend to prefer monetary policy in managing the economy. The effect of fiscal policy is more easily described than the effect of monetary policy. Fiscal policy primarily affects consumer spending whereas monetary policy primarily affects business investment. However, JKG believed that fiscal policy has not proven itself to be a good defense against inflation.

In the post-WWII years, the conservatives in the USA preferred to constrain government spending and taxes, and sought the holy grail of a balanced budget. Constrained government spending implied minimal support of social welfare programs, and as a result, the conservatives were described as heartless by their opposition. By contrast, liberals were more concerned with providing for the needy, and in order to secure funds for social welfare programs, they were willing to raise taxes, particularly on the rich (at least in theory if not in practice). As a result, the opposition to liberals described them as spendthrift and labeled them as advocates of a “tax and spend” policy.

The Republican Party has had a strong aversion to increased taxes for a considerable time. Unfortunately, as government spending has inevitably increased, particularly through “entitlements,” this has made it difficult, if not impossible, to produce a balanced budget. In addition, the high cost of defense, strongly endorsed by Republicans, which produces no products of use to the public, continues to increase. Hence, the two essential elements of conservatism: a balanced budget and low taxes have proven to be incompatible. When push comes to shove, the Republicans have been willing to forego a balanced budget, but treat a tax increase as a veritable policy from hell delivered by the devil. As a result, the Bush administrations of 2000–2008 generated what were then unprecedented high budget deficits through tax cuts. This was intended to “correct” the “mistake” that George Bush senior made when he raised taxes slightly during his 1988 term. In July 2008, President Bush announced that the yearly deficit for 2008 would hit a new high. Since then, the annual deficits have soared into unprecedented territory under a Democratic president.

One of the amazing things that is difficult to comprehend, is the fact that the Republicans have swayed roughly half the voters in America into accept-

ing their tax policies, which are contrary to the interests of all except the rich, who constitute a small minority. I suppose the only rationale for this is that opposition to abortion, gay rights, and illegal immigration are perceived by many in the South and Midwest as more important than economic policies that support the lower-income strata of society. Thus, many of those who vote Republican are voting for economic policies that are contrary to their personal interests because they are more highly motivated by these social issues. These policies involve the following machinations:

- a. The Republicans enact an across-the-board tax reduction that produces huge tax cuts for the rich and very modest tax cuts for the middle class. This might typically be disguised as an across-the-board cut of equal percentage, say 2% to all. But 2% of a US\$ 30,000 income is six hundred dollars, whereas 2% of a US\$ 50,000,000 income is a million dollars. Alternatively, it could be a cut in capital gains taxes, and since the rich earn a much higher proportion of their income from capital gains, this benefits the rich the most by far. Thus, the Republicans throw the middle class a bone, and eat the roast themselves. And about half of the public loves them for it.
- b. If the Democrats propose to modify the tax code by reducing taxes on the poor and increasing taxes on the rich, the Republicans blare in stentorian tones: “The Democrats want to raise taxes!” They describe this as “class warfare.” “Class warfare” means taking a greater proportion of tax money from the rich percentagewise. But the tax policies of the Republicans amount to class warfare in the opposite direction. And the public seems to fall for it every time. Yet the Democrats, for all their posturing and dialogs about taxing the rich, do not seem to follow through on these promises, probably because the Democratic leaders are wealthy themselves.

The Bush administration passed tax cuts in 2001 and 2003 that mainly benefited the rich and led to the era of huge budget deficits. One of the strange things about these tax cuts was that they expired at the end of 2010. The reason for this is was as follows. In 1985 and 1990, the US Senate passed what is known as the *Byrd rule* (after Sen. Robert Byrd), as an amendment to the Congressional Budget Act of 1974. This blocks any piece of legislation if it will significantly increase the federal deficit beyond a 10-year term. Hence, the term of the tax cut was linked to the ensuing budget deficits in the aftermath of the tax cut in light of the Byrd rule, as well as the perceived propaganda value of limiting the cumulative deficit produced by the tax cuts by limiting the tenure of the cuts. However, the Republicans had control of Congress, so it seems like that they had the votes to override the Byrd Rule. Furthermore, since they were evidently expecting deficits, how could they claim (as they incessantly do) that reduced taxes reduce deficits? That is purely

a rhetorical question. Two strange aspects of the possible expiration of the tax cuts arise. One is that with the prospect of higher capital gains tax in 2011, 2010 might prove to be a very good year to take capital gains by selling assets. Another aspect is that the inheritance tax was programmed to drop each year and finally go to zero in 2010, but return to its longstanding level of about 50 % with only a modest exemption in 2011. Hence, by committing suicide in 2010, a sickly person can double the legacy left to his heirs compared to dying in 2011. ***In other words, it paid dividends to die in 2010 rather than 2011.***

The maximum income tax bracket in the USA has historically been much higher than it is today. From 1917 through 1986, a period of 70 years, the maximum income tax rate in the highest income bracket was 50 % or higher, except for the interval 1925–1931 when it was 25 %. The top tax rate for the highest earners was more than 90 % from 1944 to 1963, and was 70 % or higher from 1936 through 1970. The first thing that President Reagan did on taking office in the 1980s was to reduce the maximum income tax rate for the highest earners from 70 to 50 %. In 1987, he strove to further cut this rate to 28 %. David Cay Johnston (DCJ) suggested that there was an evangelical drive to do this, as if it would bring ruin on the nation if the maximum rate were as high even 29 %. However, with the Democrats controlling both houses of Congress, in order to push this second tax reduction for the rich through Congress, Reagan's administration needed to claim that the new tax system would generate as much revenue as the previous one. To achieve this, they made some changes to the tax laws to increase government revenues, including

1. Expansion of the definition of taxable income.
2. Elimination of many tax shelters.
3. Adding personal exemptions and the standard deduction to the alternative minimum tax (AMT). The AMT was originally devised to prevent the super rich from avoiding taxes, whereas personal exemptions and the standard deduction are of greatest use and value to the poor and the middle class. This policy, endorsed by the Democrats, was a direct attack on the middle class, lowering the income threshold at which taxpayers began paying the AMT.
4. Creating an inversion (or “bubble”) in the income tax bracket structure whereby income in the range US\$ 71,900 to US\$ 149,250 was taxed at 31 %, while income greater than US\$ 149,250 was taxed at only 28 %. Normally, upper income brackets are taxed at higher rates. (This was the first—and hopefully last—time that such an inversion of tax rates was ever enacted, and it was done with full complicity of the Democrats.)

**Table 1.4** Who pays how much income tax in the USA? (2009—from Congressional Budget Office)

Households ⇒	Lowest 20 %	Second 20 %	3rd 20 %	4th 20 %	Top 20 %	Top 1 %
1. Percent of total income taxes paid	0.3	3.8	9.4	18.3	67.9	22.3
2. Pretax income (% of total)	5.1	9.8	14.7	21.1	50.8	13.4
3. Average income per household (US\$ 1000s)	23.5	43.4	64.3	93.8	223.5	1219
4. Effective federal income tax rate (%)	1.0	6.8	11.1	15.1	23.2	28.9
5. Effective SS and Medicare tax rate (%)	7.65	7.65	7.65	7.65	4.5	2.0
6. Sum of effective income, SS, and Medicare rate (%)	8.7	14.5	18.8	22.8	27.7	30.9
7. % of total wealth in the USA	0.0	0.0	2.8	8.3	88.9	35

SS Social Security

Two bizarre aspects of the tax revision of 1987 were:

- Although the regular income tax rates were indexed for future inflation, the AMT was not. As the years went by, and inflation raised the general level of incomes, this led to the unintended consequence that millions of taxpayers became susceptible to paying the AMT.
- Despite the supposed removal of tax shelters, in 1987, 140,000 taxpayers paid the AMT but 472 with very high gross incomes paid no taxes at all.

As the years went by, the number of taxpayers subject to the AMT rose to about 4 million per year.

There are a great number of websites on the Internet, and learned papers by economists, often in the employ of right-wing “think tanks,” that explain why a policy of “soaking the rich” is unproductive and self-defeating for the economy. Fox News broadcasts this message daily and repeatedly on radio, TV, and the Internet. Most of these websites claim that the rich are already paying an inordinate share of income taxes, and that there is not much more that can be squeezed out of the rich. These websites emphasize row 1 in Table 1.4, showing that the top 20% of households contribute 68% of income taxes, and the top 1% contributes 22% of total income taxes. These data would suggest that the rich are already shouldering a very heavy burden, and it would be grossly unfair to ask more of them. However, as the sayings go, “figures don’t lie but liars do figure” or “there are lies, damned lies and there are statistics.” The percentage of total income tax is a meaningless figure by itself. As row

**Table 1.5** Who pays how much income tax in the USA? (2005—from Congressional Budget Office)

Households ⇒	Lowest 20 %	Second 20 %	3rd 20 %	4th 20 %	Top 20 %	Top 10 %	Top 5 %	Top 1 %
1. Percent of total income taxes paid	-2.9	-0.9	4.4	13.1	86.3	72.7	60.7	38.8
2. Pretax income (% of total)	4.0	8.5	13.3	19.8	55.1	40.9	31.1	18.1
3. Average income per household (US\$ 1000s)	15.9	37.4	58.5	85.2	231	339	520	1560
4. Effective federal income tax rate (%)	4.5	10.0	13.9	17.2	25.1	26.9	28.5	31.1
5. Effective SS and Medicare tax rate (%)	7.65	7.65	7.65	7.65	4.5	3.5	2.8	1.9
6. Sum of effective income, SS, and Medicare rate (%)	12.2	17.7	21.6	24.9	29.6	30.4	31.3	33.0
7. % of total wealth in the USA	0.0	0.2	3.8	11.3	84.6	71.2	58.9	34.3

2 of Table 1.4 shows, the top 20 % of households account for 51 % of total income in the USA. More importantly, as rows 7 of Tables 1.4 and 1.5 show, the top 20 % of households own 88.9 % of the wealth in the USA and the top 5 % own about 59 % of the wealth. Thus, the percent of income taxes paid by the upper strata is actually proportionately less than their relative wealth. This information is not typically provided by the defenders of the rich.

Note that the average income of those in the top 20 % was 15 times higher than those in the bottom 20 % in 2005. Those in the top 1 % had incomes 100 times higher than those in the bottom 20 % in 2005. In 2009, these ratios dropped somewhat since the stock and real estate investment markets were depressed after collapse of the housing bubble.

### 1.10.1.2 Estate Tax

For some considerable time prior to 2001, there was a tax of approximately 55 % on estates above an exemption amount that stood at US\$ 675,000 in 2001 (double that for couples). The Republicans campaigned against the estate tax for many years, calling it a “death tax.” (The Republicans seem particularly adept at using slogans to lure simple-minded people into their camp. For example, they have gotten poor people to vote Republican by referring to Democrats as “tax and spend” even though the Democrats represent the

**Table 1.6** Number of taxable estates by size in year 2000, prior to Bush tax cuts of 2001. The personal exemption was US\$ 675,000 (double for a couple) and the nominal tax rate was 55 %

Size of estate (\$ million)	Number of taxable estates	Average value (\$)	Average tax paid (\$)	Effective tax rate
0.6–1	18,634	847,947	41,270	4.9 %
1–2.5	23,827	1,490,693	230,238	15.4 %
2.5–5	5917	3,424,938	858,768	25.1 %
5–10	2258	6,884,752	1,950,852	28.3 %
10–20	814	13,553,285	3,608,721	26.6 %
>20	549	58,667,401	10,418,672	17.8 %

interests of the poor much more than the Republicans. Similarly, during the Second Gulf War, the Republicans have justified continuance of an illegal, unjust, expensive war in Iraq by referring to the opposition as “cut and run.”) And while a number of right-wing blogs provide you with many reasons for ending the estate tax, these tend to be beholden to the rich. The Republicans clamor for an end to the inheritance tax altogether—that would produce by far the greatest benefits for the rich. The Democrats tend to resist any reduction in the inheritance tax—which shows that they just do not understand the recent increase in the number of estates of a few million dollars due to asset bubbles. This goes back to the adage that Republicans have no heart and Democrats have no brains.

Data on taxable estates for year 2000, prior to the Bush tax cuts of 2001, are shown in Table 1.6. Note that the larger estates paid a tax rate far lower than the official rate of 55 % through use of charitable trusts and other tax-saving devices.

In 2001, the new estate tax laws pushed through the Republican Congress by President Bush provided the changes shown in Table 1.7. There have been wacky tax laws enacted as far back as history goes, but this one is clearly near the top for being weird, inconsistent, and irrational. The 2001 tax change provided for several gradual increases in the estate tax exemption together with some moderate reductions in the tax rate. The exemption rose stepwise to US\$ 3,500,000 in 2009, and then the entire inheritance tax was eliminated in year 2010. However, in 2011, the deductible reverted to US\$ 1,000,000. The reason for this is because of the so-called *Byrd Rule* that blocks any piece of legislation if it significantly increases the federal deficit beyond a 10-year term. Subsequent to this great year for dying, the estate exemption reverted back to a level comparable to that of 2010.

**Table 1.7** Schedule for estate taxes as changed by the Bush 2001 tax cuts. (<http://www.cbpp.org/cms/index.cfm?fa=view&id=2698>)

Calendar year	Estate exemption	Highest estate tax rate (%)	Stepped-up basis for inherited property
2001	US\$ 675,000	55	Yes
2002	US\$ 1,000,000	50	Yes
2003	US\$ 1,000,000	49	Yes
2004	US\$ 1,500,000	48	Yes
2005	US\$ 1,500,000	47	Yes
2006	US\$ 2,000,000	46	Yes
2007	US\$ 2,000,000	45	Yes
2008	US\$ 2,000,000	45	Yes
2009	US\$ 3,500,000	45	Yes
2010	US\$ 5,000,000	35	Yes
2010	No limit	0	No
2011	US\$ 5,000,000	35	Yes
2012	US\$ 5,120,000	35	Yes
2013	US\$ 5,250,000	40	Yes

*Thus, if you had a sizable estate and you were in ill health, you owed it your heirs to commit suicide in 2010 in order to double their inheritance (above the deductible) as compared to dying in 2011.*

Another interesting aspect of the machinations of the estate tax is that lawmakers in late 2010, chagrined about losing federal income due to zero estate tax, passed the December 2010 Tax Relief Act. In the past, it is traditional that when someone dies, the cost basis for his assets would be updated to the value at the date of his death. Thus, for example, suppose someone bought stock “A” for US\$ 1000 and held it for say, 50 years, whereupon it was worth say, US\$ 20,000. Upon his death, his heirs would acquire these assets as if the cost were US\$ 20,000 and no one would ever pay a capital gains tax on the gain from US\$ 1000 to US\$ 20,000. That is how wealthy families preserve their assets across generations. In 2010, the law was changed to give estate planners two options: either (1) pay zero inheritance tax but pay the capital gain on the change in value from purchase to death or (2) pay a regular inheritance tax but “step up” the cost basis to the date of death. After 2010, the tax rate and stepped up basis reverted to more normal levels.

With the bubbles in asset values for stocks and real estate over the past few decades, the number of estates exceeding US\$ 1,000,000 has increased remarkably. Indeed, in my hometown of South Pasadena, CA, the average price of a house is close to US\$ 1,000,000. Almost anyone who owns a house and

**Table 1.8** Effect of raising estate tax exemption

Year	Personal exemption (double per couple)	% of estates subject to estate tax	Number of estates sub- ject to estate tax
2000	US\$ 675,000	2.2 %	52,000
2003	US\$ 1,000,000	1.6 %	37,100
2006	US\$ 2,000,000	0.5 %	12,600
2009	US\$ 3,500,000	0.3 %	7100

**Table 1.9** Dependence of number of estates subject to estate tax on exemption level

Year	Personal exemption (double per couple)	Estates less than US\$ 5,000,000	Estates more than US\$ 5,000,000
2003	US\$ 1,000,000	31,900	7700
2006	US\$ 2,000,000	5100	4900

**Table 1.10** Effect of raising the estate tax exemption on farm and small business estates

Year	Personal exemption (double per couple)	Number of farm estates subject to estate tax	Number of small business estates subject to estate tax
2000	US\$ 675,000	1660	485
2006	US\$ 2,000,000	125	135
2009	US\$ 3,500,000	65	95

has been living in it for some time is a “millionaire.” In fact, the term “millionaire” is no longer anywhere near as exclusive as it was in the past. Raising the estate tax exemption would allow estates of a few million dollars to escape the estate tax, while preserving the bulk of federal revenues from large estates. The effect of raising the estate tax exemption is shown in Table 1.8. By raising the personal exemption from US\$ 675,000 to US\$ 3,500,000, more than 85 % of previously taxed estates would be eliminated from paying estate taxes, while the largest estates would remain subject to the estate tax (see Tables 1.9 and 1.10).

Taxable farm and small business estates have been a source of concern because it is claimed that estate taxes might cause them to have to liquidate these businesses. According to the Center on Budget Policy Priorities (CBPP):

Had the 2006 exemption level of \$ 2,000,000 (\$ 4,000,000 per couple) been in place in 2000, the number of taxable farm estates would have dropped by



more than 90%, and the number of taxable family-owned businesses by almost 75%. At an exemption level of \$ 3,500,000 (\$ 7,000,000 per couple), as will exist in 2009, fewer than 100 family businesses and only 65 farm estates would have paid any estate tax. The estate tax changes made so far have been well targeted, providing the bulk of the relief to smaller estates and preserving a large share of estate tax revenue. The changes in the estate tax that have taken place since 2001 have exempted many estates from tax and provided tax reductions to other estates that remain taxable. In 2006, nearly four-fifths of the benefits of these changes will go to estates valued at less than \$5 million. Further, because the changes made so far focus on raising the exemption level rather than sharply reducing the tax rate, permanent reform along these lines would preserve a large share of estate tax revenue.<sup>50</sup>

As the CBPP showed with ample data, increasing the exemption benefits the smaller estates, while decreasing the estate tax rate overwhelmingly benefits the larger estates. That is why Republicans (like Senator Jon Kyl) who represent the rich, advocate reducing the estate tax rate. The differences between permanently adopting the 2009 estate tax parameters versus total elimination of the estate tax are:

- Use of the 2009 estate tax would preserve 60% of the revenues lost by total elimination.
- 96% of benefits of total elimination of the estate tax would accrue to the largest estates.

The CBPP<sup>51</sup> wrote down a number of myths about the estate tax which have been widely circulated by wealthy Republicans, who call it a “death tax.” The CBPP then rebutted these myths and showed they were all fallacious. A brief summary of some of their rebuttals is given below:

- Only the richest 0.14% of estates pay any estate tax. It is only a “death tax” for 1 out of a 1000 wealthy families.
- The estate tax rate is not onerous. The few estates that pay any estate tax at all generally pay less than 16% of the value of the estate in tax.
- While wealthy Republicans argue that the estate tax does not take in enough revenues to affect the budget deficit, repealing the estate tax would actually increase the deficit by at least US\$ 200 billion over the next 10 years.

---

<sup>50</sup> By permission from CBPP, Friedman and Aron-Dine (2006).

<sup>51</sup> <http://www.cbpp.org/files/estatetaxmyths.pdf>.

**Table 1.11** Estate Tax Data for 2012

Size category (\$ million)	Number of taxable estates	Average value (\$ thousands)	Average tax paid (\$ thousands)	Effective tax rate (%)
0–5	0	0	0	0.0
5–10	1530	7172	526	7.3
10–20	1240	13,651	1880	13.8
>20	760	68,875	11,092	16.1
All	3530	22,699	3271	14.4

- While wealthy Republicans claim that the costs of estate tax compliance are as great as the revenues collected, the costs are actually relatively modest and are consistent with the costs of complying with other taxes.
- While wealthy Republicans claim that small, family-owned farms and businesses would be wiped out by the estate tax, only a handful of small, family-owned farms and businesses owe any estate tax at all, and virtually none of these would have to be liquidated to pay the tax.
- While wealthy Republicans claim that the estate tax constitutes “double taxation,” large estates consist to a significant degree of “unrealized” capital gains that have never been taxed; the estate tax is the only means of taxing this income. Furthermore, the heirs acquire the investments at a new basis at time of death, and **NO CAPITAL GAINS TAXES ARE EVER PAID ON THE APPRECIATION DURING THE DECEDANTS’ LIFETIME!**

Finally, we present 2012 data in Table 1.11.

### 1.10.1.3 The Alternative Minimum Tax

The AMT grew out of a minimum tax that was first enacted in 1969 to ensure that the highest-income households could not exploit loopholes, exclusions, and deductions to avoid paying any federal income tax at all. It has been claimed that this legislation was devised by the Democrats to prevent 155 extremely wealthy families from avoiding income taxes. However, as is usual with tax legislation, the rules were not planned well, and they failed to index the AMT for inflation.

The AMT provides a fixed exemption, and only applies to income above that amount. The exemption for married couples filing jointly was originally set at US\$ 40,000 in 1987 but it was not automatically indexed for inflation. It was held constant at US\$ 40,000 through 1992, was upped to US\$ 45,000 from 1993 to 2000, and then was tweaked in a series of steps after 2001. The exemption amount was increased to US\$ 49,000 for 2001, US\$ 58,000 for

2003 through 2005, and to US\$ 62,550 for 2006. However, for reasons that are difficult to fathom, the exemption for 2007 was scheduled to revert all the way back to the 2000 level: US\$ 45,000. That would have made an additional 20,000,000 taxpayers susceptible to the AMT. Had the government allowed this to happen, there would likely have been a taxpayer rebellion. The Congress was unable to deal with this impending political disaster for almost all of 2007. Finally, with great fanfare, at the eleventh hour in December of 2007, the Congress passed a 1-year band-aid patch to the AMT for 2007, raising the exemption for married couples in 2007 to US\$ 66,250, thus proclaiming a great victory. However, roughly 4,000,000 people still paid the AMT in 2007, and basically it was little different from 2006. One element that held up passage of the band-aid to the AMT was that the Democrats claimed that they wanted to raise taxes on the rich to compensate for the loss of federal revenues due to raising the AMT exemption, while the Republicans opposed this under the slogan “No new taxes.” Finally, both parties, under pressure from the populace, reluctantly agreed to band-aid the AMT for 1 year.

As the years went by, the AMT began to impact more and more taxpayers in the middle class, causing outcries of resentment. Under the AMT, a taxpayer calculates his income taxes with and without the AMT and pays the higher of the two. The AMT eliminates some deductions, exemptions, and credits, such as the deduction for state and local taxes and the personal exemptions.

The number of taxpayers who owe extra taxes due to the AMT grew over the years, reaching 4,000,000 in 2006, and would have grown to 25,000,000 in 2007 were it not for a series of 1-year “band-aid” fixes enacted at the end of each year beginning in 2007. As a result, the number of taxpayers subject to the AMT leveled off at roughly 4 million per year after 2007. This was far higher than what was originally envisaged when the AMT was created to tax the wealthiest incomes. This situation was exacerbated by the Bush tax cuts of 2001 that reduced ordinary income taxes but failed to modify the AMT. As a result, the nominal tax cuts for millions of taxpayers were more or less erased because they had to pay the AMT. To soften this blow, Congress passed some temporary increases in the exemption used to calculate the AMT, but the number of taxpayers paying the AMT still doubled from 2,000,000 to 4,000,000 from 2002 to 2006. Because about 2/3 of AMT taxes derive from elimination of deductions for state and local taxes, states with high state income taxes have the greatest number of people subject to the AMT. These states (California, New York, New Jersey, Connecticut) tend to be Democratic states and the Republican administration of 2000–2008 was not highly motivated to change the AMT. For example, President Bush’s 2004 State of the Union address did not even mention the AMT.

Finally, the American Taxpayer Relief Act of 2012 assures us that the AMT will now be annually indexed to keep pace with inflation. Nevertheless, about 4,000,000 earners will continue to pay the AMT each year.

As we pointed out previously, one of the oddities of the 2001 and 2003 tax cuts was the fact that they expired at the end of 2010. But the problem here is that the government has become so dependent on the AMT as a source of revenue that it may have difficulty reducing the impact of the AMT on middle-class wage earners, without raising taxes on the rich—which seems unlikely.

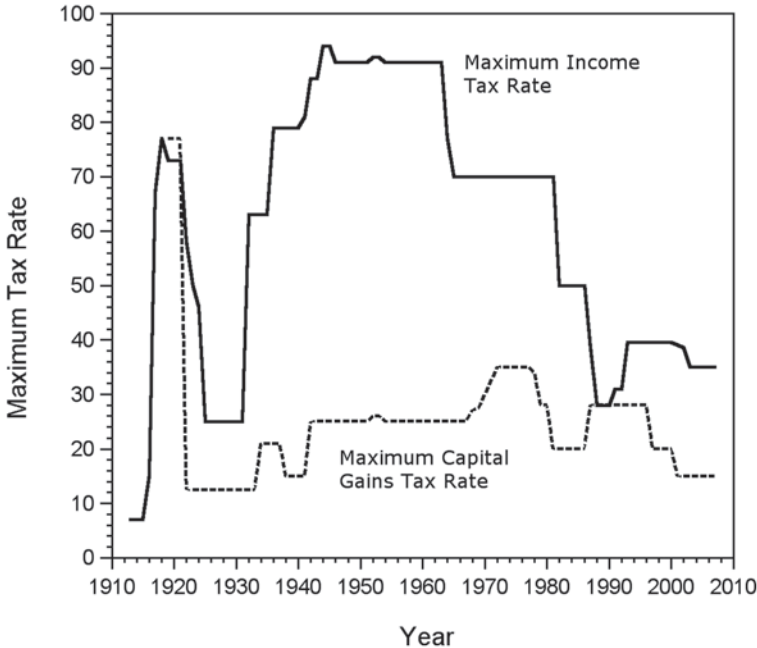
The deficits produced by the Bush tax cuts of 2001 and 2003 were made palatable in the short run by (a) excess Social Security (SS) collections that were funneled into government coffers and (b) expansion of the AMT, but they still ran up substantial deficits. The Bush tax cuts are clearly untenable for the intermediate run, and amount to a sort of Ponzi scheme for temporary tax relief for the rich while dumping on the poor and the middle class.

### 1.10.2 Income Tax Brackets and Budget Deficits

In the 1920s, there were as many as 56 income tax brackets divided by US\$ 2000 increments in earnings. Over the years, the number of brackets was gradually reduced. Today, we have only four to five brackets. Except for a 3-year period beginning in 1988, the income tax structure always provided that the tax rate was higher in each successively higher income bracket. However, from 1988 to 1990, there was an inversion (or bubble) in which medium incomes paid a higher tax rate than higher incomes.

The history of variation of the tax rate in the highest income bracket is shown in Fig. 1.12. From 1917 through 1986, a period of 70 years, the maximum income tax rate in the highest bracket was 50% or higher, except for the interval 1925–1931 when it was 25%. The low income tax rate in the late 1920s appears to have contributed to the speculative excess that led to the crash in 1929. It also helped create an inordinate number of millionaires (in 1920s dollars) and increased the divergence between the rich and the poor.

The top tax rate was more than 90% from 1944 to 1963, and was 70% or higher from 1936 through 1970. The cultural norm for much of the twentieth century was for high maximum tax rates on the higher income brackets. The tax rate in the highest bracket averaged over the twentieth century was 65%. The lowest income tax rates since 1917 prevailed from 1988 to 1992. President George Bush (senior) was roundly vilified for the increase in the maximum tax rate from 28 to 31% in 1991 and he later issued many a mea culpa for this “mistake.” Maximum income tax rates since 1988 have ranged from 30 to 40%, about half of what they were earlier in the twentieth century.



**Fig. 1.12** Income tax rate (%) in the highest income bracket for each year since 1913. Also shown is the maximum long-term capital gains tax rate. (By permission from U.S. Federal Individual Income Tax Rates History, 1913–2011. Tax Foundation. 9 September 2011)

The low maximum tax rates in the upper bracket prevailing in the late 1920s and the late twentieth century contributed to the formation and expansion of stock market bubbles.

The data on annual increases in federal debt are plotted in Fig. 1.13. It can be readily seen that the large deficits began in the 1980s when the maximum federal income tax rate was reduced.

It is claimed in a number of places that the US government ran a surplus from 1998 to 2001 and Bill Clinton has been praised for this. Figure 1.14 shows annual budget deficits and surpluses as percent of the GDP as derived from Congressional Budget Office data. The *dot.com* boom offered temporary respite from the trend of continuous budget deficits that began around 1975. However, as can be seen from Fig. 1.13, the federal debt increased during those years.

The GDP was around US\$ 11.3 trillion in the year 2000. Hence, the 2% surplus reported in Fig. 1.14 amounted to about US\$ 220 billion. This surplus included excess the social security funds collected above and beyond

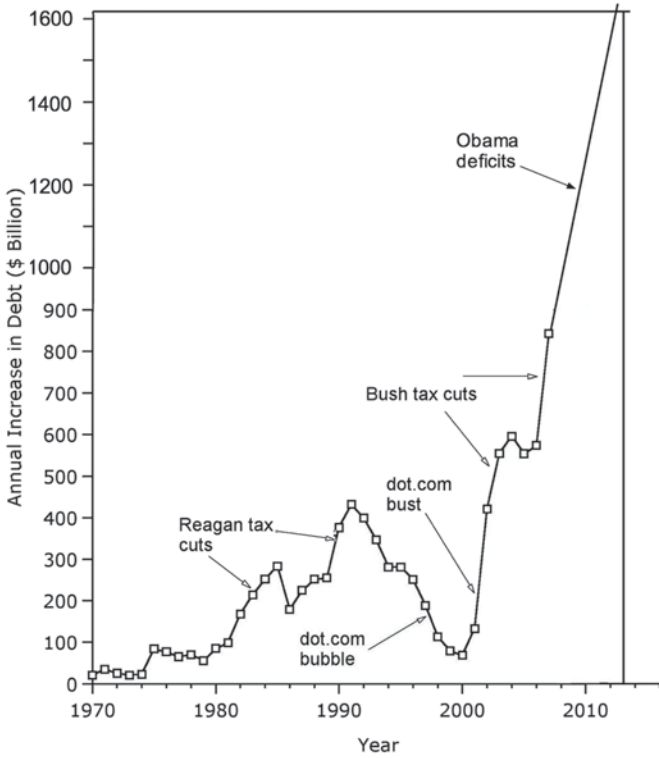


Fig. 1.13 Annual increases in federal debt. The dot.com stock market bubble artificially expanded government revenues during the late 1990s

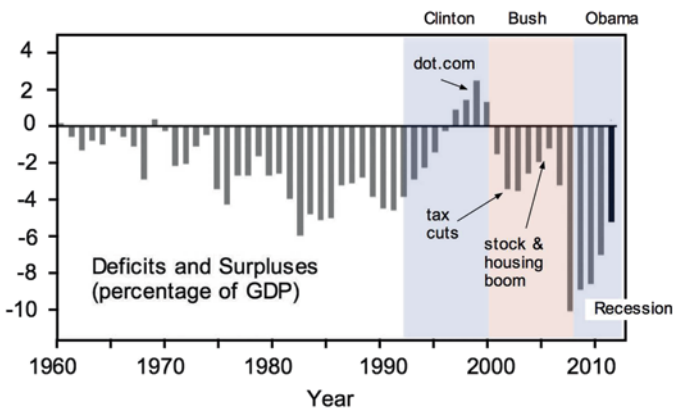


Fig. 1.14 US budget deficits and surpluses (Congressional Budget Office)

what was paid out (US\$ 132 billion in 2000). Hence, one should subtract US\$ 132 billion from the surplus shown in Fig. 1.14 before comparing with Fig. 1.13. The budget would still show a small surplus so a small disconnect remains between Figs. 1.13 and 1.14.

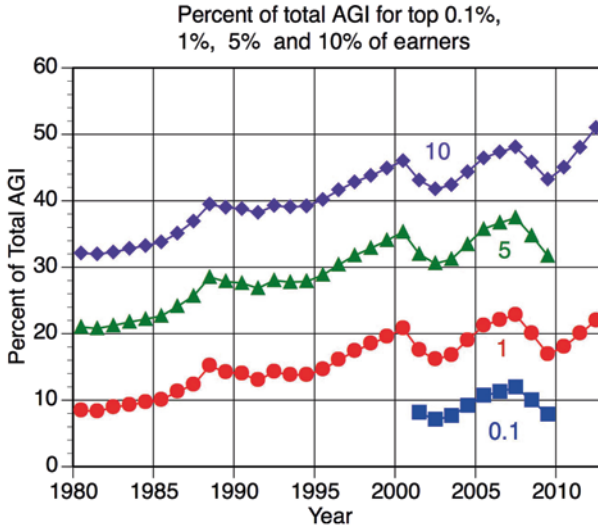
But it doesn't matter much whether there was a small surplus or a small deficit. The *dot.com* stock market bubble artificially expanded government revenues during the late 1990s. On January 7, 2009, President-Elect Obama predicted that there would be "annual trillion-dollar deficits for years to come." And as of January 2014, that prediction has been verified.

The transition to lower maximum income tax rates coincided with the rise to power of Republicans (Reagan 1981–1988, Bush (senior) 1989–1992, Bush (junior) 2001–2008). While Bill Clinton, a "centrist" Democrat, was in power from 1993–2000, the maximum tax rate underwent a moderate increase to 39.6%. The Bush tax cuts reduced it to its current level of 35%.

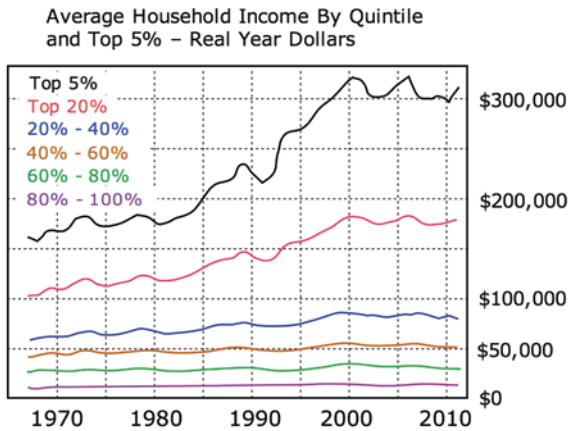
The justifications for lowering the maximum income tax rates during past decades of the twentieth century were based—at least partly—on the Republicans' claim that federal government tax receipts would actually increase because the lower tax rate would stimulate investment, leading to economic prosperity and higher tax revenues despite the lower tax rate. This claim was made in conjunction with the "trickle-down theory" that held that if we could only succeed in making the rich, rich enough, they would invest their excess funds in enterprises that would create jobs and trickle wealth down to the middle class and the poor. Actually, the policies since 1985 have produced bubbles and a trickle-up result, making the rich richer than ever while real wages have flattened out.

Aside from its effect on federal budget deficits, the lowering of maximum income tax rates (late 1920s and post-1985) benefited the rich by a large margin, produced the greatest number of superrich people, and greatly exacerbated the disparity between the rich and the poor. The "trickle-down" theory has been shown to be a myth. Figure 1.15 shows the percent of total adjusted gross income in America attributable to the top 10, 5, 1, and 0.1% of incomes. All of these curves trended upward since the Reagan administration, indicating that since 1980, the share of total income by top earners has increased significantly. Currently, the top 10% of earners account for more than 50% of total earnings. The top 1% of earners account for more than 20% of total earnings. And the top 0.1% of earners account for about 10% of earnings.

Figure 1.16 shows the average household income of the five quintiles of income plus the top 5%. In the lower brackets, incomes have risen very slowly, whereas in the top 5% they quadrupled since 1980. The incomes of the lower quintiles are buried at the bottom of this graph. According to DCJ, the aver-



**Fig. 1.15** The disparity of income in America. Percent of total adjusted gross income (AGI) for top 10, 5, 1, and 0.1% of incomes. (By permission from U.S. Federal Individual Income Tax Rates History, 1913–2011. Tax Foundation. 9 September 2011)



**Fig. 1.16** Average household income (real year dollars) for the five quintiles of income and the top 5%. (By permission from Advisor Perspectives, Doug Short, U.S. Household Incomes: A 44-Year Perspective, September 18, 2012, <http://www.advisor-perspectives.com/dshort/updates/Household-Income-Distribution.php>)

age family today works 20 more weeks of paid labor than in 1975, and the wages and salaries of 99% of Americans stagnated or declined from 1973 to 1997. To the degree that there was prosperity, it was based mainly on asset bubbles in stocks and real estate, rather than wages.



**Table 1.12** % of total stock owned by various wealth classes as of 2005. (By permission from Wolff 2007)

Wealth class	Percent of total stock owned	Cumulative % of stock owned
Upper 1 %	37	37
Next 4 %	29	65
Next 5 %	14	79
Next 10 %	12	91
Next 20 %	7	98
Next 20 %	2	99
Bottom 40 %	1	100

### 1.10.3 Capital Gains

Historically, the capital gains tax rate has almost always been far lower than the ordinary income tax rate, as shown in Fig. 1.12. Most recently, President Bush triumphantly pushed through a reduction of the capital gains tax rate from 20 to 15 % in 2001 based on the claim that it would foster investment to promote business, whereas all it did was aid and abet bubble formation. The rhetoric that accompanied this move was centered on the notion that a capital gains rate as high as 20 % would bring ruinous collapse of the economy.

The Internet is full of learned articles by economists, typically in the employ of right-wing *think tanks*, that “prove” that lower capital gains taxes stimulate the economy and produce prosperity for all. There are even articles that purport to show that the 12.5 % rate prevailing in the late 1920s did not contribute to rampant speculation. The standard explanation is that a lower capital gains tax encourages investment in companies and this encourages them to expand, leading to a more robust economy. This might be true to a small degree at first, but the reality is that as investors invest, stock prices rise, and speculators very quickly take over the markets buying stocks, not because they feel that a company has value, but rather with the intent to turn over their stocks to a new investor at a higher price. Thus, a lower capital gains tax fosters bubble formation. Furthermore, since wealthier people own a disproportionate share of stocks, they profit the most from a lower capital gains tax.

As Edward N. Wolff (ENW) has shown,<sup>52</sup> the rich in America own most of the assets susceptible to capital gains. Table 1.12 shows the distribution of stock ownership by wealth class. The upper 5 % of households owns 65 % of stocks and the upper 10 % owns 79 % of all stocks. The bottom 80 % of households owns 10 % of the stocks.

<sup>52</sup> A recent publication is Wolff (2007).

According to ENW, in 2004, the top 10 % of households owned 80 % of nonhome real estate and 90 % of the total value of stock shares, bonds, trusts, and business equity.

While many economists argue that a low capital gains tax rate encourages business investment and enhances prosperity, that seems to be a conclusion based on classical economics assuming rational markets. However, in an era dominated by booms and bubbles, where investment in stocks and real estate are not made primarily for business expansion, but rather for speculation to turn over to a new buyer on the manic upward boom, the main effect of low capital gains tax rates seems to be encouragement of speculation, feeding the bubbles and manias, and more profits for the rich. The *L. A. Times* (1/10/09) reported that the top 0.1 % of incomes accounted for 50 % of the capital gains earnings, and the top 5 % of incomes accounted for 90 % of capital gains earnings.

The imbalanced distribution of stock assets has persisted over time. Over the past 25 years, the wealthiest 1 % of households never held less than one-third of all stock wealth, and the top fifth of households consistently held about 90 % of stock wealth, leaving approximately 10 % for the bottom four-fifths of households. These data include stocks held in pension plans and retirement accounts. If we restrict our attention to shares held outside of pension plans and retirement accounts, the data are even more extreme. In 2010, only 22 % of the population held stocks outside of pension plans and retirement accounts and only 14 % had more than US\$ 10,000 invested in such accounts.

#### 1.10.4 SS and Medicare

In 1983, a study led by Alan Greenspan concluded that the SS system would start running in the red in 31 years (2014) and that fundamental changes were needed to keep SS solvent. (Of course, Greenspan was mistaken, as he has been on most issues). Since then, the future demise of SS has been a recurring theme of Republicans. This seems strange in some ways because one might think that the Republicans would prefer a regressive tax on lower incomes that exempts the rich, although they may principally resent the employers' contributions, as well as Medicare—which has no earnings cap. Currently, in 2013, there are predictions that SS will run out of money in 2031. The fact is that SS need not ever go bankrupt. All we have to do is raise the SS tax as the population ages. However, this will create an economic burden. Nevertheless, it will be necessary.

As a result of the Greenspan study, the Democrats became concerned about the future of SS, and decided that the answer was to collect more than was

paid out, and invest the surplus into a *SS trust fund* that would supposedly be available in to cover future shortfalls. The excess of collections over payouts started modestly but built up substantially as the years went by. However, the Democrats were not unanimous; Senator Moynihan called it “thievery.” According to DCJ, from 1984 to 2002, Americans paid in to SS US\$ 1.7 trillion more than they received in benefits. This supposedly went into the *trust fund*. Since then, the amount of money in the *SS trust fund* has been reappraised by a number of observers, including President George W. Bush, who mentioned the figure US\$ 2.6 trillion in a 2001 State of the Union address, although it appears that the proper value may have been only about US\$ 2 trillion at the end of 2006.

Various politicians have provided assurances to the public regarding the trust fund at various times. President Bush said in his 2001 State of the Union address:

To make sure the retirement savings of America’s seniors are not diverted in any other program, my budget protects all \$ 2.6 trillion of the Social Security surplus for Social Security, and for Social Security alone.

However, there is a great deal of confusion about this *trust fund*, and Mr. Bush did not appear to understand it in 2001. The notion of a *SS trust fund* is not simple. Nevertheless, there are several websites that explain the matter fairly well.

The *SS trust fund* is not a trust fund in the usual sense. In an ordinary trust, the trust funds are separate and distinct, and are typically invested for the benefit of the beneficiaries (in the case of SS, the public). However, the 1935 SS law requires that the SS trust funds be “invested in US Government securities.” Because trust fund securities are themselves federal securities, they are essentially IOUs that the government has made out to itself, and they do not necessarily increase its ability to pay benefits. These funds get lost in the federal government’s coffers, and the only obligation to the SS system is the memory (easily forgotten) that in some distant unspecified future, the Federal Government owes these funds specifically to SS. Some defenders of the present system point out that by diverting excess SS funds into the general coffers, they help reduce the federal deficit, making it easier in the future to repay the SS trust fund. But the only way that the federal government can repay those funds in the future is by raising taxes, and that does not seem to be politically viable.

A few years after President George W. Bush promised to put a “lock box” on the *SS trust fund*, he contradicted himself by saying,

Every dime that goes in [to Social Security] from payroll taxes is spent. It's spent on retirees, and if there's excess, it's spent on government programs. The only thing that Social Security has is a pile of IOUs from one part of the government to the next.

The money-payroll taxes going into Social Security are spent. They're spent on benefits and they're spent on government programs. There is no trust.

That "there is no trust" in Mr. Bush was widely agreed upon. On the other hand, the SS *trust fund* seems to be included in some versions of the federal debt.

SS taxes are divided into two parts. The contribution to Medicare is 1.45% and is applicable to all wages without a cap. Wages above US\$ 200,000/yr are taxed at 2.35%. The regular SS tax is 6.2% of wages but this is only charged up to a cap that was US\$ 117,000 in 2014. Wages above the cap do not pay the 6.2%. Thus, the total of SS tax and Medicare tax is 7.65% of wages up to the cap, and this is matched by an employer's contribution. For earnings above US\$ 200,000/yr, the Medicare tax includes an additional 0.9% but employers do not match this.

For 2011 and 2012 only, the employee's tax rate for SS was lowered to 4.2%, while the employer's rate remained unchanged at 6.2%. This put additional pressure on maintaining a future fiscal balance for SS.

In essence, the excess collections for SS are just another tax on the people to provide funds to run the government. But this is a very retrogressive tax, for it begins on the first dollar of earnings, and remains constant up to a fixed cap, while the rich pay no SS tax on almost all of their income (i.e., the portion of their wages greater than the cap, plus 100% of capital gains, dividends and other income). The SS tax is an income redistribution plan in which the poor receive more than they put in. The rich are protected because no capital gains, dividends or other income, or wages above the cap are subject to the SS tax. By transferring funds from the middle class to the poor, the rich open up new markets for their products. The percentage of income paid to SS by a person with a high income is small. The cost of SS is born mainly by the middle class because they pay 6.2% up to a cap that was US\$ 117,000 in 2014 (US\$ 113,700 in 2013).

When SS and Medicare charges are added to the regular income tax brackets, the result is as shown in Table 1.13. The effect of adding SS and Medicare charges to the income tax rate (in 2013) is that single incomes in the range US\$ 36,250 to US\$ 113,700 paid a higher total rate than incomes from US\$ 113,700 to US\$ 183,250 and single incomes in the range US\$ 87,850 to US\$ 113,700 paid a higher total rate than incomes from US\$ 113,700 to US\$ 398,350. Overall, the effect of SS tends to equalize tax rates for incomes

**Table 1.13** Comparison of total tax brackets for single filers when SS and Medicare are added to income tax

2013 income greater than	Income tax rate (%)	Income tax + Social Security + Medicare (%)
US\$ 0	10	17.65
US\$ 8925	15	22.65
US\$ 36,250	25	32.65
US\$ 87,850	28	35.65
US\$ 113,700	28	29.45
US\$ 183,250	33	34.45
US\$ 200,000	33	36.15
US\$ 398,350	35	38.25
US\$ 400,000	39.6	41.40

more than US\$ 36,250. More importantly, the low taxes on capital gains and dividends amplify the differential between rich and poor. One rather weird idiosyncrasy of the tax rate schedule for 2013 is that the bracket that pays 35% was a narrow slice of incomes from US\$ 398,350 to US\$ 400,000. Whoever devised that arrangement ought to be subjected to a mental test.

Since the excess collection of SS funds coincided in time with large tax reductions for the rich, and the net effect of the excess SS collections was to reduce the deficit produced by the tax reductions for the rich, we must conclude that the excess SS collections acted as an anti-Robin Hood scheme to rob from the poor and pay the rich. According to DCJ, the bite from SS is greater than that from income tax for 75% of Americans.<sup>53</sup>

Robert Shiller<sup>54</sup> suggested that the design of SS should be improved. He began by affirming what SS should not do: it should not invest the SS trust funds in the stock market, as that would inject excessive risk and uncertainty into the system. However, he treated the SS trust funds as if they were real and tangible and it seems doubtful that such funds actually exist, except as paper notations on spreadsheets. If the SS System elected to invest, say, US\$ 1 trillion of its trust funds into the stock market, where would that money come from?

Shiller recommended against SS funds in the stock market, but instead suggested that the SS tax rate and the payout rate could be made flexible to vary with economic conditions. He suggested that “contribution rates and benefit rates should vary over time depending on the relative needs of workers and retirees,” depending on the CPI and per capita national income.

<sup>53</sup> Johnston (2003).

<sup>54</sup> Shiller (2005).

He seemed to be saying that contribution and benefit rates should be flexible, and should be periodically adjusted to keep the system solvent. This seems a bit naive. Projections for the future are unidirectional; the population is getting older. The cost of operating SS is going up. The only way to keep a balance for the future is to increase contributions, preferably by raising the cap on income and by taxing all income, not just wages.

Republicans hate SS. As we stated previously, this seems strange because one might think that the Republicans would prefer a regressive tax that primarily taxes lower- and middle-class incomes and exempts the rich. Republicans provide a continual barrage of warnings that SS is going broke and Democrats have wrung their hands and waffled in response. Most of these projections assume minimal increases in the SS tax. However, as the population ages, there seems little doubt that SS taxes will have to increase. What is rarely mentioned is that if the SS tax were applied to all income (not just wages under a cap) it would easily provide for future needs.

## 1.11 Inequality

### 1.11.1 Why Inequality Persists and Expands

JKG<sup>55</sup> commented at considerable length on inequality between the rich and the poor. He pointed out that over the years, few topics have generated more controversy than the proposition that “the rich should by one device or another share their wealth with those who are not.” With tongue in cheek, he mentioned rather sardonically that “the rich are opposed” to such a proposition for many and varied reasons, which ultimately boil down to their (natural) unwillingness to give up their advantages. In the same rather dry tone, JKG mentioned blandly that the poor favor greater equality.

A great source of consternation and puzzlement has always been the question: Since there are many more poor than rich, why don't the poor just tax the rich heavily and reduce the inequality? One can imagine several contributing factors as to why this has not happened, but none of these alone or even taken together provides a satisfactory explanation. These factors are (in no particular order):

- a. The poor tend to be politically disorganized and are unable to marshal their forces into a concerted effort to soak the rich.
- b. The media are controlled by the rich, and they propagandize the poor, browbeating them into believing that the rich deserve to be rich.

---

<sup>55</sup> Galbraith (1958–1998).

- c. The various political legislatures and executives have mostly above-average income and assets, and are beholden to the rich. They are prone to pass legislation favorable to the rich.
- d. The poor are afraid that if they embarked on a “soak the rich” campaign they would suffer persecution in one form or another.
- e. The Supreme Court, being subservient to the rich, would nullify it anyway.
- f. The poor are in awe of the rich and admire them too much to tax them.
- g. The rise and expansion of the middle class has diluted the influence of the poor. Members of the middle class likely harbor hopes that they or their children might one day become rich.

To this list, JKG’s point must be added:

In the US the poor have reacted sympathetically to the cries of pain of the rich over their taxes.

There are many defenders of inequality, historically, as well as in the present. The Internet is full of websites that justify the wealth of the rich. JKG provided a summary of their arguments in defense of inequality:

- a. There is a deep-rooted cultural belief that what a man lawfully earns or receives is rightfully his. This is regarded as an inalienable right akin to “life, liberty and the pursuit of happiness.”
- b. Tampering with the system that allows the rich to hold on to their assets would break down the economic system, lead to chaos, and make things worse for everyone.
- c. Allowing the rich to remain rich provides an incentive for all people to strive to get ahead.
- d. The rich provide support for education and the arts.
- e. It would be very monotonous and boring if we all had the same income.
- f. The rich are needed for capital formation and investments. Having large concentrated blocks of money allows efficient investment.
- g. Equality raises the specter of communism and atheism.

According to JKG, the liberal attitude toward inequality has consisted mainly of uttering platitudes with only minor action. JKG summarized the liberal view: “It is terribly uncouth to soak the rich.” Meanwhile, as JKG pointed out, the rich continue to get richer, and this has become exacerbated in the decades since JKG wrote his books.

The rich have outmaneuvered the liberals using clever political tactics. The religious conservatives in America, as typified by the Southern Baptists and a

wide swath of Protestants in the Midwest place social issues such as antiabortion and antigay rights at the top of their agendas. Their underlying motivation seems to be an antagonism toward the sexual freedom that has developed in our culture over the past several decades, and their antagonism to abortion seems to be vested more in the hope of making sex more problematic than in preserving lives. In fact, they have committed murder to prevent abortion. Nevertheless, regardless of their motivations, they have been co-opted by the Republican Party, which primarily represents the rich, and together have created a formidable political machine composed of strange bedfellows (not literally). Strange indeed, considering that many of the Southern Baptists have modest incomes, yet they have aligned with the party of the rich because it panders to their reactionary social attitudes.

In the nineteenth century and the first half of the twentieth century, the topic of inequality was discussed widely. Ending or reducing inequality was a prime motivating factor in the emergence of communism and socialism. As JKG pointed out, “the decline of interest in inequality cannot be explained by the triumph of equality” for the divergence between the rich and the poor in America is higher today than it was even in the roaring 1920s, and the trend continues toward increasing the gap between rich and poor. Much of this divergence is due to the changes in the income tax structure that have been enacted primarily by Republicans but often with complicity by Democrats.

JKG offered several reasons why inequality has faded out as an issue:

- a. Inequality has not produced the kinds of violent reactions predicted in the past. (However, this seems to merely say that the reason inequality has faded is because it has faded.)
- b. As time went by, we found that envy tends to be localized; perhaps we tend to envy our neighbor’s new luxury vehicle, but not the wealth of an unseen billionaire in some remote location.
- c. A more credible point made by JKG is that in the past, the rich were directly involved in the corporations that employed the poor and the middle class. Today, the rich are mostly separated from the corporations, and the class struggle, to the small degree that it remains, is between the poor and the corporations, not between the poor and the rich.

The fading of inequality as an issue might also be tied to the rise of a large middle class, and the general and widespread disillusionment with communism and socialism in the world.

JKG concluded that that the ancient “question of whether the rich are too rich remains irresolvable.”



Delamaide said,<sup>56</sup>

They [Bankers] believe that man should be free to earn, to save, and to invest his money. Self-interest motivates the market place that magically allocates resources in the most efficient manner. Wealth is created. The rich get richer, but so do the poor, which does not exclude their getting relatively poorer.

Paul Krugman wrote an article that sheds some light on recent factors that promote inequality.<sup>57</sup> Krugman compared GM in its heyday with Apple Computer today. At its peak, GM employed one percent of the workforce. The price of a car was directly tied to the cost of producing it. Apple employs less than 0.05 % of our workers. Part of this is due to outsourcing all its production overseas. But the main reason is that the price of an Apple product “is disconnected from the cost of producing the gadget. Apple simply charges what the traffic will bear, and given the strength of its market position, the traffic will bear a lot.” Krugman called this charging “rent.” He raised the question:

Since profits are high while borrowing costs are low, why aren't we seeing a boom in business investment?

Krugman's answer to this question was:

Rising profits reflect rents, not returns on investment. A monopolist can, after all, be highly profitable yet see no good reason to expand its productive capacity. And Apple again provides a case in point: It is hugely profitable, yet it's sitting on a giant pile of cash, which it evidently sees no need to reinvest in its business.

He then concluded: “Rising monopoly rents...had the effect of simultaneously depressing both wages and the perceived return on investment.” Thus, “...household income and hence household spending is held down because labor gets an ever-smaller share of national income, while corporations, despite soaring profits, have little incentive to invest,” resulting in “persistently depressed demand.”

Whereas in the past, some economists justified inequality, as being “driven by a growing premium on skill,” Krugman argued “since around 2000, the big story has, instead, been one of a sharp shift in the distribution of income away from wages in general, and toward profits.” In other words, there has been a

---

<sup>56</sup> Delamaide (1984).

<sup>57</sup> [http://www.nytimes.com/2013/06/21/opinion/krugman-profits-without-production.html?\\_r=0](http://www.nytimes.com/2013/06/21/opinion/krugman-profits-without-production.html?_r=0).

shift away from wages to capital gains and a bubble economy. Since the rich own an inordinate share of corporate profits and capital gains, the result has been an increase in inequality.

## 1.11.2 Inequality of Wealth and Income in the USA

### 1.11.2.1 Inequality of Wealth

ENW<sup>58</sup> wrote a number of books, reports, and papers on wealth in households in the USA. He pointed out that whereas most studies that dealt with the distribution of *well-being* concentrated on the distribution of income, there are a number of reasons why family wealth (assets) may be a better indicator of *well-being*. As ENW showed, “the only segment of the population that experienced large gains in wealth since 1983 is the richest 20 % of households.”

ENW used the term *wealth* in the limited sense as marketable wealth (or net worth), defined as the value of all marketable assets less debts. Net worth is thus (assets–liabilities). Total assets include: (1) owner-occupied housing, (2) other real estate, (3) cash and bank deposits, (4) bonds and other financial securities, (5) cash surrender value of life insurance and pension plans, (6) corporate stock and mutual funds, (7) equity in businesses, and (8) equity in trust funds. Liabilities include: (a) mortgage debt, (b) consumer debt, and (c) other debt.

ENW did not include consumer durables such as automobiles, televisions and furniture in *wealth*, because these items are not easily marketed. As he said: “their resale value typically far understates the value of their consumption services to the household.” But that seems illogical because it is not *wealth* so much as *well-being* that we are interested in, and having such assets improves one’s well-being even if it is not marketable. If these assets had to be replaced, the replacement cost would severely impact one’s *well-being*. ENW also excluded the value of future social security and retirement benefits from private pension plans because they cannot be marketed. But such funds significantly improve one’s *well-being*, even if they are not immediately accessible.

ENW also used a concept of *nonhome wealth* that omits the value of the domicile in which a family lives because a residence is not very liquid, and besides, one has to live somewhere. However, owning a more valuable house typically adds to one’s *well-being*.

In comparing income and wealth over many years, one typically puts all years on a comparable basis by correcting for inflation with a CPI deflator.

<sup>58</sup> By permission from Wolff (2010).

**Table 1.14** Percentage share of total wealth. (ENW)

Year	Top 1 %	Next 4 %	Next 5 %	Next 10 %	Top 20 %	Next 20 %	Next 20 %	Bottom 40 %
1962	33.4	21.2	12.4	14.0	81.0	13.4	5.4	0.2
1969	34.4	20.3	14.0	12.0	80.7	12.8	4.9	1.5
1983	33.8	22.3	12.1	13.1	81.3	12.6	5.2	0.9
1989	37.4	21.6	11.6	13.0	83.5	12.3	4.8	-0.7
1992	37.2	22.8	11.8	12.0	83.8	11.5	4.4	0.4
1995	38.5	21.8	11.5	12.1	83.9	11.4	4.5	0.2
1998	38.1	21.3	11.5	12.5	83.4	11.9	4.5	0.2
2001	33.4	25.8	12.3	12.9	84.4	11.3	3.9	0.3
2004	34.3	24.6	12.3	13.4	84.7	11.3	3.8	0.2
2007	34.6	27.3	11.2	12.0	85.0	10.9	4.0	0.2
2010	35.4	27.7	13.6	12.2	88.9	9.4	2.6	-0.9

ENW discussed pros and cons of different indices; he used the standard CPI-U deflator.

ENW estimated the distribution of wealth and income in the USA for 2004. These figures show that net worth was concentrated in the rich, with the top 1 % owning 35 % of national net worth and the top 10 % owning 73 % of national net worth. The bottom 40 % had essentially no net worth. The figures are even more extreme for nonhouse net worth because poorer people tend to have most of their assets invested in their residences. The distribution of income is not so extreme, but still peaked near the top. Evidently, the rich manage to own almost everything but do not pay taxes on a proportionate share of income.

The changes in net wealth from 1983 to 2004 were concentrated toward the top of the distribution. Over this time period, the top 10 % of households accounted for 77 % of the gain in total wealth, 86 % of the gain in nonresidential wealth, and 76 % of the gain in income. The bottom 60 % had essentially no gain in wealth and a very minor gain in income.

In 2012, ENW updated his results with new data.<sup>59</sup> Table 1.14 traces out the history of the percentage share of total wealth in America among various wealth classes from 1962 to 2010. The top 1 % owned between 33 and 38 % of the total wealth in America over this time period. These data include the value of the homes people own. Data on nonhome wealth are given in Table 1.15. The top 1 % owned between 38 and 47 % of the nonhome wealth

<sup>59</sup> By permission from Wolff (2012).

**Table 1.15** Percentage share of nonhome wealth. (ENW)

Year	Top 1 %	Next 4 %	Next 5 %	Next 10 %	Top 20 %	Next 20 %	Next 20 %	Bottom 40 %
1962	39.5	22.4	15.0	9.2	86.1	9.5	3.3	1.1
1969	38.4	20.3	19.3	6.7	84.7	10.3	3.6	1.5
1983	42.9	25.1	12.3	11.0	91.3	7.9	1.7	-0.9
1989	46.9	23.9	11.6	11.0	93.4	7.4	1.7	-2.5
1992	45.6	25.0	11.5	10.2	92.3	7.3	1.5	-1.1
1995	47.2	24.6	11.2	10.1	93.0	6.9	1.4	-1.3
1998	47.3	21.0	11.4	11.2	90.9	8.3	1.9	-1.1
2001	39.7	27.8	12.3	11.4	91.3	7.8	1.7	-0.7
2004	42.2	26.7	12.0	11.6	92.5	7.3	1.2	-1.1
2007	42.7	29.3	10.9	10.1	93.0	6.8	1.3	-1.0
2010	42.1	29.6	13.2	10.5	95.4	5.6	0.7	-1.6

**Table 1.16** Mean wealth holdings by wealth class, 1983–2010 (1000s of 2010 dollars). (ENW)

Year	Top 1 %	Next 4 %	Next 5 %	Next 10 %	Top 20 %	Next 20 %	Next 20 %	Bottom 40 %
Net worth (1000s of 2010 dollars)								
1983	9599	1588	691	373	1157	179	74.2	6.3
2010	16,439	3192	1263	567	2062	217	61	-11
% change	71	101	83	52	78	21	-18	-270
% of gain	38	36	16	11	101	4	-2	-4
Nonhome wealth (1000s of 2010 dollars)								
1983	8276	1212	474	212	881	76	16	-4
2010	15,172	2662	950	379	1720	101	12	-15
% change	83	120	101	78	95	32	-26	-
% of gain	41	35	14	10	100	3	-1	-3

in America over this time period. The top 20 % owned 85 to 95 % of the non-home wealth in America over this time period, and as of 2010 the 95 % figure applied. The bottom 40 % owned essentially none of the wealth in America.

Table 1.16 shows the mean wealth holdings by wealth class. The top tiers have greatly increased their wealth from 1983 to 2010 while the lowest tiers have lost. Table 1.17 breaks down assets into various categories within investment assets and personal assets. As ENW summarized,

**Table 1.17** % of total assets held by wealth class (2010). (ENW)

	Top 1 %	Next 9 %	Top 10 %	Bottom 90 %
Investment assets				
Stocks and mutual funds	48.8	42.5	91.3	8.6
Financial securities	64.4	29.5	93.9	6.1
Trusts	38.0	43.0	81	19.0
Business equity	61.4	30.5	91.9	8.1
Nonhome real estate	35.5	43.6	79.1	20.9
Personal assets				
Principal residence	9.2	31.0	40.2	59.8
Deposits	28.1	42.5	70.6	29.5
Life insurance	20.6	34.1	54.7	45.3
Pension accounts	15.4	50.2	65.6	34.5
Total debt	5.9	21.6	27.5	72.5

In 2010 the richest one percent of households held about half of all outstanding stock, financial securities, trust equity, and business equity, and 36% of non-home real estate. The top 10% of families as a group accounted for about 85 to 90% of stock shares, bonds, trusts, business equity, and non-home real estate. Moreover, despite the fact that 47% of households owned stock shares either directly or indirectly through mutual funds, trusts, or various pension accounts, the richest 10% of households accounted for 81% of the total value of these stocks.... In contrast, owner-occupied housing, deposits, life insurance, and pension accounts were more evenly distributed among households. The bottom 90% of households accounted for 60% of the value of owner-occupied housing, 30% of deposits, 45% of life insurance cash value, and 35% of the value of pension accounts. Debt was the most evenly distributed component of household wealth, with the bottom 90% of households responsible for 73% of total indebtedness.

### 1.11.2.2 Inequality of Income

ENW also provided data on incomes by income classes. Table 1.18 compares data from 1982 with that for 2009. The top 1% had a mean income of US\$ 827,000 in 1982, rising to US\$ 1,318,00 in 2009, a gain of 59.4%. The top 20% had a mean gain of 35.4%, whereas the bottom 60% had a negative gain.

Emmanuel Saez published a number of reports on the disparity of wealth and income in the U SA.<sup>60</sup> He said,

<sup>60</sup> By permission from Saez (2012).

**Table 1.18** Mean income by income class, 1982 and 2010 (thousands of 2010 dollars). (ENW)

	Top 1 %	Next 4 %	Next 5 %	Next 10 %	Top 20 %	Next 20 %	3rd 20 %	Bottom 40 %
1982	827.1	213.7	132.7	99.6	167.1	69.7	45.6	19.9
2009	1318.2	317.2	164.0	112.0	226.2	72.0	41.7	17.3
% change	59.4	48.4	23.6	12.5	35.4	3.3	-8.4	-12.9

Efforts at analyzing long-term trends are often hampered by a lack of good data. In the United States, and most other countries, household income surveys virtually did not exist prior to 1960. The only data source consistently available on a long-run basis is tax data. The U.S. government has published detailed statistics on income reported for tax purposes since 1913, when the modern federal income tax started. These statistics report the number of taxpayers and their total income and tax liability for a large number of income brackets. Combining these data with population census data and aggregate income sources, one can estimate the share of total personal income accruing to various upper-income groups, such as the top 10 % or top 1 %.

We define income as the sum of all income components reported on tax returns (wages and salaries, pensions received, profits from businesses, capital income such as dividends, interest, or rents, and realized capital gains) before individual income taxes. We exclude government transfers such as Social Security retirement benefits or unemployment compensation benefits from our income definition. Non-taxable fringe benefits such as employer provided health insurance is also excluded from our income definition. Therefore, our income measure is defined as cash market income before individual income taxes.

Saez presented the data shown in Figs. 1.17 and 1.18. Figure 1.17 shows the percent of total US income attributable to the top 10 % of earners. This quantity ran up in the 1920s to more than 45 % and then dropped off rapidly to about 33 % for many years. Starting around 1978, it started climbing again, reaching the mid-40 % range around the turn of the twenty-first century. It is clear that the relative proportion of earnings of the top 10 % is inversely proportional to the income tax rate in the top bracket. As Fig. 1.18 shows, it was mainly the changes in the top 1 % of earners that drove the pattern of the top 10 % shown in Fig. 1.17.

These figures show that at present, the top 1 % of earners account for about 20 % of all the earnings in the USA, the top 10 % accounts for about 47 % of all the earnings in the USA, and these proportions of total earnings attributable to the highest earners are very sensitively inverse to the income tax rate in the highest bracket.

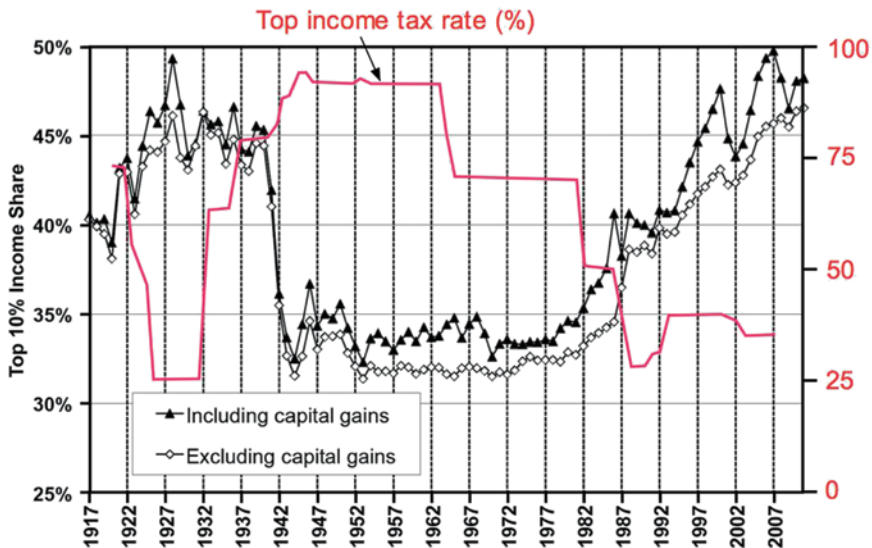


Fig. 1.17 The top ten percent share of US total income (1917–2011)

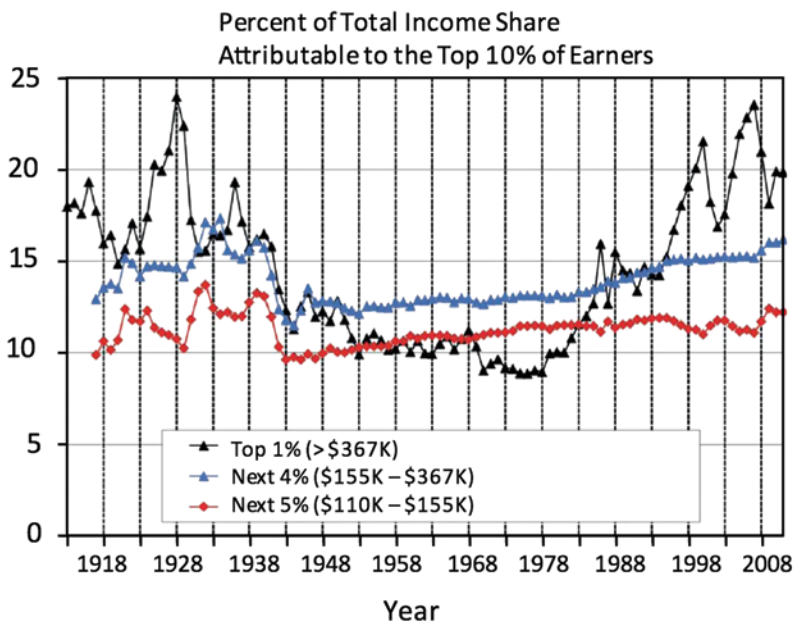
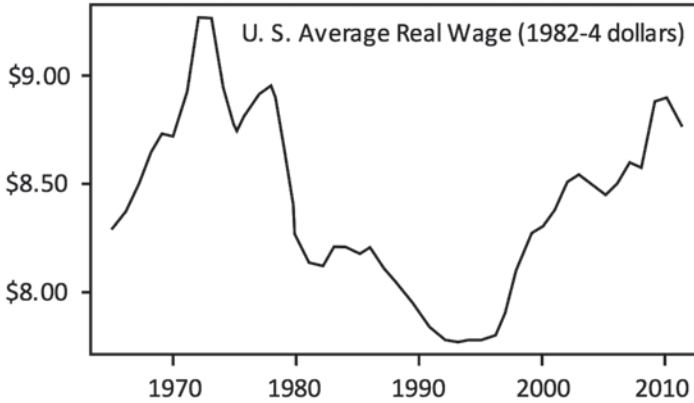


Fig. 1.18 Decomposing the top ten percent of US income share into three groups, 1913–2011



**Fig. 1.19** US average real wage (1982–1984 dollars). (Economic Report of the President, 2011 <http://www.cavefox.com/2013/02/us-historical-real-wage.html>)

In September 2013, Paul Krugman said,<sup>61</sup>

IRS figures compiled by economists indicate that 95 % of the gains from economic recovery since 2009 have gone to the top 1 %. Plus, more than 60 % of the gains went to the top 0.1 %, people with annual incomes of more than \$1.9 million.

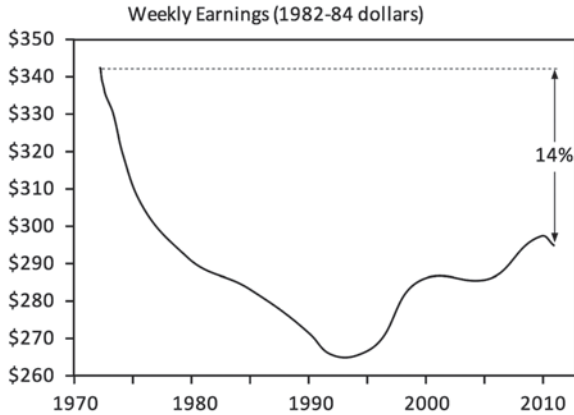
Figure 1.19 shows real weekly wages of production and nonsupervisory workers. This covers 62 % of the entire workforce and 80 % of the nongovernment workforce, focusing on average workers and excluding high-salary workers. Use of hourly real wages is better than weekly wages because it takes out the impact of varying hours worked per week over the years. Nevertheless, data on real weekly earnings (1982–1984 dollars) reveal “we have had 39 straight years where real wages have yet to get back to their 1972 peak and, indeed, they are a long way from that peak still. This is doubly surprising when we consider that productivity has been increasing steadily throughout that period, approximately doubling from 1970 to 2011” See Fig. 1.20 (and Fig. 1.8).<sup>62</sup>

The number of American billionaires was relatively constant at around 13 from 1982 to 1985. After 1985, one estimate indicates that the number of billionaires increased almost linearly by about 17 per year, bringing the total to about 100 billionaires in 1990. Various estimates suggest that the number of American billionaires had grown to between 300 and 400 in 2007. *Forbes*

<sup>61</sup> [http://www.moneynews.com/Economy/Krugman-inequality-education-wealth/2013/09/13/id/525546?ns\\_mail\\_uid=54323364&ns\\_mail\\_job=1537524\\_09132013&promo\\_code=14DEC-1](http://www.moneynews.com/Economy/Krugman-inequality-education-wealth/2013/09/13/id/525546?ns_mail_uid=54323364&ns_mail_job=1537524_09132013&promo_code=14DEC-1).

<sup>62</sup> <http://www.cavefox.com/2013/02/us-historical-real-wage.html>.





**Fig. 1.20** US average real weekly earnings (1982–1984 dollars). (Economic Report of the President, 2011 <http://www.cavefox.com/2013/02/us-historical-real-wage.html> -or- <http://www.middleclasspoliticeconomist.com/2012/03/basics-real-wages-remain-below-their.html>)

*Magazine* currently listed 425 specific Americans with assets exceeding one billion dollars.<sup>63</sup>

During the period 1983–2007, the number of households with net worth exceeding one, five, or ten million dollars increased substantially, as shown in Table 1.19. Most of this was due to inflated stock and real estate assets. The US\$1 million column was greatly inflated by the real estate bubble that pushed many households over the US\$ 1 million mark. However, the number of households over the US\$ 1 million mark plummeted in 2008 when the housing bubble popped.

### 1.11.3 Global Inequality

This section is based on the 2014 OXFAM Briefing Paper 178 “Working for the Few.”<sup>64</sup> This report provides the following data:

- Almost half of the world’s wealth is now owned by just 1% of the population.
- The wealth of the 1% richest people in the world amounts to US\$ 110 trillion. That is 65 times the total wealth of the bottom half of the world’s population.

<sup>63</sup> <http://www.forbes.com/sites/luisakroll/2012/03/07/forbes-worlds-billionaires-2012/>.

<sup>64</sup> <http://www.oxfam.org/sites/www.oxfam.org/files/bp-working-for-few-political-capture-economic-inequality-200114-en.pdf>.

**Table 1.19** Number of households with net worth exceeding 1, 5, or 10 million dollars from 1983 to 2012. (Data to 2007 from ENW. Data after 2007 from [http://millionairecorner.com/Content\\_Free/The-Number-of-Millionaire-Households-Rebounds.aspx](http://millionairecorner.com/Content_Free/The-Number-of-Millionaire-Households-Rebounds.aspx))

	Thousands of households	The number of households (in 1000 s) with households net worth equal to or exceeding (in 1995 \$)		
		US\$ 1 million	US\$ 5 million	US\$ 10 million
1983	83,893	2411	247	67
1989	93,009	3024	297	65
1992	95,462	3104	277	42
1995	99,101	3015	474	190
1998	102,547	4783	756	239
2001	106,494	5892	1068	338
2004	112,107	6466	1120	345
2007	116,120	7274	1467	464
% Change	33.6	168	353	419
		The number of households (in 1000 s) with households net worth equal to or exceeding (in real year \$)		
		US\$ 1 Million	US\$ 5 Million	US\$ 10 Million
2007		9200	1160	
2008		6700	840	
2009		7800	980	
2012		9000	1140	

- The bottom half of the world's population owns the same as the richest 85 people in the world.
- The richest 1% increased their share of income in 24 out of 26 countries for which we have data between 1980 and 2012.
- In the USA, the wealthiest 1% captured 95% of post-financial crisis growth since 2009, while the bottom 90% became poorer.

The report showed two bar charts that are revealing. In one, they plotted the percentage increase in share of income of the richest 1% of the population of various countries from 1980 to 2012. The USA was the highest at a 140% with Australia and Sweden second and third. In Japan it was 35%, and in France less than 10%. In the other bar chart, they plotted the share of national income going to the richest 1%, comparing 1980 with 2008–2012. Again, the USA led the world with 20% in 2008–2012 versus 10% in 1980. Most other countries were under 10% in all years, although all increased from 1980 to 2012. The concentration of wealth in the rich, worldwide is shown in Table 1.20.

**Table 1.20** The concentration of global wealth

Wealth (USD)	Percentage of world population	Number of adults (millions)	Percentage of world's wealth	Total wealth (trillions of US dollars)
<\$10,000	68.7	3207	3.0	7
\$ 10,000– \$ 100,000	22.9	1066	13.7	33
\$ 100,000– \$1 million	7.7	361	42.3	102
>\$ 1 million	0.7	32	41.0	99

## 1.12 Debt

### 1.12.1 US Federal Debt

Many studies, reports, and websites have raised alarms about the levels of debt in America in the late twentieth century and early twenty-first century.

Debt might have many virtues in the right circumstances. For example, it makes complete sense that families should borrow to purchase a primary residence, taking a few decades to repay the loan, because (a) it is reasonable to expect continued employment and earnings for such a period, (b) in any event, the value of the loan is protected by the inherent value of the residence and (c) hopefully, real estate values tend to be relatively stable. (However, this assumes “normal” times when banks will only loan up to ~80% of the appraised value of a house. During the real estate bubble of 2002–2007 in the USA, loans were made for more than 100% of the (inflated) appraised value making these loans very risky). It would not make any sense at all to require that residences be purchased for cash; very few would be sold. Similarly, a corporation that uses debt to invest in new facilities, capabilities, or ventures with the reasonable prospect of recouping much more than the amount borrowed by virtue of the efficiency and productivity of new facilities, would be using debt effectively. However, when debt is used to fund operating expenses (as opposed to capital investments with prospects for increased future payoff) then there is typically little prospect for repaying the debt, and it amounts to a swindle in the sense of Sect. 1.6. When governments borrow in order to build infrastructure (whether it be a bridge, a water system, or whatnot) with the intent to pay it back from credible tax revenues, it is appropriate and sensible. However, when governments operate with a continuing deficit and borrow to cover operating expenses with little hope of repayment from future revenues that amounts to a Ponzi scheme.

The history of US Federal debt is shown in tabular form in Tables 1.21 and 1.22. Note the small discrepancies between the data in the two tables since

**Table 1.21** History of US federal debt. (<http://www.treasurydirect.gov/govt/reports/pd/histdebt/histdebt.htm>)

Year	Cumulative debt (\$ billion)	Yearly increase in debt (\$ billion)	Cumulative debt per capita
2012	US\$ 16,066	US\$ 1276	US\$ 50,922
2011	US\$ 14,790	US\$ 1228	US\$ 47,252
2010	US\$ 13,562	US\$ 1652	US\$ 43,678
2009	US\$ 11,910	US\$ 1885	US\$ 38,669
2008	US\$ 10,025	US\$ 1017	US\$ 32,815
2007	US\$ 9008	US\$ 501	US\$ 29,729
2006	US\$ 8507	US\$ 574	US\$ 28,309
2005	US\$ 7933	US\$ 554	US\$ 26,621
2004	US\$ 7379	US\$ 596	US\$ 25,014
2003	US\$ 6783	US\$ 555	US\$ 23,229
2002	US\$ 6228	US\$ 421	US\$ 21,550
2001	US\$ 5807	US\$ 133	US\$ 20,304
2000	US\$ 5674	US\$ 18	US\$ 20,049
1999	US\$ 5656	US\$ 130	US\$ 20,200
1998	US\$ 5526	US\$ 113	US\$ 19,949
1997	US\$ 5413	US\$ 188	US\$ 19,755
1996	US\$ 5225	US\$ 251	US\$ 19,280
1995	US\$ 4974	US\$ 281	US\$ 18,560
1994	US\$ 4693	US\$ 282	US\$ 17,709
1993	US\$ 4411	US\$ 346	US\$ 16,836
1992	US\$ 4065	US\$ 400	US\$ 15,695
1991	US\$ 3665	US\$ 432	US\$ 14,373
1990	US\$ 3233	US\$ 376	US\$ 12,804
1989	US\$ 2857	US\$ 255	US\$ 11,428
1988	US\$ 2602	US\$ 252	US\$ 10,513
1987	US\$ 2350	US\$ 225	US\$ 9592
1986	US\$ 2125	US\$ 297	US\$ 8763
1985	US\$ 1828	US\$ 256	US\$ 7617
1984	US\$ 1572	US\$ 195	US\$ 6619
1983	US\$ 1377	US\$ 235	US\$ 5860
1982	US\$ 1142	US\$ 144	US\$ 4912
1981	US\$ 998	US\$ 90	US\$ 4339
1980	US\$ 908	US\$ 81	US\$ 3991
1979	US\$ 827	US\$ 55	US\$ 3676
1978	US\$ 772	US\$ 73	US\$ 3462

**Table 1.21** (Continued)

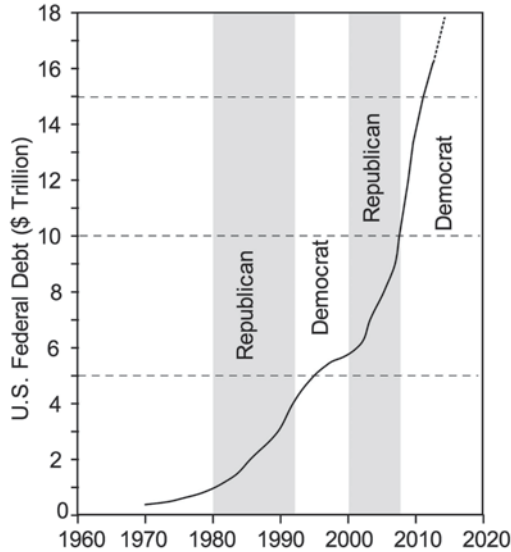
Year	Cumulative debt (\$ billion)	Yearly increase in debt (\$ billion)	Cumulative debt per capita
1977	US\$ 699	US\$ 79	US\$ 3163
1976	US\$ 620	US\$ 87	US\$ 2818
1975	US\$ 533	US\$ 58	US\$ 2434
1974	US\$ 475	US\$ 17	US\$ 2189
1973	US\$ 458	US\$ 31	US\$ 2130
1972	US\$ 427	US\$ 29	US\$ 2014
1971	US\$ 398	US\$ 27	US\$ 1913
1970	US\$ 371		

**Table 1.22** Recent history of US federal debt. (<http://www.treasurydirect.gov/NP/debt/search?startMonth=12&startDay=31&startYear=1993&endMonth=12&endDay=31&endYear=2013>)

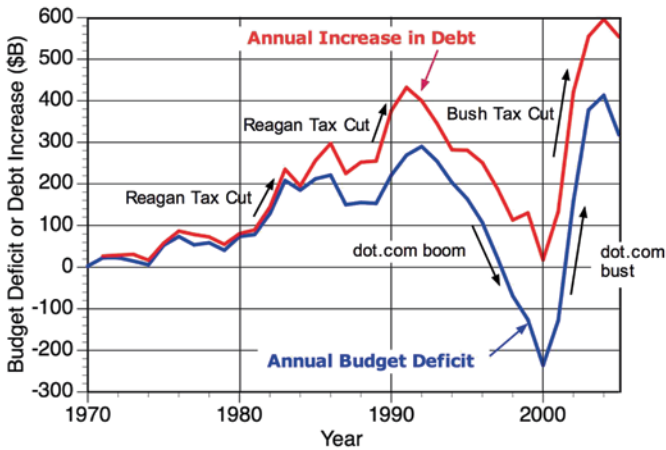
Year	Held by public (\$ billion)	Intra-government (\$ billion)	Cumulative debt (\$ billion)
Feb. 2014	US\$ 12,493	US\$ 4970	US\$ 17,463
2013	US\$ 12,355	US\$ 4997	US\$ 17,352
2012	US\$ 11,582	US\$ 4851	US\$ 16,433
2011	US\$ 10,448	US\$ 4775	US\$ 15,223
2010	US\$ 9390	US\$ 4635	US\$ 14,025
2009	US\$ 7811	US\$ 4500	US\$ 12,311
2008	US\$ 6369	US\$ 4330	US\$ 10,700
2007	US\$ 5136	US\$ 4093	US\$ 9229
2006	US\$ 4901	US\$ 3779	US\$ 8680
2005	US\$ 4715	US\$ 3456	US\$ 8170
2004	US\$ 4408	US\$ 3188	US\$ 7596
2003	US\$ 4044	US\$ 2954	US\$ 6998
2002	US\$ 3648	US\$ 2758	US\$ 6406
2001	US\$ 3394	US\$ 2549	US\$ 5943

Table 1.21 is taken at the end of September and Table 1.22 is taken at the end of December. Graphs of US federal debt are shown in Figs. 1.21, 1.22, and 1.23.

Figure 1.21 shows that prior to President Obama, administrations under Democratic presidents increased the national debt at an average of 3.2% per year while administrations under Republican presidents increased the national debt at an average of 9.7% per year while in office. Republican presidents

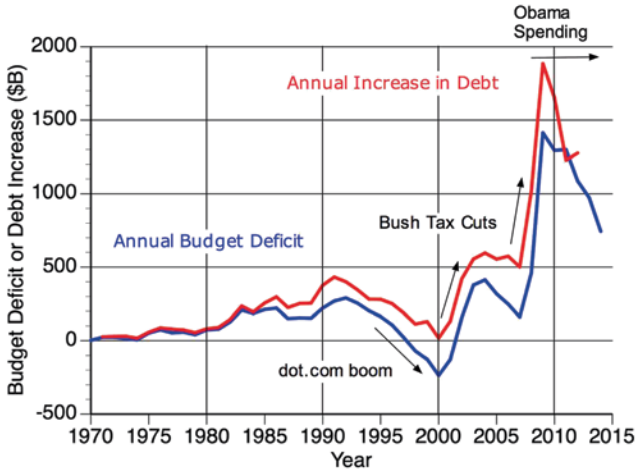


**Fig. 1.21** The rise in US Federal debt from 1970 to 2012 showing which political party was in power in each major segment of increase in debt



**Fig. 1.22** US Federal debt and budget deficit from 1970 to 2006 showing effects of tax cuts and the *dot.com* mania. ( <http://usgovinfo.about.com/od/federalbudgetprocess/a/Budget-Deficit-History.htm>)

out-borrowed Democratic presidents by a 3:1 ratio. Debt has been on a steady incline ever since the Reagan presidency. The only exception to the steep increase over the past 25 years was during the Clinton presidency, when the combination of unprecedented temporary revenues from the *dot.com* bubble, combined with excess SS collections, temporarily reduced the rate of increase



**Fig. 1.23** US Federal debt and budget deficit from 1970 to 2012 showing effects of tax cuts, the *dot.com* mania, and Obama’s spending. (<http://usgovinfo.about.com/od/federalbudgetprocess/a/Budget-Deficit-History.htm>)

of debt. The Republican administrations, particularly those of Mr. Reagan and Mr. Bush (Junior), advanced the federal debt the most during the pre-Obama era. Although Republicans always accuse Democrats of following a “tax and spend” policy, Republicans followed a “spend and borrow” policy. However, starting in 2009, with advent of the Obama presidency, the debt rose at a previously unprecedented rate, eclipsing debt growth by all prior presidents, Republican or Democrat.

But all of these figures are given in current year dollars. If we corrected them for inflation, the curve would flatten out considerably. Dollars in 2007 are worth about 1/5 of 1970 dollars so the equivalent debt in 2007 would be about 1/5 of that given in the figures if the debt were expressed in 1970 dollars. Nevertheless, If we divide the debt of US\$ 16 trillion (at the end of 2012) by the population of 320 million, we obtain the debt per person = US\$ 50,900.

Only about 2/3 of the US national debt is held by individuals, institutions, and foreign governments. The remaining 1/3 is held by numerous other Federal agencies. Some agencies, like the Social Security Trust Fund, take in more revenue from taxes than they need right now. As required by law, these agencies must buy special issue US Treasuries with excess funds. The major government agencies that hold US Treasuries are listed below:<sup>65</sup>

<sup>65</sup> By permission from Kimberly Amadeo, expert on the U.S. Economy for About.com. <http://useconomy.about.com/od/monetarypolicy/f/Who-Owns-US-National-Debt> and [http://useconomy.about.com/od/glossary/g/Soc\\_Sec\\_Trust.htm](http://useconomy.about.com/od/glossary/g/Soc_Sec_Trust.htm).

- SS—US\$ 2.72 trillion
- Office of Personnel Management (Federal Employees Retirement, Life Insurance, Hospital Insurance Trust Funds, including Postal Service Fund)—US\$ 1.12 trillion
- Dept. of Health and Human Services (Federal Supplementary Medical Insurance Trust Fund)—US\$ 69 billion
- FDIC—US\$ 35 billion
- Department of Transportation (Airport and Highway Trust Fund)—US\$ 20 billion
- Department of the Treasury (Exchange Stabilization Fund)—US\$ 23 billion
- Department of Labor (Unemployment Trust Fund)—US\$ 21 billion
- Other Programs and Funds—US\$ 933 billion (as of September 2012)<sup>66</sup>

The publicly held debt is apportioned as follows:<sup>67</sup>

- Foreign—US\$ 5.311 trillion
- Federal Reserve—US\$ 1.66 trillion
- State and Local governments, including pension funds—US\$ 709.1 billion
- Mutual Funds—US\$ 864.9 billion
- Private Pension Funds—US\$ 605.2 billion
- Banks—US\$ 305.2 billion
- Insurance Companies—US\$ 259.1 billion
- US Savings Bonds—US\$ 184.7 billion
- Other (individuals, government-sponsored enterprises, brokers and dealers, bank personal trusts and estates, corporate and noncorporate businesses, and other investors) —US\$ 1.14 trillion

Federal debt is often discussed in proportion to the gross national product (GNP). Economists generally feel that when the debt of a nation starts to exceed its GNP, its finances become increasingly precarious. Prior to 2007, the debt-to-GNP ratio was around 60%. On that basis, some argued that the federal debt was not excessive. The argument might go that if the total debt of an entity were of the annual income of the entity, there would be every reason to believe that it could someday be paid back. This might be based on the analogy to debt for a household. It would not be considered excessive for many households to have total debt equal to 60% of annual income. Indeed, household mortgage debt (backed by real estate value) might be five to six

<sup>66</sup> Treasury Bulletin, Monthly Treasury Statement, Table FD-3: Government Account Series.

<sup>67</sup> Federal Reserve as of January 2, 2013; All others as of June 2012 Treasury Bulletin, Ownership of Federal Securities, Table OFS-2.



times annual income, with a reasonable expectation to be paid back over several decades. However, household consumer debt (backed only by a promise to pay) of 68 % of annual income would certainly be considered excessive. In the case of federal government debt, the comparison to the GDP may be irrelevant if the government is unable to pay back its debt due to a political impediment to raising taxes to increase revenues. Furthermore, the GNP is not the government's revenue. The government's revenue is the tax it applies to the GNP. After the economic meltdown of 2008, the federal debt rose to a little over 100 % of the GDP, where it remains now.

Reinhart and Rogoff (2010) discussed economic growth in a time of debt.<sup>68</sup> They began with the question:

Outsized deficits and epic bank bailouts may be useful in fighting a downturn, but what is the long run macroeconomic impact or higher levels of government debt, especially against the backdrop of graying populations and rising social insurance costs?

They examined data

...on forty-four countries spanning about two hundred years. Taken together, the data incorporate over 3,700 annual observations covering a wide range of political systems, institutions, exchange rate and monetary arrangements, and historic circumstances.

For advanced countries (e.g., Europe, USA, Japan, etc.) they found "...no obvious link between debt and growth until public debt reaches a threshold of 90 %. The observations with debt to GDP over 90 % have [considerably lower GDP growth]."

As we discussed in Sect. 1.6, K&A distinguished between three levels of speculation. In my terminology, these are (1) speculations, (2) bootstraps, and (3) swindles (usually Ponzi schemes). These are distinguished by the likelihood of earnings from the venture being sufficient to pay back principal and interest on loans made to finance the venture. In a speculation, there is a reasonable prospect that if all goes well, the operating income from the enterprise will be sufficient to pay off both the interest and amortization of its indebtedness. In a bootstrap operation, it is likely that anticipated operating income will be sufficient so it can pay the interest on its indebtedness. However, even making favorable assumptions, it is unlikely that the operating income will cover the amounts of principal due on maturing loans. In a swindle, the an-

---

<sup>68</sup> Reinhart and Rogoff (2010).

ticipated operating income is not likely to be pay the interest and principal on its indebtedness on the scheduled due dates; to get the cash, the firm must continually increase its indebtedness until lenders will no longer support the venture. So the real issue here is not how the debt compares to the GNP, although that ratio does provide a basis for judging the magnitude of the debt. Rather, the important thing is whether the government in question has the wherewithal to pay back this debt in the foreseeable future, taking into account projected future earnings of the populace, political viability of future tax increases, and state of the world economy. That would determine whether the debt of the government in question was a speculation, a bootstrap, or a Ponzi scheme.

In discussing the national debt that seemed enormous in 1983 (at a mere US\$ 1.39 trillion), Delamaide<sup>69</sup> described it as “a fiction, that has no impact in the real world.” He described the Reagan administration as adding “mind-boggling sums to unreal numbers.” He even wondered if the federal government of the USA could possibly go broke like New York City.

Gerald Ford said,

If we go on spending more than we have, providing more benefits and services than we can pay for, then a day of reckoning will come to Washington and the whole country just as it has to New York City.

Delamaide quoted Henry Kaufman, as saying: “The debt burden today is awesome and its constrictiveness is permeating our economic life” and suggested that “a depression from a deflating debt bubble might be beyond the power of the authorities to counteract it.” At that time, US debt was about US\$ 1.3 trillion. In 2008, the US debt was approaching US\$ 10 trillion. The candidates for presidency in 2008 had slightly different prescriptions for revitalizing the moribund US economy. However, both Obama and McCain shared one basic principle: they both would increase spending and thereby expand the national debt. Leonard Burman of the Tax Policy Center estimated that Obama’s plan would add 3.4 trillion dollars of debt over the next decade and McCain’s plan would add 5 trillion dollars of debt over that period.<sup>70</sup> As it turns out, Obama was elected, and by 2013 the national debt had increased by more than 6 trillion dollars during his tenure and stands at more than 17 trillion dollars in early 2014.

---

<sup>69</sup> Delamaide (1984).

<sup>70</sup> Los Angeles Times, July 24, 2008.

Long before the run-up in US federal debt, Abel (1992) discussed the question: “Can the Government Roll Over Its Debt Forever?”<sup>71</sup> He began with this introduction:

Despite the widely professed desire to reduce the federal deficit and to limit the growth of federal government debt, a consensus about how to achieve these alleged goals has not yet emerged. Faced with continuing deficits, the government has resorted to rolling over its debt—that is, issuing new debt to pay the interest on existing debt and to payoff holders of maturing debt. Is rolling over the debt the solution that we have been looking for? Can the government simply roll over its debt forever without having to take the politically costly steps of raising taxes or cutting expenditures in the future? This article discusses the feasibility of rolling over government debt forever. As we will see, this question is related to another important question about the future of the economy: Is the economy as a whole saving an appropriate amount for the future? In addition, both of these questions are related to the question of whether an entity can run a Ponzi game.

When Abel wrote this, the federal debt was about US\$ 3.6 trillion, increasing at more than US\$ 100 billion per year, which seemed huge at the time.

Abel described how a government might roll over its debt forever in what he called “a rational Ponzi game” when the *growth rate of the GNP exceeds the interest rate on the debt*. I will paraphrase his argument here:

Consider a government that sells \$100 billion of long-term bonds, promising to pay an interest rate of 4% per year. At the end of one year, when it is time to pay investors \$4 billion in interest, the government sells an additional \$4 billion of bonds to investors, bringing total bonds outstanding to \$104 billion. Then at the end of two years, when \$4.16 billion of interest (4% of \$104 billion) is due, the entity sells an additional \$4.16 billion of bonds, and so on. The amount of bonds outstanding grows at the rate of interest, which is 4% per year in this example. For this Ponzi game to be feasible, the public must be willing to hold the ever-increasing amount of bonds issued. If investors’ wealth is growing at, say, 5% per year, there might be sufficient demand by the public for newly issued bonds, and thus the entity would be able to sell additional bonds to pay the interest on its debt without having to use any of its own resources.

After presenting this case as a sort of “straw man,” Abel proceeded to knock it down. He claimed that this explanation was overly simplistic and he finally concluded: “we cannot yet test whether an actual government can roll over its debt forever.”

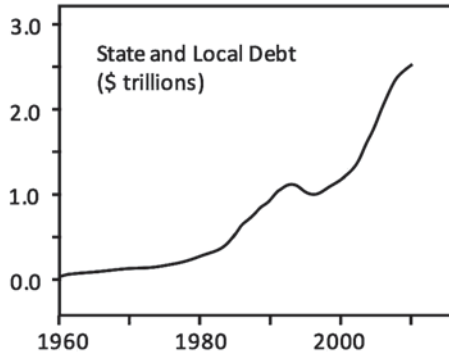
---

<sup>71</sup> Abel (1992).

The US federal debt appears to be a swindle because there is no credible scenario by which the Federal Government can repay its debt without raising taxes inordinately, which would be political suicide and bring on an economic depression. Hence, the Federal Government can only repay presently maturing debt by further borrowing, thus borrowing from Peter's children to pay Peter. That is a classical Ponzi scheme.

One may now ask whether through good management and efficient operation, the government can actually operate at a budget surplus, as has been claimed by some during the Clinton years. However, these reductions were due primarily to very high revenues from *dot.com* profits temporarily during its run-up (i.e., just another bubble). Aside from the fact that *dot.com* revenues were incredibly high those years, excess social security collections (above payouts) added about a hundred billion per year, and these were counted as "income" in claiming a drop in the deficit. But these assets are balanced by a liability that is owed to the SS Trust Fund, so claiming that it reduced the deficit is fakery. In actual fact, the reported national debt increased each year from 1997 to 2000, although it almost broke even in year 2000 when the NASDAQ index rose 85% in 1 year to 5200. The bottom line is that were it not for a temporary *dot.com* bubble and the claim that collection of SS Trust funds were government income, there would have been much greater deficits. There does not seem to be any sustainable way for the US government to pay back its loans.

The Republicans would have you believe that by lowering tax rates, the economy will boom so much that despite the lower tax rates, government revenues will actually increase, producing a surplus of government funds. Data show that this has never happened and the national debt has actually increased more during Republican administrations than in Democratic administrations until President Obama took the national debt into uncharted territory (see Figs. 1.13 and 1.14). The Federal Government is caught between a rock and a hard place. It must borrow to operate. While theoretically, it might be able to pay back its loans (slowly over a period of time) by raising taxes, the political reality is that such a tax increase would be political suicide, and aside from the politics, would probably produce a severe depression, thus reducing revenues, and further exacerbating the difficulty of paying back loans. Hence, we have a conundrum. The credibility of the government to borrow depends on its implicit capability to tax, and thereby repay loans. However, the political and fiscal realities suggest that the government can never pay back those loans. It must keep borrowing via new loans to pay back the principal on the old. That fits Minsky's definition of a Ponzi scheme. The government must go into deeper and deeper debt forever. The real question is this. Given these facts, why do investors loan money to such a Ponzi scheme at such low interest rates? Perhaps the answer is that with a seemingly permanent state of tension,



**Fig. 1.24** State and local government debt. (By permission from <http://www.mybudget360.com/calpers-calstrs-ucrs-california-pension-state-local-government-debt-markets/>)

war, and uncertainty in world affairs, the US Treasury is viewed as the only safe haven for funds. Money is invested in US treasuries, not so much for profit, but principally for safety.

### 1.12.2 State and Municipal Debt

There has been a rapid increase in debt by American state governments since 1990. Figure 1.24 provides data on US state and local government debt. Cumulative debt of the states totaled about US\$ 1 trillion in 2010 while cumulative debt of local governments was about US\$ 1.5 trillion.

State debt per capita ranged from US\$ 11,300 in Massachusetts to US\$ 920 in Tennessee. Pension funds, particularly defined benefit retirement funds, are also a significant liability of states and local governments.

In addition to explicit debt, there is also an implied debt to cover future retirement and health-care obligations, as discussed in Sect. 1.15.2, where it is shown that for some states, the retirement and health-care obligations are greater than the actual cumulative debt. Recent studies have estimated that most state pensions are underfunded, possibly as much as US\$ 1 trillion.<sup>72</sup>

### 1.12.3 Household and Mortgage Debt

Household debt is divided into mortgage debt and consumer debt.

Consumer debt is divided into revolving debt (mainly credit card debt) and nonrevolving debt (automobile loans, student loans, and other supposedly one-time purchases). Data on consumer debt are provided in Table 1.23. On

<sup>72</sup> Pew Center for the States (2010).

**Table 1.23** US consumer debt (\$ billions). (Federal Reserve Bank of Philadelphia, <http://www.philadelphiafed.org/consumer-credit-and-payments/statistics/>)

Year	Revolving	Nonrevolving	Total consumer
1990	251	554	801
1995	464	659	1123
2000	664	869	1533
2002	749	1225	1974
2003	771	1308	2079
2004	800	1391	2191
2005	825	1460	2285
2006	875	1512	2387
2007	922	1566	2488
2008	1005	1520	2525
2009	917	1503	2420
2010	840	1680	2520
2011	840	1770	2610
2012	845	1920	2765

a per capita basis, household debt amounts to more than US\$ 8000, and on a household basis it amounts to more than US\$ 20,000.

Consumer debt tripled from 1990 to 2007, but in constant 1990 dollars, it increased by only 60 % over that time period.

The interest on home mortgage debt is deductible from income tax, and therefore it is very beneficial for homeowners to convert other forms of debt to mortgage debt. Over the past two decades, Americans have proceeded to do just that. However, when interest rates were lowered dramatically by the Fed in 2002 in a frantic effort to stem the collapse of the *dot.com* bubble, Americans went on a refinancing spree, and in the process, markedly increased their loan principals. This, coupled with the housing bubble that ensued, raised mortgage debt to unprecedented levels as shown in Table 1.24.

Under “normal” conditions, a modest rise in mortgage debt would not be alarming because the value of a loan is protected by the inherent value of the residence, and real estate values tend to be relatively stable. In “normal” times, banks only loan up to ~ 80 % of the appraised value of a house, and appraised values tend to be conservative and stable. However, during the real estate bubble of 2002–2007 in the USA, loans were made for more than 100 % of highly inflated appraised values, making these loans very risky. In the ensuing aftermath when the bubble popped in late 2007, real estate values went through significant declines. Further discussion is given in Sect. 2.11.

**Table 1.24** Mortgage debt in America (billions of dollars). (Fannie Mae, 2007, updated from <http://www.federalreserve.gov/econresdata/releases/mortoutstand/current.htm>)

Year	Residential total	1–4 family	Multifamily
1990	2903	2615	288
1991	3067	2782	285
1992	3219	2947	272
1993	3375	3106	269
1994	3553	3283	270
1995	3727	3451	276
1996	3963	3675	288
1997	4210	3910	300
1998	4600	4266	333
1999	5066	4691	375
2000	5514	5110	404
2001	6086	5640	446
2002	6856	6371	485
2003	7725	7169	556
2004	8847	8238	609
2005	10,046	9366	680
2006	10,921	10,190	731
2008	11,977	11,137	840
2009	11,772	10,925	847
2010	11,260	10,422	838
2011	11,009	10,166	843
2012	10,788	9922	866

Table 1.25 shows the annual net investment in mortgages.

In the early 1990s, the annual investment in mortgages was around 5–6% of total mortgage debt and the net growth in mortgage debt was about 4% per annum. After the stock market crashed in 2001, the Federal Reserve System flooded the banks with low-interest funds and the Federal Government essentially stopped regulating banks in regard to their practices for making mortgage loans. From 2001 to 2007, annual growth in mortgage debt averaged more than 12% of total mortgage debt. A significant fraction of these mortgage loans were swindles in the Minsky sense, because there was almost no hope that borrowers could repay the loans unless real estate continued to inflate at 10–20% per year.

Total household debt is the sum of consumer debt and mortgage debt. Household debt (including mortgage debt) since year 2000 is summarized

**Table 1.25** Annual investment in residential mortgages (billions of dollars). (Fannie Mae, 2007, updated from <http://research.stlouisfed.org/fred2/series/A754RC1A027N-BEA>)

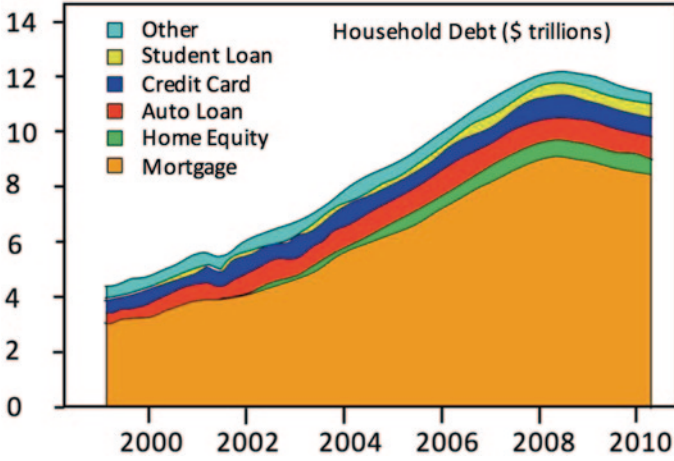
Year	Net mortgage investment
1990	236.0
1991	163.7
1992	152.7
1993	156.0
1994	177.5
1995	173.9
1996	236.0
1997	247.0
1998	389.9
1999	466.2
2000	448.3
2001	571.5
2002	770.1
2003	868.8
2004	1122.4
2005	1199.4
2006	874.9
2009	-205
2010	-512
2011	-251
2012	-221

in Fig. 1.25. Household debt as a percentage of disposable income is shown in Fig. 1.26. Household debt servicing as a percentage of disposable income is shown in Fig. 1.27. Household debt as a percentage of disposable income crept up from 65% in the early 1980s to about 82% in the early 1990s, to about 127% in 2008. The average debt per household at the end of 2006 is estimated to be about US\$ 113,000 per household (including mortgage debt) based on the country's 114.4 million residences.

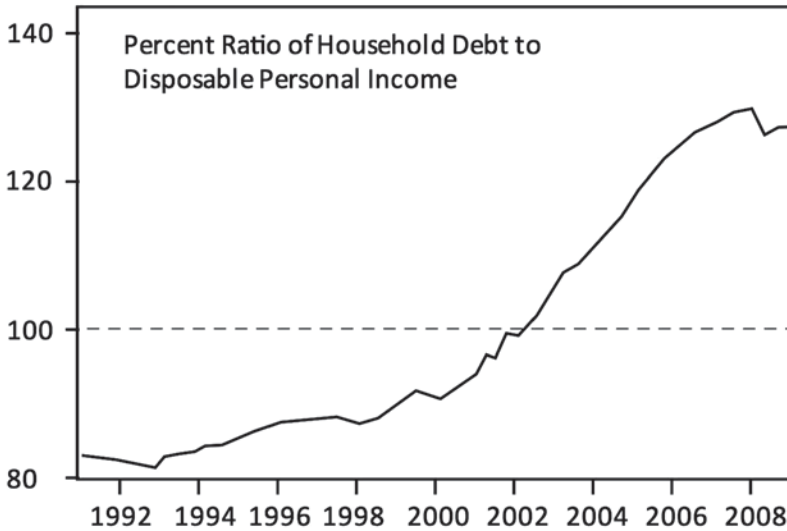
Measured against the GDP, household debt rose from 60 to 70% in the decade prior to the housing bubble of 1997–2007, but rose to 100% in 2007–2008, and then backed off to about 85% in 1985 after many houses were foreclosed.<sup>73</sup>

<sup>73</sup> Bhutta and Keys (2013).

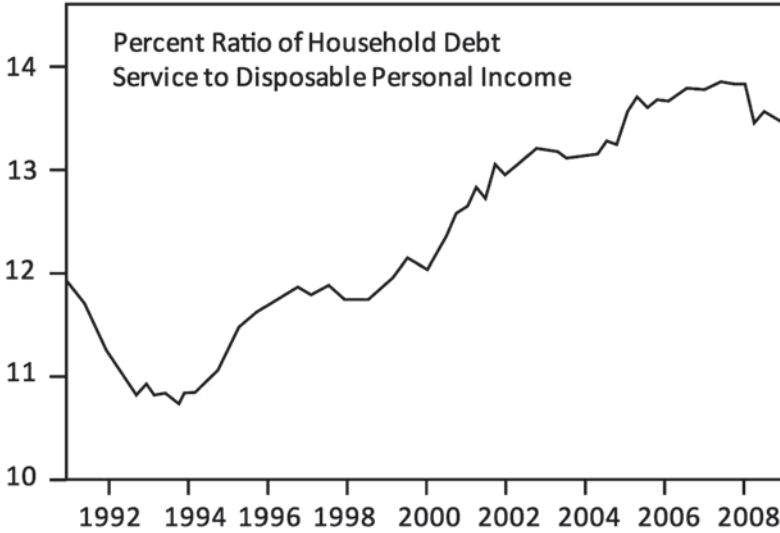




**Fig. 1.25** Household debt in the twenty-first century. ([http://www.newyorkfed.org/householdcredit/2013-Q4/data/pdf/HHDC\\_2013Q4.pdf](http://www.newyorkfed.org/householdcredit/2013-Q4/data/pdf/HHDC_2013Q4.pdf))



**Fig. 1.26** Ratio of household debt to disposable personal income. (<http://www.frbsf.org/education/publications/doctor-econ/2009/july/consumer-debt-household-income>)



**Fig. 1.27** Ratio of household debt service to disposable personal income. (<http://www.frbsf.org/education/publications/doctor-econ/2009/july/consumer-debt-household-income>)

Quite a number of websites have raised alarms regarding the levels of household debt in the USA.

With great fanfare, the Federal Reserve announced that household debt in 2013 had declined to the prerecession level of 2006.<sup>74</sup> However, as has been pointed out by various websites,

The real reason our debt has dipped is that so many Americans defaulted on bills they couldn't pay.<sup>75</sup>.... The decline in household debt doesn't necessarily mean we've changed our ways. In fact, nearly 80 % of deleveraging is caused by defaults. Only 20 % of the decrease comes as a result of voluntary deleveraging, i.e. the hard work of paying down our debts faster than we borrow.

In past years, the Federal Reserve Bank of New York has held a rather optimistic view regarding the growth in household debt. Personal consumption expenditures make up about two-thirds of the country's GDP, and one of the great concerns of the Fed is the question of whether "the sharp increase of household indebtedness and the rising share of income going to payments on

<sup>74</sup> <http://www.bloomberg.com/news/2013-05-14/fed-says-u-s-household-debt-declined-to-2006-level.html>; [http://www.huffingtonpost.com/2012/10/15/household-debt-lowest-level-since-2006\\_n\\_1967313.html](http://www.huffingtonpost.com/2012/10/15/household-debt-lowest-level-since-2006_n_1967313.html).

<sup>75</sup> <http://business.time.com/2012/10/19/household-debt-has-fallen-to-2006-levels-but-not-because-were-more-frugal/>.

credit cards, auto loans, mortgages, and other household loans...[produce] rising debt burdens [that would] precipitate a significant cutback in spending as apprehensive consumers take steps to stabilize their finances.”<sup>76</sup> This Fed document suggested that so long as the consumer spends, spends, and spends more, all is well regardless of the levels of debt. So, the concern of the Fed was whether the increase in debt load would affect consumer spending. This Fed document presented two alternative hypotheses:

1. “Households may have taken on too much debt in recent years, placing themselves in a precarious financial position. Over time, these households will recognize that their indebtedness has made them more susceptible to financial distress in the event of a serious illness, job loss, or other misfortune. As a result, they will seek to reduce their vulnerability by paying down debt and decreasing their expenditures.”
2. “Households have willingly assumed greater debt in recent years because they expect their incomes to rise. They spend more in anticipation of increased earnings and they finance their higher spending through debt. Even if their incomes begin to fall, households may continue to increase their debt to maintain their spending—albeit at a reduced level—on the assumption that the income decline will be short lived. Only if the decline proves to be long lasting will households cut expenditures further and begin to pay down their debt.”

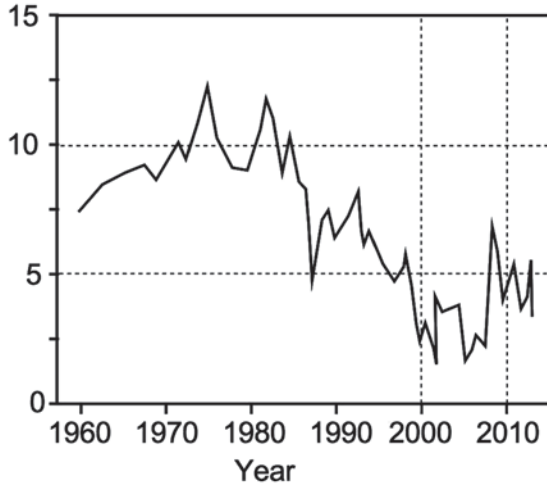
What is most interesting about alternative (2) is that the “expected rise” could hardly have been a rise in salary since real wages have been essentially flat for some time. The “expected rise” was more likely an expected rise in paper asset values (stocks and real estate), which in 1997 (when the Fed article was printed) was probably a widespread expectation with the stock markets booming. The Fed report concluded that their “analysis does not support the more alarmist view of debt” and that “overall, the model simulations suggest that there is little reason to expect that current debt burdens will trigger a decline in consumer spending.” The scary part of this is that it is likely to be true. As consumers build up debt, they may be unlikely to cut back expenditures, and thus add further to this debt. From the Fed’s point of view, there seems to be no limit to debt.

In a similar vein, the Federal Reserve Bank of New York has displayed a rather optimistic view of low savings rates.<sup>77</sup> This report claimed,

---

<sup>76</sup> McCarthy (1997).

<sup>77</sup> Steindel (2007).



**Fig. 1.28** US savings rate. (<http://research.stlouisfed.org/fred2/series/PSAVERT/>)

The US personal saving rate's negative turn in 2005 has raised concerns that Americans may have to curtail their spending and accept a lower standard of living as they pay off rising debts. However, a closer look at saving trends suggests that the risks to household well-being are overstated. The surge in energy costs may have temporarily dampened saving, while the accounting of household income from stock holdings may be skewing saving estimates. Moreover, broad measures of saving have remained positive, and household wealth is on the rise.

After remaining around 10% from 1965 to 1985, the savings rate (as percentage of disposable income) decreased linearly after 1985 and bottomed out at around 2% from 2001 to 2008 (see Fig. 1.28).

One point made by the Fed is that capital gains from rising stocks made it unnecessary for many households to save in the conventional sense; however, for people with lower incomes who do not own stocks (or do not own much), rising stock prices offered no cushion for the lowering of interest rates in savings institutions. While it may be true that “household wealth was on the rise,” such paper gains mainly impact the wealthier segments of the population, and some of these gains were ephemeral, as we saw in 2008. Nevertheless, the Fed seems to be happy with gains in paper assets replacing conventional savings. That such gains may be short-lived and not grounded in fundamentals seems not to be a concern of the Fed.

As Thorstein Veblen said some 85 years ago: “save first—invest afterward” can now be changed to “borrow first—invest immediately—earn afterward.”

**Table 1.26** Bankruptcy Filings in the USA, 1980–2012 (thousands). (Jickling 2009)

Year	Total	Business	Personal
1980	331	44	288
1985	413	71	341
1990	783	65	718
1995	927	52	875
1998	1442	44	1398
2000	1253	35	1218
2001	1106	30	1097
2003	1650	37	1613
2004	1636	36	1600
2005	2078	39	2039
2006	618	20	598
2007	851	28	823
2008	1117	43	1074
2009	1473	60	1412
2010	1593	56	1536
2011	1410	47	1362
2012	1221	40	1181

### 1.12.4 Bankruptcies

Between 1980 and 2012, 19,100,000 couples and individuals filed for bankruptcy. Typically, more than a million people per year file for bankruptcy. The annual number of bankruptcies is shown in Table 1.26.

The number of personal bankruptcies per year increased dramatically after the early 1980s. The consumer credit industry lobbied Congress for nearly 10 years in an effort to pass a bankruptcy reform bill. The industry claimed that consumers used bankruptcy as a means of financial scheming, running up huge credit card bills with complete disregard for their ability to repay them, and then discharging them in bankruptcy when they could not meet the payments. Finally, on October 17, 2005, Congress passed the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 (BAPCPA). However, it has been claimed<sup>78</sup> that

Abusive filers made up a very small percentage of bankruptcy petitioners. The vast majority of people who file for bankruptcy do so because of huge medical bills not covered by insurance, divorce, job loss, or a death in the family.

<sup>78</sup> American Bankruptcy Institute; and Total Bankruptcy, [http://www.totalbankruptcy.com/bankruptcy\\_law\\_updates\\_year\\_later.htm](http://www.totalbankruptcy.com/bankruptcy_law_updates_year_later.htm).

Democratic US senator from Connecticut Chris Dodd blasted the bankruptcy reform bill, claiming that it benefits banks and credit card companies at the expense of citizens.

As Table 1.26 shows, bankruptcy filings dropped sharply in the aftermath of the BAPCPA. However, the data are skewed by the fact that in expectation that the BAPCPA would be passed, many people in precarious financial condition filed for bankruptcy in advance of passage of the bill. However, the rate of filings increased from 2006 to 2010, and slackened in 2011 and 2012 as the stock market recovered.

The various causes of bankruptcy have been estimated as follows:

- Medical bills 42 %
- Job loss 22 %
- Excess spending 15 %
- Divorce 8 %
- Unexpected disaster 7 %
- Other (avoiding foreclosure, poor financial planning, student loans, etc.) 6 %

## 1.13 Deposit Insurance

According to the FDIC official website:

The Federal Deposit Insurance Corporation (FDIC) preserves and promotes public confidence in the US financial system by insuring deposits in banks and thrift institutions for at least \$ 100,000;<sup>79</sup> by identifying, monitoring and addressing risks to the deposit insurance funds; and by limiting the effect on the economy and the financial system when a bank or thrift institution fails.... Since the start of FDIC insurance on January 1, 1934, no depositor has lost a single cent of insured funds as a result of a failure. The FDIC receives no Congressional appropriations—it is funded by premiums that banks and thrift institutions pay for deposit insurance coverage and from earnings on investments in US Treasury securities. With an insurance fund totaling more than \$ 49 billion, the FDIC insures more than \$ 3 trillion of deposits in US banks and thrifts—deposits in virtually every bank and thrift in the country.<sup>80</sup>

The above-cited paragraph from the FDIC official webpage indicates that the FDIC held an insurance fund of US\$ 49 billion to cover more than

<sup>79</sup> Raised to US\$ 250,000 in 2008.

<sup>80</sup> <http://www.fdic.gov/about/learn/symbol/index.html>.

US\$ 3000 billion in deposits, for a 1.5 % ratio. This appears to be appropriate for “normal” times but it certainly would not be adequate for a financial calamity of the magnitude of the S&L scandal.

In order to receive this benefit, member banks must follow certain liquidity and reserve requirements. Banks are classified according to their “risk-based capital ratio.” When a bank becomes undercapitalized, the FDIC issues a warning to the bank. When this ratio drops below 6 %, the FDIC can force a change management and require the bank to take other corrective action. When the bank becomes critically undercapitalized, the FDIC declares the bank insolvent.

The history of the FDIC is aptly described in a FDIC document.<sup>81</sup>

Thousands of banks failed in 1933 and never reopened. The confidence of the people still was shaken, and public opinion remained squarely behind the adoption of a federal plan to protect bank depositors. Opposition to such a plan had been voiced earlier by President Roosevelt, the Secretary of the Treasury and the Chairman of the Senate Banking Committee. They believed a system of deposit insurance would be unduly expensive and would unfairly subsidize poorly managed banks. Nonetheless, public opinion held sway with the Congress, and the Federal Deposit Insurance Corporation was created three months later when the President signed into law the Banking Act of 1933. The final frenetic months of 1933 were spent organizing and staffing the FDIC and examining the nearly 8,000 state-chartered banks that were not members of the Federal Reserve System. Federal deposit insurance became effective on January 1, 1934, providing depositors with \$ 2,500 in coverage, and by any measure it was an immediate success in restoring public confidence and stability to the banking system. Only nine banks failed in 1934, compared to more than 9,000 in the preceding four years.

This document went on to say,

In its seventh decade, federal deposit insurance remains an integral part of the nation’s financial system, although some have argued at different points in time that there have been too few bank failures because of deposit insurance, that it undermines market discipline, that the current coverage limit of \$ 100,000 is too high, and that it amounts to a federal subsidy for banking companies. Each of these concerns may be valid to some extent, yet the public appears to remain convinced that a deposit insurance program is worth the cost, which ultimately is borne by them. The severity of the 1930s banking crisis has not been repeated, but bank deposit insurance was harshly tested in the late 1980s and

---

<sup>81</sup> FDIC (1998).

early 1990s. The system emerged battered but sound and, with some legislative tweaking, better suited to the more volatile, higher-risk financial environment that has evolved in the last quarter of the 20th century.

During the late 1940s and 1950s, there were no more than five bank failures in any single year. Fewer than 10 banks failed per year in the 1960s. Because most of the banks that failed during the period 1942 to 1970 were small institutions, insurance losses remained low. In just four of these years did losses exceed US\$ 1 million, and losses averaged only US\$ 366,000 per year. However, the low incidence of failures was regarded by some as a sign that the bank regulators were overly strict, operating with policies and practices rooted in the banking crises and economic chaos of the 1930s. In 1963, Wright Patman (Democratic Chairman of the House Banking and Currency Committee) said there should be more bank failures and we have gone too far in the direction of bank safety. Looking at the bankers of the 1980s and the 2000s, it appears that Mr. Patman got his wish fulfilled—and then some!

The new generation of bankers who came to power in the 1960s abandoned the traditional conservatism that had characterized the industry for many years. Instead, they began to strive for more rapid growth in assets, deposits, and income by taking greater risks. They were aided and abetted by liberalization of regulations at the state and national levels. The size of bank failures increased in the 1970s but the losses were not beyond the capability of the FDIC. However, the housing bubble and savings and loan scandal of the 1980s brought on much more extensive losses. From 1982 through 1991, more than 1400 FDIC-insured banks failed, and 131 remained open only through FDIC financial assistance.

The Federal Savings and Loan Insurance Corporation (FSLIC) is a now-defunct institution that once administered deposit insurance for S&Ls in the USA. It was abolished in 1989 by the Financial Institutions Reform, Recovery, and Enforcement Act, which passed responsibility for savings and loan deposit insurance to the FDIC. The savings and loan scandal of the 1980s is discussed in Sect. 2.5. More than 1000 S&Ls failed in “the largest and costliest venture in public misfeasance, malfeasance and larceny of all time.”<sup>82</sup> The FSLIC insurance fund, which amounted to a few billion dollars, was grossly inadequate to deal with the US\$ 160 billion cost of bailing out the S&Ls.

One of the most notable features on the landscape of the banking crises of the 1980s was the crisis involving Continental Illinois National Bank and Trust Company (CINB) in May 1984, which was the largest bank resolution in US history until Washington Mutual failed in 2008. As the nation’s

---

<sup>82</sup> Galbraith (1992).

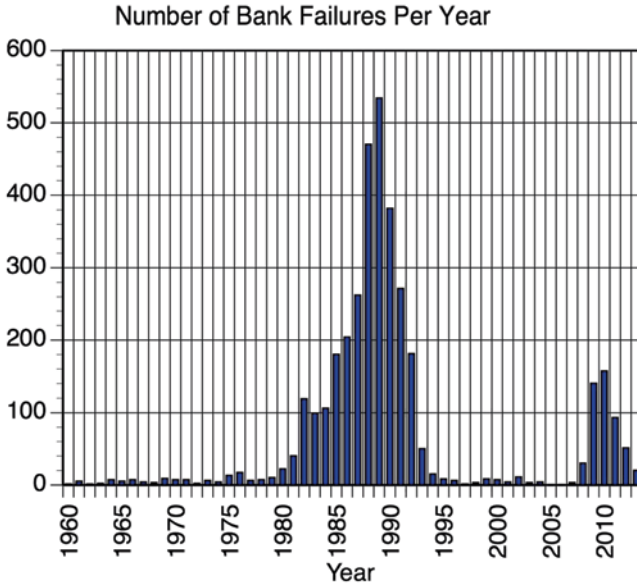


**Table 1.27** Largest bank failures in recent history ([http://en.wikipedia.org/wiki/List\\_of\\_largest\\_U.S.\\_bank\\_failures](http://en.wikipedia.org/wiki/List_of_largest_U.S._bank_failures))

Bank	City	State	Date	Assets at failure (\$ billion)
Washington Mutual	Seattle	Washington	2008	307
Continental Illinois National Bank and Trust	Chicago	Illinois	1984	40.0
City Federal Savings and Loan	Elizabeth	New Jersey	1989	39.8
First Republic Bank	Dallas	Texas	1988	32.5
IndyMac	Pasadena	California	2008	32
American Savings and Loan	Stockton	California	1988	30.2
Colonial Bank	Montgomery	Alabama	2009	25
Bank of New England	Boston	Massachusetts	1991	21.7
MCorp	Dallas	Texas	1989	18.5
FBOP Corp banking subsidiaries	Oak Park	Illinois	2009	18.4
Gibraltar Savings and Loan	Simi Valley	California	1989	15.1
Guaranty Bank	Austin	Texas	2009	13.0
First City National Bank	Houston	Texas	1988	13.0
BankUnited FSB	Coral Gables	Florida	2009	12.8
Downey Savings and Loan	Newport Beach	California	2008	12.8
HomeFed Bank	San Diego	California	1992	12.2
AmTrust Bank	Cleveland	Ohio	2009	12.0
WesternBank	Mayaguez	Puerto Rico	2010	11.9
United Commercial Bank	San Francisco	California	2009	11.2

seventh-largest bank, Continental forced regulators to recognize not only that very large institutions could fail but also that bank regulators needed to find satisfactory ways to cope with such failures.

A list of the largest bank failures in the USA in recent history is provided in Table 1.27. Figure 1.29 shows the number of bank failures per year since 1960. The annual number of failures was small until the S&L crisis of the 1980s. This is discussed in Sect. 2.5. Another flux of bank failures occurred during the recession years after 2008. In both cases (the 1980s and post-2008), bank failures were due to excessive speculation in real estate coupled with inadequate regulation. The number of post-2008 failures was amplified by overly optimistic ratings by bond rating agencies (see Sect. 2.11).



**Fig. 1.29** Number of bank failures per year. (<http://www.davemanuel.com/history-of-bank-failures-in-the-united-states.php>)

The following is taken from a CNBC web page:<sup>83</sup>

During the frenzied days of September 2008, as the US financial system teetered on the brink of collapse, the government chose winners and losers. Washington Mutual, the country's largest savings and loan bank, fell into the latter camp.

Despite its size—the bank had \$307 billion in assets—it wasn't quite big enough to be considered "Too Big To Fail." So on Sept. 25, 2008, federal regulators marched into its headquarters in Seattle and seized the bank, turning over its assets to JPMorgan Chase for \$1.9 billion.

That collapse marked the largest bank failure in US history, far bigger than that of Continental Illinois, which failed in the 1980s and had just \$40 billion in assets. Despite this tantalizing selling point, WaMu's failure hasn't received nearly the public scrutiny that many of the other casualties of the financial crisis have received—Bear Stearns, Lehman Bros., AIG, etc.

The reason for its lack of headline play is the same reason it was allowed to fail in the first place: it was an afterthought.

In other words, the bank had virtually no political clout. That's in large part because its long-time chief executive, Kerry Killinger, did not place an emphasis on building up relationships in Washington. He in fact tried to avoid doing so

<sup>83</sup> <http://www.cnbc.com/id/47874555>.

altogether. Whether companies should be forced to engage in that sort of charade at all is debatable, but one thing is certain: Killinger's dearth of friends in high places, coupled with the bank's far away headquarters in Seattle, directly contributed to its downfall.

Killinger was no match for Jamie Dimon, the chief executive and chairman of JPMorgan Chase, who considers government relations a separate line of business. Dimon had long wanted to buy WaMu for its tantalizing retail branches scattered across the West Coast. As WaMu endured an epic bank run in the summer of 2008, Killinger tried to call in help from then Treasury Secretary Hank Paulson. Paulson told him there would be none coming. "You should have sold to JPMorgan," Paulson chastised. "Things could get a lot more difficult for you." (JPMorgan had tried to buy WaMu in the spring of 2008 and was turned down by the bank in favor of private equity.)

During the frantic weeks before WaMu collapsed, the bank's new chief executive Alan Fishman, put in place after WaMu's board ousted Killinger, tried to quickly repair relationships in Washington in order to save the bank. But it was too late. "They were done with WaMu," Fishman said.

Killinger would later, to much hilarity, describe the financial institutions that did get bailouts as, "too clubby to fail."

There are a lot of lessons to be learned from the story of WaMu, only one of which is the premium companies must now place on Washington.

After enduring the subprime mortgage crisis of the early twenty-first century, several things are clear:

- Banks can act (and have acted) with abandon to invest funds in speculative ventures, knowing that depositors will not lose their money because the FDIC will bail them out if they fail.
- Contrary to the opinion of Mr. Patman, the S&L scandal of the 1980s and the subprime scandal of the 2000s underscore the need for banks to be regulated more closely and deprived of speculative options.
- Deregulation is not the same as no regulation.
- The FDIC has adequate funds to cope with the year-to-year occasional bank failures that occur in ordinary business.
- The FDIC is not equipped with funds or manpower to deal with widespread banking abuses such as occurred in the S&L scandal of the 1980s, the subprime fiasco of the 2000s, or the collapse of the real estate bubble in 2008.
- The very existence of a FDIC backed by the government should be predicated on the requirement that regulators must prevent wild, speculative ventures by banks using depositors' money.

For the future, if short-term interest rates rise inordinately, banks and investors holding long-term fixed mortgages will be back in the same situation that S&Ls were in during the 1980s. Revenue from fixed-rate mortgages will not compensate for interest paid to depositors. Perhaps that is why the Fed continues to drive down interest rates. If interest rates rise too much, the whole banking business could collapse.

## 1.14 Regulation, Deregulation, and No Regulation

### 1.14.1 Introduction

As the nation sunk into a deep depression in the early 1930s with thousands of bank failures, it became apparent that there was a need for governmental regulation of banks and utilities. Legislation was passed in the 1930s to provide regulation of banks and utilities, and later, the transportation industries were regulated as well. Government regulation of banks was supposed to provide oversight to enforce conservative investment practices, with depositors' accounts insured by the government. Government regulation of utilities required that in consideration of the exclusive monopoly provided to a utility in its locale, the utility must operate for the benefit of the public it served, although it was entitled to a fair profit—set by government-appointed regulatory agencies. The regulation of the transportation industries was aimed at assuring public safety and fair pricing. These policies worked well for several decades.

In the late 1970s, it came into vogue that economists (particularly those leaning toward the Republican persuasion) argued that government regulation was a stifling influence that inhibited progress. According to this view, introduction of competition in these industries would foster innovation and progress, leading to improved service and lower rates to the public. In addition, there was a growing sympathy for the Republican view that nothing the government does is good, and minimization of all government activities (except for the military) became a central theme of the Republican Party.

By 1980, there was a widespread belief that deregulation of formerly regulated industries would provide great benefits. In 1980, Ronald Reagan was elected president. He had an unwavering antithesis to any government activity at all (except of course the military) and with a religious fervor, pursued deregulation of everything. Furthermore, he interpreted deregulation as essentially *no regulation*.

It is remarkable that during the presidential primaries of 2008 and 2012, all three major Republican presidential candidates vied with one another in the

claim that they were the most like former president Ronald Reagan. Their awe and reverence for Mr. Reagan was limitless. Yet Reagan was an unexceptional person with incipient Alzheimers.

Two very good things happened during Reagan's term in office, *neither of which was due to his actions or policies*. One was the sharp drop in oil prices and the temporary end of tight energy supplies, and the other was the collapse of the Soviet Union and the end of the cold war.

However, two very bad things occurred during the Reagan administration, and these *were* due to his overt policies.

One was that he originated the new fiscal policy that has guided the Republican Party from 1980 through 2008. While the Republican Party in the post-WWII years favored reduced government expenditures, lower taxes, a balanced budget, reduced foreign aid, and a foreign policy that leaned toward isolationism, Mr. Reagan made it all seem so simple: Cut taxes, particularly for the wealthy, and the trickle-down effect would bring prosperity to all Americans, and governmental revenues would rise (not fall) due to the putative resultant prosperity. Nevertheless, Mr. Reagan was unable to cut government expenditures, and in fact, he increased defense expenditures, so that he originated the era of annual multi-hundred billion-dollar deficits after 1980. His claim that lower taxes produce greater government revenues, which has been a Republican mantra for three decades, has been proven wrong ever since. The one exception was the peak period of the *dot.com* bubble that generated so much temporary capital gains tax that deficits were greatly reduced—until the bubble popped.

The other innovation introduced by Mr. Reagan was the belief that banks should not only be *deregulated* but they should be completely *unregulated*. The contributing factors to the S&L scandal of the 1980s occurred under his administration, with his approval, both tacit and overt, as administered by his Secretary of the Treasury, Donald Regan.

According to Delamaide,<sup>84</sup> in Reagan's third fiscal year, "the deficit had turned into a mad bull elephant, raging out of control."

During the presidency of Ronald Reagan, multiple scandals developed which resulted in a number of administration staffers being convicted. The most well known, the Iran–Contra affair, involved a plan whereby weapons were sold to Iran and the profits diverted to fund the Nicaraguan Contras, in violation of US and international law. This was done because Congress would not authorize funding the Contras from government funds. For this alone, Mr. Reagan should clearly have been impeached.

---

<sup>84</sup> Delamaide (1984).

A total of 225 people who served in the Reagan administration either quit, were fired, arrested, indicted, or convicted for either breaking the law or violating the Ethics Code; Edwin Meese alone, the Attorney General, was investigated by three separate Special Prosecutors.

Several other controversies also occurred in the Reagan administration; one involved Department of Housing Secretary Samuel Pierce and his associates. Wealthy contributors to the administration's campaign were rewarded with funding for low income housing development without the customary background checks, and lobbyists, such as former Secretary of the Interior James G. Watt, were rewarded with huge lobbying fees for assisting campaign contributors with receiving government loans and guarantees. Six administration staffers were convicted.

Also involving the EPA: funds from the Superfund to clean up toxic waste sites were released to enhance the election prospects of local politicians aligned with the administration.<sup>85</sup>

As we discuss at length in Sect. 2.5.3, Reagan's policies of no regulation was a major factor contributing to the S&L debacle of the 1980s. Nevertheless, deregulation as a concept continued to flourish, even in the face of its continual abject failures. Deregulation of telephone service has produced higher rates and poorer service. Prior to deregulation of telephone service, I had one telephone book published by AT&T, and it contained everything I needed. Today, I have eight telephone books and none of them is worth opening. Deregulation of airlines sent many airline companies into bankruptcy and airline service gets worse and worse. Deregulation of banks produced the subprime mortgage fiasco of 2002–2007. With the government underfunding regulatory agencies, even the low-level regulation appropriate for a “de-regulated” system has been absent. As JKG said,

In recent times it has become obligatory for the [bank] regulators at every opportunity to confess their inadequacy, which in any case is all too evident.<sup>86</sup>

It is noteworthy that from 1997 through 2012, average costs of electric power in deregulated states ran about 15–20% higher than in regulated states.<sup>87</sup>

A website<sup>88</sup> claims that the number of financial regulations increased from 1997 to 2007, and therefore deregulation did not cause the financial crisis

<sup>85</sup> [http://en.wikipedia.org/wiki/Reagan\\_administration\\_scandals](http://en.wikipedia.org/wiki/Reagan_administration_scandals).

<sup>86</sup> Galbraith (1954).

<sup>87</sup> Retail Electric Rates in Deregulated and Regulated States: 2012 Update (2013) American Public Power Assn. Report, [http://www.publicpower.org/files/PDFs/RKW\\_Final\\_-\\_2012\\_update.pdf](http://www.publicpower.org/files/PDFs/RKW_Final_-_2012_update.pdf).

<sup>88</sup> <http://mercatus.org/publication/did-deregulation-cause-financial-crisis-examining-common-justification-dodd-frank>.

of 2008. However, merely counting regulations proves nothing. It is the few critical regulations and the way they are enforced that matters. Clearly, the lack of regulation of the mortgage industry and the bond rating industry were proximate causes of the financial crisis of 2008.

### 1.14.2 Example of the Airlines

The airlines were deregulated in October 1978. Since then, there has been a continuing debate between those who think the net outcome of this policy was favorable and those who oppose it.

The system before deregulation was described as follows:<sup>89</sup>

The industry was relatively stable prior to the Air Transportation Regulatory Reform Act. Everyone knew which carriers flew into which cities. Since the Civil Aeronautics Act of 1938, each airline was under the strong domination of the Civil Aeronautics Board (CAB). Part of this domination was the determination of “who served what cities how often.” Each line had to go through a rather lengthy and elaborate process to implement any change in their route structure. The result of this red tape was a set of clearly defined, understood and respected territories. That is to say, each carrier had their own territory of service and they worked within that area. In time, a sort of “gentlemen’s agreement” formed between airlines. “We will stay out of your cities if you stay out of ours.” For forty years this type of arrangement worked well.

In this stable route system, hubs were established through which a large amount of the line’s traffic flowed. Such bases included Dallas-Ft. Worth for American, Denver for United and Atlanta for Delta.

Basic airline economics dictate that long-haul flights are more profitable than shorter hops. Therefore, the extra money made on long trips was used to subsidize the less profitable, shorter flights. Consequently, airlines could afford to serve medium, small and non-hubs on a regular basis.... Fares increased and decreased slowly, and were relatively predictable. All air carriers charged basically the same rates and everyone was happy.... The result was a national air net comprised of trunk lines going to a vast majority of cities with tiny feeder lines radiating from those cities.... Airlines were viewed as ‘quasi-public utilities.’ Each line was granted a semi-protected working territory. The government, in return, took some control over the fares and operations. With all of this self-protective regulation coupled with huge start-up costs, small airlines just could not get into the larger markets. The result was, a steadily, growing, healthy industry.

---

<sup>89</sup> Zibell, Michael, Airline Deregulation – Good, Bad or Difficult? <http://www.gammathetaupsilon.org/the-geographical-bulletin/1980s/volume24/article1.pdf>.

After the airlines were deregulated in October 1978, any airline could enter or retract from existing markets, as it desired, and prices for seats were up to the airlines to set.

As a result of deregulation, many unprofitable routes were deleted and small cities endured significant service cuts from big carriers. “This move freed carriers to utilize their equipment in higher density, more profitable markets, as well as in newly expanded market areas. The result was often a rapid expansion and/or contraction into or out of market areas.” Although the big carriers with familiar names no longer scheduled flights to small cities, feeder lines and commuter lines filled the holes by flying more often to the small cities.

In general, airline fares have fallen since deregulation was passed. However, fares in shorter distance and less traveled markets have not fallen as much as fares in long distance and heavily trafficked markets.<sup>90</sup> More importantly, there is no evidence that this is due to deregulation. Many other changes took place in the past 30 years, particularly the advent of advanced computers for management of air traffic, as well as many downgrades in airline service.

Since deregulation, more than 170 airlines have gone into bankruptcy, with some restructuring and reemerging, but most being liquidated. In recent years, the bankruptcies of Delta, Northwest, United, and US Airways are considered among the largest corporate bankruptcies ever, excluding financial services firms. How much deregulation is the root cause of more than half the industry going belly-up is a much-debated topic. Other factors—recession, high fuel costs, bad management, greedy labor, and low demand—are often blamed and have little to do with regulation. Other culprits like excessive capacity were closely monitored during regulation. Advocates of regulation point out, however, that recent economic factors have not risen to the level of crisis seen in the early 1970s when recession and the Arab Oil Embargo of 1973 hit the U.S. hard, but during which the airlines all skated through with minimal disruption and profits.

Over the last few years...both United and US Airways entered bankruptcy, voided labor contracts, and terminated their pension plans.... Northwest Airlines’ pilots agreed to two pay cuts during recent bankruptcies—a 15% cut in 2004 and a 23.9% cut in 2006. On average, the number of employees for a legacy airline has decreased by 26% since 1998, with the payroll shrinking from about 42,558 employees to an average of 31,346. Pension plans have also been cut, costing the Pension Benefit Guaranty Corporation, the federal government insurer of defined benefit plans, \$10 billion and beneficiaries more

---

<sup>90</sup> <http://moritzlaw.osu.edu/news/allrise/2009/01/30-years-after-airline-deregulation-who-is-the-big-winner/>.



than \$5 billion. Only two airlines still have active defined benefit pension plans.<sup>91</sup>

There are many more reviews of the aftermath of airline deregulation. However, as we pointed out previously, not all of the changes in airline service can be attributed directly to deregulation. The common wisdom is that deregulation reduced fares but made it more difficult for airlines to remain profitable. Service to smaller cities seems to have been impacted. The hub and spoke system was amplified.

My own personal experience includes the following differences from pre-deregulation days:

- There are fewer flights and they get fully booked well in advance. It is far more difficult to get the flight at the hour and day you want than before deregulation.
- The hub and spoke system has made it difficult to fly nonstop, thus necessitating more one-stop and two-stop flights. Because many flights are often late, it is necessary to leave long layover times to assure that you will not miss your connection. Trip times are often 4 hours longer than before deregulation.
- My experience with flying from a big city (Detroit) to a small airport (Pellston, MI) has been disastrous. I have flown this round trip four times, and every time the flights were either cancelled or several hours late. I was told that pilots do not show up because the pay is so low, although I cannot confirm that.
- Compared to pre-1978, airlines treat clients like cattle with minimum care, service, and attention. Planes are packed full like cattle cars.

## 1.15 Pension Plans

### 1.15.1 Corporate Pensions

#### 1.15.1.1 Defined Benefit Plans

Traditionally, large corporations have provided pension plans for their long-term employees at no (or moderate) cost to employees. These *defined benefit plans* typically required up to 10 years for vesting, and promised to pay out some percentage of an employee's maximum earnings based on their years of

---

<sup>91</sup> <http://moritzlaw.osu.edu/news/allrise/2009/01/30-years-after-airline-deregulation-who-is-the-big-winner/>.

service. Most plans began retirement payments at age 65 but some provided lower payments for earlier retirement.

Shiller pointed out that most *defined benefit plans* were not indexed to inflation and that people who retired and lived a long time after retirement under defined benefit plans often saw a substantial part of the real value of their pensions eroded away by inflation during their retirement years. However, most of these plans were based on the highest salary achieved during the worker's tenure, so at least they were implicitly indexed for inflation for the period of employment. But, they were not indexed for inflation after retirement.

It is not clear what requirements (if any) were imposed in the past (prior to the Employee Retirement Income Security Act (ERISA) in 1974) on corporations to maintain funds for future retirement payments. It seems likely that some companies voluntarily put aside funds to pay for future retirement obligations, while others may have merely hoped that future earnings would expand to cover future retirement obligations. On the other hand, some companies treat future retirement payments as a probability, rather than a certainty. For example, this quotation is taken from the Kaiser Permanente rulebook for retirement of doctors:

Benefits from this plan are based upon Health Plan's ability to pay. No trust or other separate fund or individual account is established, nor is an annuity established for the plan participants. If Health Plan is unable to pay its obligations, Plan participants are considered general creditors and have no preferred status or priority over claims of other Health Plan creditors.

Even for those companies that did put aside funds for future retirement obligations, there are questions as to how much was needed on an actuarial basis, and what assumptions should be made regarding future earnings of the funds. While investment in government bonds may be the most prudent course, such stodgy investment policies fell out of favor beginning with Reagan's election in 1980. Under ERISA of 1974, minimum funding requirements were established for defined benefit plans, but retirement plans were permitted to assume corporate bond yields for future earnings (rather than lower government bond yields). With the advent of the great stock bull market in 1982, corporations tended to invest retirement funds into the stock market. In some cases (Enron, Ford, etc.), they invested the retirement funds almost exclusively into their own corporate stock (thus providing a buying boost for their stock) but when their stock price went south, the retirement assets also declined.

Legislation has been enacted to protect the interests of employees with defined benefit plans. These include the ERISA of 1974, the establishment of

the Pension Benefit Guaranty Corporation (PBGC) in 1974, and the Pension Protection Act of 2006. Despite these small steps toward pension security for employees, significant problems remain for those companies that either (a) made inadequate provisions in the past, (b) made poor investment decisions in the past, or (c) face financial hardship in providing for promised retirement benefits. The PBGC does not seem to have adequate funding to protect the interests of employees with failing corporate *defined benefit plans* and as a result, it has limited its responsibility to a sliding scale of benefits running from a maximum of about US\$ 4000/month at age 65 to about US\$ 2500/month at age 58. The PBGC does not pay health or other benefits. It is difficult to get accurate recent data on the degree of underfunding of corporate retirement plans.

The PBGC used to publish an annual list of the 50 companies with the most underfunded pension plans. But in 1997, under pressure from companies, they ended this practice. There are conflicting data on the Internet. According to an Internet source, status reports for 2004 for 1108 pension plans covering about 15 million workers and retirees were filed with the PBGC by April 15, 2005, showing that underfunded pension plans reported a record shortfall of US\$ 353.7 billion, up from US\$ 279.0 billion for 2003. The underfunded plans had US\$ 786.8 billion in assets to cover more than US\$ 1.14 trillion in liabilities, for an average funded ratio of 69%. It was claimed that as of September 30, 2004, the PBGC estimated that the total shortfall in all insured pension plans exceeded US\$ 450 billion. In the same report, it said that a loophole allowed United Airlines to go for years without making any cash contributions to its retirement plans, without paying additional premiums to the PBGC, and without sending underfunding notices to plan participants even though United's plans have an aggregate funding shortfall of almost US\$ 10 billion and an average funded ratio of 41%.

Recent data show that the underfunding of corporate pension plans was a maximum in 2002 and had greatly diminished by 2007. Since a significant portion of these funds is invested in stocks, the deficit or surplus (as the case may be) will depend on stock market performance. The surplus built up in the *dot.com* boom in 1997–1999 disappeared in the aftermath of the stock market collapse. See Table 1.28.

Since 2011, the booming stock market has greatly improved the pension status of the S&P 500 companies. A recent Reuters article<sup>92</sup> reported “an aggregate improvement of more than US\$ 300 billion in their pension plans, a gain that brought assets to around 93% of expected obligations.”

---

<sup>92</sup> <http://www.reuters.com/article/2014/01/24/usa-pensions-funding-idUSL2N0KW1MB20140124>.

**Table 1.28** Funding for single-employer pension plans for S&P 500 companies (in millions of dollars). (By permission from S&P Dow Jones Indices <http://www.spindices.com/documents/research/sp-500-2011-pensions-and-opeb-201207.pdf>)

Year	Assets	Obligations	Status	Funding ratio
2011	1,321,962	1,676,615	-354,654	0.788
2010	1,273,321	1,518,314	-244,993	0.839
2009	1,160,202	1,420,912	-260,709	0.817
2008	1,100,149	1,408,580	-308,432	0.781
2007	1,504,516	1,441,135	63,380	1.044
2006	1,470,964	1,511,301	-40,337	0.973
2005	1,318,010	1,458,439	-140,430	0.904
2004	1,265,338	1,429,667	-164,328	0.885
2003	1,113,478	1,278,265	-164,787	0.871
2002	950,963	1,169,472	-218,509	0.813
2001	1,089,896	1,086,950	2946	1.003
2000	1,238,920	1,012,893	226,027	1.223
1999	1,274,083	994,061	280,022	1.282

The things that are crazy about this whole system are that

1. Pensions are too sacred to be subject to the whims of the stock market that go up and down too much, considering that pensions provide the life support for long-term employees in their old age.
2. Yet, corporations are loath to provide adequate funds for pensions without relying on double-digit growth of stock market indices.

Perhaps the answer is to end defined benefit plans altogether and shift to defined contribution plans whereby the worker is responsible for his own retirement management. But are workers sufficiently knowledgeable to manage these funds?

### 1.15.1.2 Defined Contribution Plans

An alternative to a *defined benefit plan* is a *defined contribution plan*. In a *defined contribution plan*, the employee makes a contribution of funds from each paycheck to a vested account in his name and in most cases, the employer also makes a contribution. These funds are maintained by the employee in a separate account, administered by a large financial organization such as Fidelity or Principal.com, and are beyond the reach of the employer. Most of these

**Table 1.29** Comparison of defined benefit plans with defined contribution plans

Characteristic	Defined benefit plan	Defined contribution plan
Who pays for it?	Employer	Employee and (usually) employer
Minimum age for retirement	Set by employer, typically 65	Set by employee, but 10% penalty if withdrawals made prior to age 59.5
How secure is it?	Dependent on funds set aside by employer and health of company	Absolutely safe, but amount is dependent on financial management by employee
Does it provide for heirs if you die early?	Typically, no benefit once you die	Yes. The funds are always there for your heirs, even if you die
Can you lose it?	Yes, if a company mismanages the fund, or goes into financial hard times	Only if the employee mismanages the funds
Can you increase the amount by adding more contributions?	No. The plan is fixed	Yes, up to the statutory limit. But it reduces your paycheck
Is it portable?	If you change jobs, the benefits may not be vested, and if they are vested, the value may be small	If you change jobs, you retain ownership of the 401(k) account

accounts are so-called 401(k) accounts, but there are also 403(b), Keough, and other forms of *defined contribution plans*. Some characteristics of these plans are compared to defined benefit plans in Table 1.29. In general, there are great advantages to *defined contribution plans*. These include (1) the funds are under your management and cannot be lost by the company, (2) you can up the ante by raising your contributions voluntarily, (3) in an emergency, you can withdraw funds any time but pay a 10% penalty if before age 59.5, and perhaps most important of all, (4) your heirs inherit the fund if you die before you use it up—it is your money, not the employer's.

During the latter part of the twentieth century, there was a gradual shift away from *defined benefit plans* to *defined contribution plans*, and today, many retirement plans are 401(k) *defined contribution plans* (although most governments continue with defined benefit plans).

The main disadvantage to the employee of a *defined contribution plan* is that it requires that the employee be sufficiently astute financially to invest his or her funds wisely over many years. The common wisdom is that stocks represent the best long-term investment, and indeed that has been true since the great bull market started in 1982. Most white collar and professional em-

employees put the majority of their 401(k) funds into stocks and live or die with these investments. Shiller pointed out:

...401(k) and similar plans were designed to give ordinary people economic security in retirement by encouraging them to mimic the portfolio strategies long pursued by the wealthy.... But little attention is usually paid to the fact that the wealthy, because of the overall level of their assets, have less reason to worry about losing substantial amounts in a market decline.

Thus, 401(k) plans free employees from tyranny by employers, but they place the additional burden of responsibility on the employee for finance decisions. Again, as Shiller pointed out, employees are typically given several investment choices, including a variety of stock market investments, and “thus there is a not-so-subtle nudge in the direction of investing heavily in the stock market.” Shiller went on to say that those who offer 401(k) plans typically provide several options for investing in stocks but very few (if any) bond options.

From the employers’ point of view, the defined contribution 401(k) plan is very attractive. It eliminates long-term liability by the company. As Shiller said,

Employers promised only that they would contribute a certain amount to an employee’s nest egg while he was working. What happened to the money after they parted was the employees’ responsibility. How long they lived, and how far their savings stretched, was their problem, not the employer’s.

As Mahar pointed out,<sup>93</sup> boomers could be expected to live longer than their parents, and corporate profits were sluggish. In addition, the ERISA passed in 1974 made it both more difficult and more expensive to run a traditional pension program.

Shiller estimated that 2/3 of 401(k) funds were invested in the stock market in 2003, and with the rise in market average from 2003 to 2006, that proportion probably increased significantly. The downturn in late 2007 and 2008 made retirement schedules precarious for many middle-aged employees. Shiller emphasized this risk. He also pointed out: “Managers of 401(k) plans generally do not offer advice to employees about how they should make their allocations.” Worse still, managers are not held responsible for the choice of investments offered to participants.

In the 1980s, the California Institute of Technology (Caltech) offered participants in its 401(k) plan the choice of Teachers Insurance and Annuity Association – College Retirement Equities Fund (TIAA-CREF) or Mutual Benefit

---

<sup>93</sup> Mahar (2003).

Life Insurance (MBLI). TIAA-CREF offered bond and stock investments and MBLI offered only a bond-like investment. MBLI was a triple-A company for many years, but then fell prey to “go-go” real estate ventures of the 1980s and its finances declined sharply toward the end of the 1980s. Caltech’s view (apparently) was that having chosen MBLI initially, it was under no further obligation to track the company and its status and performance. Yet, there is some evidence that the impending decline of MBLI was known to many on Wall Street, although Caltech was more concerned with the theory of relativity. When Caltech finally woke up to the danger, it was rather late in the game, and most of the Caltech 401(k) participants in MBLI were stuck there, as MBLI receded into bankruptcy. Caltech refused any relief to its employees, and its position was upheld by the courts. In the final settlement, employees were given a multiyear payout settlement that involved significant losses to all participants compared to what they would have accumulated had they been able to transfer their funds to TIAA-CREF. Considering that Caltech chose MBLI in the first place from hundreds of companies, should Caltech have had the responsibility to track MBLI, and warn employees to transfer out at a sufficiently early date? Apparently, the courts said no.<sup>94</sup>

### 1.15.1.3 The Public Sector

According to Shiller,

State and municipal pension plans face an unfunded liability of upwards of \$ 1 trillion. And the worse news is the public sector has an additional unfunded liability half again as big for other post-retirement expenses such as health care, a staggering \$ 1.5 trillion.

According to the New York Times,<sup>95</sup>

Almost half of the states have been under-funding their retirement plans for public workers and may have to choose in the years ahead between their pension obligations and other public programs.... All together, the 50 states have promised to pay some \$ 2.7 trillion in pension and retiree health benefits over the next 30 years. This amount does not include separate retirement plans run by local governments. While some states are managing their costs reasonably well, the center found that others, like New Jersey and West Virginia, have

---

<sup>94</sup> The author was an employee of Caltech and a participant in MBLI in 1991. He was one of the lucky few that extricated their funds from MBLI before it went into bankruptcy. Had he suffered with the more than 300 others who were stuck in MBLI, he might not have been able to retire when he did.

<sup>95</sup> <http://www.nytimes.com/2007/12/19/business/19pension.html>.

made serious mistakes and are now cutting education and health programs as they struggle with costs incurred decades ago. Still more states are at risk of being caught in a similar squeeze, ... because they are not setting aside enough money now, as their populations age and more public employees approach retirement. ... Unlike companies, state and local governments are not subject to federal pension laws, which set uniform standards for private industry. If a company skips its required pension contributions, it can be required to pay a big excise tax. No comparable enforcement mechanism exists for states.

There are some extreme cases that have made the news.

According to Internet sources, New Jersey decided in 1994 to stop setting aside money in a fund to pay for health care for its retired public workers, thus allowing a big tax cut. Public workers were told that as long as they worked 25 years, the system would provide virtually free health care for them when they retired, often when they were as young as 55. It is claimed that New Jersey will need about US\$ 58 billion, in today's dollars (US\$ 6700 per capita), to provide all the care it has promised its current and future retirees. That is nearly twice the state budget and nearly twice the amount of its outstanding debt. However, the governor claimed<sup>96</sup> that the debt is more like US\$ 32 billion, or US\$ 3700 per capita. But he did admit that: "those numbers will grow dramatically in the years ahead if we accept the status quo." In addition to the bonded debt, he added US\$ 25 billion in unfunded pension liabilities and an estimated US\$ 60 billion in future health-care costs for retirees. He concluded that the total obligation of the State of New Jersey amounts to US\$ 45,000 per household.

And, because of the step it took in 1994, the state has virtually no money in reserve to cover those costs.

In addition, New Jersey's towns and other local governments owe about US\$ 10 billion for health care for their own retirees.

In a similar manner, the Orange County Register reported that

In 1996, the city of San Diego purposely began under-funding its municipal pension system even as it increased retiree benefits, a policy that continues even today. For years, above-average returns on Wall Street permitted the city to convince the trustees of the retirement system that this approach was less dangerous than it sounded. When the financial markets went down beginning in 2000, city officials kept the trustees on board by increasing pension benefits yet again and by creating special benefit enhancements that seemed targeted toward the trustees and the leaders of key municipal unions. In other words, the city promised more, put aside less and hoped that the financial markets

---

<sup>96</sup> <http://www.state.nj.us/sos2008/speech.html>.



would come to the rescue once again. The markets didn't cooperate, however, so now the city retirement system has a \$ 1.4 billion deficit and hundreds of millions of dollars more in unfunded retiree health-care costs.<sup>97</sup>

It has been reported on the Internet that the total Illinois bond and pension debt amounts to US\$ 65 billion, or about US\$ 5300 per capita.

These are just a few examples of many states and municipalities that face serious obligations in the future that they are unlikely to be able to meet without great privation.

## 1.16 The Valuation of Common Stocks

Valuation of common stocks was discussed at length by Smith.<sup>98</sup> In the early 1920s, stocks were valued primarily by the dividends that they paid. Since stocks were considered to be riskier than bonds, stocks had to pay a higher dividend than bonds to compensate for the higher risk. Typical dividends on NYSE listed industrial stocks were in the range 5–6%. In those days, it was expected that an industrial corporation would pay out roughly half of its earnings as dividends. Hence, if dividends were 5% of the stock price, earnings would be 10% of the stock price, so the “normal” stock price/earnings ratio (P/E) would be about ten, and that was a common *rule of thumb* for valuing common stocks.

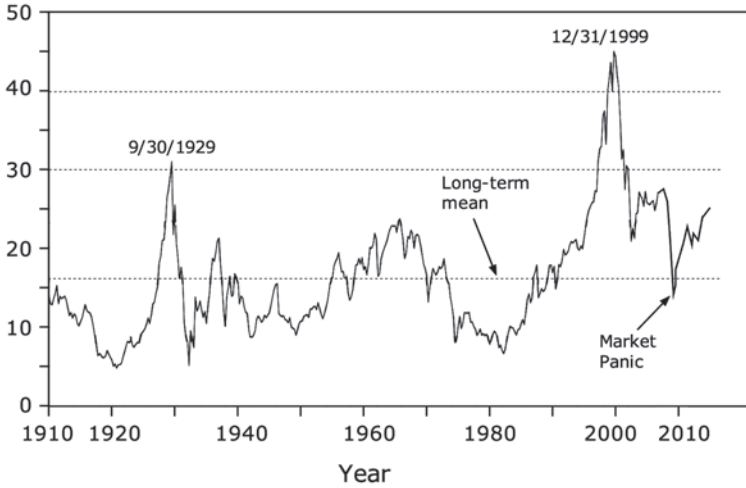
In those days, the main reason to own a stock was to share in corporate profits by collecting dividends, and the current dividend, together with prospects for further increases, if future earnings increased, thus gradually driving up stock prices.

However, some companies began to pay out a lower percentage of earnings for dividends, using a higher proportion of retained earnings for expansion. A number of prominent voices in the early 1920s argued for new approaches to valuing stocks based on expectations of future growth in earnings that would allow implicit future increases in dividends. Thus, in an era of growth the argument went that the price of a stock should reflect future earnings prospects more than current dividends. As we have discussed previously, the advent of the automobile, travel, transportation by truck, industrialization, and consumer spending as major elements of the economy, spurred investors' imaginations for future growth. In an era where it was perceived that companies might grow enormously in a short time, a belief grew that a higher P/E

---

<sup>97</sup> [http://www.ocregister.com/ocr/sections/news/focus\\_in\\_depth/article\\_495528.php](http://www.ocregister.com/ocr/sections/news/focus_in_depth/article_495528.php).

<sup>98</sup> Smith (2004).



**Fig. 1.30** History of the price/earnings ratio of the Shiller version of the S&P 500 Index. (Adapted from Smith 2004)

ratio was justified. As can be seen from Fig. 1.30, the average Shiller computation of the P/E ratio of the S&P 500 Index rose upward from below 10 to just more than 30 in the roaring 20s, just before the crash of 1929.

Prof. Robert Shiller of Yale University invented the Shiller P/E to measure the market's valuation. The Schiller P/E is a more reasonable market valuation indicator than the conventional P/E ratio because it eliminates fluctuation of the ratio caused by the variation of profit margins during business cycles. The Shiller P/E is calculated not by taking the ratio of the current index to current earnings, but rather by taking the ratio of the current index to average earnings over the past ten years. During economic expansions, companies have high profit margins and earnings. The P/E ratio then becomes artificially low due to higher earnings. During recessions, profit margins are low and earnings are low. Then the regular P/E ratio becomes artificially high.

In the current era of the early twenty-first century, the philosophy of valuation of stocks has been inverted. Instead of valuing stocks in terms of their ability to pay dividends, and treating stocks as being riskier than bonds, therefore requiring a higher yield than bonds, the markets have adopted a very different paradigm. Today, we have a “go-go” bubble mentality, and the greater risk is seen in bonds—the risk that you will miss out on a meteoric rise in stock prices. There are two possible reasons to buy stocks—for their dividends, or for price appreciation. In the current markets, dividends provide relatively little attraction, and price appreciation seems to be the overwhelming motivation for owning stocks. Driven by the great rise in stock prices since 1982, many investors expect and count on double-digit increases in

stock prices each year and sneer at merely collecting interest from bonds or dividends from staid old blue-chip stocks. In fact, dividends are hardly a consideration in determining stock prices any more. However, the only way that one can directly share in the profits of a corporation is through dividends. It is only because of the expectation that one can sell shares to a future buyer that stockholders are willing to bid up stock prices and thereby drive down dividend yields. Some companies must plow back most of their earnings into new product development. As Eliot Janeway said: “The price of staying in business became continuous investment.”

There are many theories as to how to value common stocks. Most analysts concentrate on individual stocks, and talk about earnings, earnings prospects, takeover prospects, sales, etc. The ability of analysts to predict future stock movements seems to be minimal (see Sect. 1.16 on “Innocent Fraud”). Most analysts can explain everything and predict nothing. On the other hand, those with inside information have a special advantage, and even though the SEC purports to constrain use of inside information in stock trading, there are thousands of instances of major stock movements prior to public announcements of great importance. This suggests that insider trading, though illegal, is rampant. Another theory is that the whole stock market tends to move together, upward and downward, and picking individual stocks is an effort in futility, except for a few special situations. Hence, market timing is the key to stock gains according to this theory. Indeed, if you buy stocks at the wrong time, it can take many years to break even. According to some, the stock market is implicitly a money market. When the money supply is plentiful, money flows into the markets and stocks rise. When the money supply is tight, money flows out of the markets and stocks fall. That is why investors respond with exuberance to each action of the Federal Reserve System. The Republican administrations since Reagan in 1980 passed tax legislation favorable to stock ownership and have flooded the money markets, making savings less attractive. More recently, Mr. Obama has outdone the Republicans in this regard. From this viewpoint, the P/E ratio is not very important. However, as Fig. 1.30 demonstrates, the long-term mean of the Shiller S&P 500 P/E is 15.7, and when this ratio reaches upward toward 30 or 40, the markets inevitably seem to crash afterwards.

But once the public discarded dividends as the basis for valuing stocks, the valuation process changed from being *objective* to being *subjective*. The principal reason to own stocks is no longer to share in the profits from companies via dividends, which tend to change gradually with time. Impatient investors want much larger returns, more quickly. The main reason that people now have for investing in stocks is to hold paper that they hope to sell at an inflated price in the future. How high (or low) a stock price can go is no

longer a matter of computation based on objective standards, but instead is a matter of whim, fancy, hope, expectation, and luck. The result has been an increase in volatility. However, fortunately for investors, there is a widespread belief throughout the land that stocks are the best intermediate-term and long-term investments, and the great majority of 401(k) retirement funds are invested in stocks. The continued expansion of 401(k) retirement plans has fed a seemingly endless supply of new money into the stock markets since about 1982, that has fueled and propagated this subjectively valued market onward and upward—except for a few notable collapses (1987, 2000–2001, and 2007–2008). According to Smith, “a flood of pension and retirement money into equities...helped power the great bull markets of the 1980s and the 1990s.” This change from objective to subjective valuation of stocks is similar in some ways to the transition from representational art to abstract art that occurred in the twentieth century. The world of art discarded the traditional values and standards, and curators, museum officials, gallery owners, and critics now routinely endorse art that defies logic, sensibility, esthetics, and plain common sense, while phonies, nonentities, and flimflam artists are routinely pronounced to be the great geniuses of our time. This is not unlike the situation with common stocks, for we live in an era of deregulation and no regulation, and we have no standards for the valuing stocks or art tied to any tangible criteria, but rather, we depend on a herd mentality of hope and expectation, urged on by the so-called experts. (The world of classical music has gone through a similar transition. In the film: “Green Card,” Gerard Depradieu foists himself off as a musician, and when asked to play, he performs an incredible mishmash of random notes and clashing chords. When he is done, the audience says: “Wow, what was that?” He replies: “It ain’t Mozart.”)

It is perhaps noteworthy that Smith<sup>99</sup> described this process of the transition from objective to subjective valuation of stocks as if it made sense and represented progress. For example, Smith quoted Greenspan as describing the *dot.com* boom as follows:

There is at root here something far more fundamental—the stock market seeking out profitable ventures and directing capital to hopeful projects before the profits materialize. That’s good for our system. And, in fact, with all of its hype and craziness, is something that, at the end of the day, probably is more plus than minus.

Greenspan also indicated a factor that is important here, namely that people are willing to pay a large premium for a small chance to win a really big pay-

---

<sup>99</sup> Smith (2004).

off. He called this the “lottery principle.” Thus, if you have a lottery with a one-in-a-million chance of winning a million dollars, the nominal value of a lottery ticket would be one dollar. But lotteries typically give you a one-in-ten-million chance to win a million dollars, and yet the public is not dissuaded from buying the tickets. This effect plays into the current psychology of the stock market. Many investors are not interested in the slow growth of big-cap stocks and would rather invest in a selection of emerging stocks on the belief that if just one of them “becomes the next Microsoft” it will overcome losses from the others.

Smith claimed to have

...demonstrated how standards of valuation for American stocks evolved progressively over the twentieth century, from the more conservative to the more liberal. Beginning in the 1920s, investors started to look to future earnings growth rather than simply current dividends as the source of value in equity investments. By the late 1950s,...dynamic valuation methodologies based on earnings growth had *triumphed* over static approaches relying solely on current dividends. (emphasis added)

This paragraph seems to imply that valuation of stocks had progressed and *triumphed* by placing value on putative future earnings. However, that is not the way it works in reality. Most investors do not have a clue as to future earnings, and even experts have shown a notable inability to predict them. Stocks are valued not on “future earnings growth” which is far beyond the ability of economists to predict, but rather on future growth in P/E ratio, which depends not on corporate performance but human herd mentality in the markets. Maggie Mahar<sup>100</sup> described how investment veterans such as Morgan Stanley’s Byron Wein “seemed out of touch” when “the whole concept of fundamental or intrinsic value...had become a pejorative term.” She described 64-year-old Wein responding to a young analyst who was advocating a stock priced at more than 100 times earnings: “How do you arrive at your valuation? Show me the parameters you’re using.” According to Mahar, “The young analyst just stared at the 64-year-old market strategist.” Mahar emphasized: “...that by 1999, a corporation’s assets, its cash flow, and even its revenues had little relevance to the total value investors were willing to assign to it.”

Smith also claimed that as the twentieth century progressed, “investors became more and more willing to take on the risks, and stock prices rose accordingly.” On the contrary, there is no evidence that investors were aware of risks and were willing to take them. More likely, there was a wide-

---

<sup>100</sup> Mahar (2003).

spread belief that the markets could only go up, and if there were a short-term hiccup, it would speedily recover. And, to a great extent, that has been true. Although, in reality, investors have taken big risks (like buying Bear-Stearns at US\$ 170/share in January 2007—it dropped to US\$ 2/share in March 2008) they did not have an inkling they were taking a risk, and thought they were secure. Indeed, the mentality of the public and financial reporters in the late twentieth century and beyond is that it is normal for markets to advance at double-digit rates while it is grossly abnormal and incredible for markets to go down. So we have this strange dichotomy. The public is unwilling to take major risks, but does so unwittingly in the belief that their investments are secure in a market that only goes up. That is why it was so cataclysmic when the real estate market went south in 2007–2008; all those people who borrowed trillions were convinced that it could not go down. And when it does go down, the public can hardly believe it, and demands that the government must bail them out, so the Federal Reserve obeys that demand as “Helicopter Ben” drops money on the banking system.

A question in the minds of many people is whether stocks are a good long-term investment. In discussing this, it is common to trace out the histories of major market averages like the S&P 500 and the DJIA. However, these indices are constantly weeding out weak members and replacing them with stronger prospects, thus providing a rosier picture of long-term stock prices than a constant portfolio. Over the past, bull markets in the stock market have outrun earnings gains driving up P/E to high levels until they were unsustainable, and inevitably, crashes resulted. Such peaks in P/E were reached in 1901, 1929, 1964, 2000, and 2008–2009.

After the 1901 peak, there was a bear market from 1901 to 1920 in which the S&P index stayed flat with little gain. The bull market of the 1920s drove the S&P from 70 to 290, a gain of 400%. The ensuing bear market drove the S&P down to the 120-range (including a number of dips well below 100) where it languished for about 20 years until a new bull market was born around 1950. The overall S&P index was flat from 1900 to 1950 (except for a strong peak in the 1920s and a precipitous drop in the early 1930s) that was sandwiched in this flat period. The bear market from 1967 to 1981 dropped the S&P by 60% and it took until 1987 to recover to the level of 1967, a 20-year period. The greatest bull market of all ran from 1982 to 1999 during which the S&P reached about 1300. At its height, the P/E was more than 40. A major correction downward followed in 2000–2001 in which the S&P dropped to about 900 and the P/E dropped to about 24–25. But even the drop in the P/E from 40+ to 25 left the P/E in very high territory and it remained susceptible to a major correction. Despite this, there was a recovery

and the S&P and the P/E rebounded. Whenever the S&P P/E ratio goes into the stratosphere, an extended bear market is likely to follow. In the 2007 edition of this book, (actually written in early 2006) I said,

If the P/E drops in 2008 to say, 18, where it belongs, the S&P would drop in half to about 700. “Where it belongs” is based on historical precedent. As a long-term investment vehicle, investing in stocks is great if your timing is right, and if your timing is wrong, it can take 10, or 20 or more years to recover. In early 2008, the preponderance of evidence is that the markets were precariously high. This, of course, is based on historical precedent. There is no proof that history always repeats itself. But the risk seems to be great.

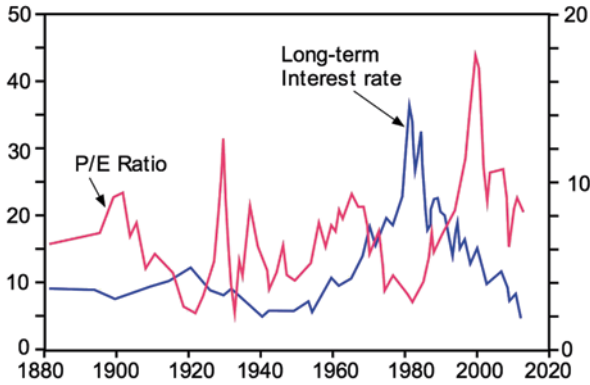
As it turns out, the S&P index dropped from a high of 1565 in October 2007 to about 870 at the end of 2008 and bottomed out around 675 in 2009.

There were ten major bear markets since 1950, in 1957, 1961, 1966, 1968, 1973, 1980, 1987, 1990, 2000, and 2008–2009. Declines in these bear markets ranged from 21 to 49%. The fact that stock prices can vary so widely over relatively short durations shows that valuation of stocks is inherently a subjective process, controlled more by herd behavior than by rational economic analysis.

There is a theory regarding a putative inverse relation between P/E and interest rates. It goes something like this.... If the P/E were, say, 20:1, it would imply that the company is making 5% on your investment and that ought to compete with a 5% interest rate. Similarly, when interest rates are 4%, that would allow P/E to be 25:1. However, the interest is on a government bond that is relatively safe compared to a stock. Furthermore, only a fraction of the “E” in P/E is returned to you in the form of dividends. When long-term interest rates and P/E ratios are plotted on the same axes, there is some correlation between interest rates and P/E. However, the highest interest rates that ever occurred were in the 1980s when the P/E was near an all-time low. Obviously, fixed interest investments can compete with stocks when the interest rate rises. Another way to interpret this is simply that when the money supply is generous, interest rates are low and the money must go somewhere, so it flows into the stock market. Alternatively, when money is tight and interest rates are high, money is pulled out of stock market to write off debt or invest in bonds. Figure 1.31 shows that P/E ratios were historically low when interest rates spiked around 1980, while P/E ratios spiked around 2000 as the Fed drove down interest rates.

What can we conclude? There is a constant flood of money entering the investment realm via pension funds and investment funds, and this money has to go somewhere. The widespread belief is that it should go into stocks. This





**Fig. 1.31** Comparison of long-term interest rates with the P/E ratio of the S&P 500 index (P/E on left scale, interest rates on right scale). (Adapted from Smith 2004)

subjective belief props up the stock markets. There is no objective method to value stocks. Stocks are primarily bought for appreciation. Much of this is based on: “I think that they think that others think it is going up. There is no limit on stock prices. The more they go up, the faster they continue upward until they pop. Stock pricing is on a par with religious beliefs. It is a matter of faith.”

## 1.17 Internal Feedback and Endogenous Risk

A paper on the Internet<sup>101</sup> provides a very good analysis of internal feedback mechanisms that can exaggerate price movements for assets, resulting in sudden, extreme price changes on occasion.

In the normal run of things, when you have a large number of investors in a market, and each one is following his own knowledge, intuition, and projections, independent of one another, investment decisions by one trader will not affect the market substantially. The wide range of attitudes among investors assures that each fluctuation will be met by a wide variety of responses. Investors will respond to exogenous events and therefore the market may go up or down, but it will tend to do so in an orderly manner. Markets may go through significant gyrations in response to major events such as assassinations, war, etc., but the response will be tempered by the variety of responses by investors.

However, when (a) a financial market includes a number of large investors with great influence on supply and demand for securities, (b) these large in-

<sup>101</sup> Danielsson and Shin (2002).



vestors have essentially an identical strategy for investing, and (c) that strategy involves buying during uptrends and selling during downtrends (aka *portfolio insurance*), the stage is set for very exaggerated price movements of securities because any trend (up or down) tends to get amplified by these investors, acting in unison. Consider, for example, a mild downtrend that might get started due to a random fluctuation, or more likely, some external event in the world. The large investors are pre-programmed (sometimes with automatic computer-generated sell orders) to sell securities in this downtrend. As their securities are offered up for sale, the market is flooded with sell orders and the prices of securities drop further. This, in turn, causes further selling, producing further price drops, etc. Now, even those smaller investors who are not pre-programmed begin to panic and sell. Along the way, there may be margin calls for those who have bought on margin, causing further selling. In an era of investment in the momentum (rather than the value) of securities, when the momentum turns sharply negative, a large number of investors want to get out at the same time. This adds to the selling pressure. Danielsson and Shin refer to this phenomenon as “endogenous risk”—it is the risk inherent in a system with positive feedback that can greatly amplify price movements of securities.

A market can also acquire additional amplification from arbitrage operations. In the case of the stock market crash of 1987 (see Sect. 2.7), the contrast between the prices of stocks and stock market futures played a role when futures were cheaper than stocks, causing arbitragers to sell stocks and buy futures, thus driving stocks down more. In the case of Long-Term Capital Management (see Sect. 2.9.4), arbitraging between Japanese and US currencies led to large losses due to wild variations in the currency markets.

Other factors can contribute to positive feedback, amplifying such market trends. For example, automatic stop-loss orders generate additional selling pressure when the market drops precipitously, and covering short positions can drive a market sharply upward during an uptrend.

Danielsson and Shin concluded,

Endogenous uncertainty matters whenever there is the conjunction of (i) traders reacting to market outcomes and (ii) where the traders’ actions affect market outcomes. These conditions are most likely to be in effect when there is a prevailing orthodoxy concerning the direction of market outcomes, and where such unanimity leads to similar positions or trading strategies. In such an environment, the uncertainty in the market is generated and modified by the response of individual traders to the unfolding events. Recognizing these features is essential to intelligent risk management that takes account of endogenous risk.

## 1.18 When the Bubble Pops

K&A raised questions regarding whether and how governmental authorities should respond to a bubble or its inevitable demise.

Should governmental authorities intervene to cope with a crisis, and if so, at what stage? Should they seek to forestall increases in real estate prices and stock prices as the bubble expands so the subsequent crash will be less severe? Should they prick the bubble once it is evident that asset prices are [excessive]? When asset prices begin to fall, should the authorities adopt any measures to dampen the decline and ameliorate the consequences?

The question as to whether authorities can be effective in forestalling increases in real estate prices and stock prices from becoming excessive remains purely academic because there do not seem to be any examples where authorities have done this. On the contrary, it appears that in every instance, central banks would rather foster growth of the bubble, producing temporary euphoria in the public, than risk a loss of public support for the current administration. In fact, the US Federal Reserve System has systematically fueled the growth of bubbles throughout the 1990s, the 2000s, and beyond by continually increasing the money supply and lowering interest rates at times of overspeculation. This was compounded by the government's view that deregulation of banks was equivalent to no regulation of banks, and bankers speculated excessively with FDIC-backed funds.

The next question is what government action is desirable when the bubble implodes? As K&A discussed, one point of view is that the best remedy for a panic resulting from an imploding bubble is to let it run its course, and to allow the economy to adjust to the decrease in household wealth that follows from the declines in prices of real estate, stocks, and commodities. According to this view, government intervention encourages formation of the next bubble because "many of the market participants will believe that their possible losses will be limited by government measures." Thus, the "likelihood and the scope of future losses" are reduced—at least in the minds of speculators. Speculation is encouraged by government intervention. K&A imply that the government's view is negative toward bubble formation and inadvertently promotes bubbles by their intervention (the road to hell is paved with good intentions). K&A refer to "the undeserved reward to the speculators." However, it seems likely that the Federal Reserve does not view bubbles in such a negative manner.

According to K&A, the view that a panic should be allowed to pursue its course has two elements:

One element takes pleasure in the troubles that the investors or speculators encounter as retribution for their excesses.... The other sees panic as a thunderstorm...that clears the air.

K&A provided extensive historical illustrations. The opposing view concedes that while it is desirable to purge the system of bubbles and manic investments, there is the risk that a deflationary panic would spread and wipe out sound investments by nonspeculators. As K&A asserted, we will never know whether benign neglect is a good path out of an imploding bubble because this is never done. K&A pointed out that the authorities always feel compelled to intervene. For example, in late 2007, US government authorities gradually became aware that the simultaneous bubbles in real estate and stocks of 2002–2007 were unsustainable and perched precariously on a ephemeral foundation of speculative mortgages based on the expectation that housing prices would advance at 10–20% per year forever. (It should be noted that with a small down payment, a house purchase is highly leveraged, and a 10–20% increase in house price can translate into a much larger percentage profit gain on investment). From October through December 2007, a series of shocks propagated through the banking system as the extent of the debacle slowly became apparent. With each revelation, the stock market faltered, and with each reverberation in the stock market, the Federal Reserve came riding to the rescue with a rate cut. Initially, investors responded with enthusiasm, and each rate cut brought on a temporary booming buying spree in stocks. However, it gradually became apparent that these rate cuts had more symbolic value than real value, and by 2008, rate cuts no longer seemed to produce quite as much enthusiasm. In the past 25 years, the US Federal Reserve System seems to have adopted its major *raison d'être* as adapting monetary policy to prop up fading stock and real estate bubbles. Starting with Greenspan, and continuing with “Helicopter Ben” Bernanke, the goal of the Federal Reserve has been to prop up and maintain bubbles, not so much as a matter of belief and philosophy, but rather because the alternative is viewed as being worse. More recently, in the era 2009–2013, the Federal Reserve acted to resurrect defunct bubbles.

In addition to monetary remediation of the popped bubble, President George W. Bush and the US Congress adopted a series of fiscal stimuli, including further tax breaks for businesses (i.e., the rich) along with tax rebates of up to US\$ 1200 per family. The cost to the government of this rebate program has been estimated to be around US\$ 160,000,000,000, adding sig-

nificantly to the already large budget deficit. One must wonder, if the government can simply hand out US\$ 1200 to each family, why not US\$ 12,000, or US\$ 1,200,000? Why does the government simply not make everyone rich? The US\$ 160,000,000,000 that the government borrowed to pay out these rebates will never be paid back.

In the aftermath of the collapse of the housing bubble, the government interceded a number of times to prop up large business enterprises that failed from speculation. The cost of these ventures exceeded a trillion dollars, and since the government did not have these funds, it had to borrow them.

Thus, we see that governments in general, and the US in particular, always act to prop up bubbles. There seem to be only two bullets in the government's arsenal. One is to cut taxes and the other is to lower interest rates and pump money into the banking system. Both of these will promote bubble formation. Inevitably, the government's cure for excessive spending and inadequate revenues is to increase spending and cut revenues.

## References

- Abel, A. (1992). Can the government roll over its debt forever? *Federal Reserve Bank of Philadelphia Business Review*, Nov.–Dec.
- Abelson, R., & Freudenheim, M. (4 May 2008). Even the insured feel the strain of health costs. *New York Times*.
- Bhutta, N., & Keys, B. J. (April 2013). Interest rates and equity extraction during the housing boom. <http://www.smeal.psu.edu/rm/law-and-business-conference/past-events/2013-archived-information/keys-1>.
- Carlson, M. (2007). A brief history of the 1987 stock market crash with a discussion of the federal reserve response, Staff Working Paper 2007-13. <http://www.federalreserve.gov/pubs/FEDS/2007/200713/200713pap.pdf>.
- Case, K. E., Quigley, J. M., & Shiller, R. J. (2011). Wealth effects revisited 1978–2009. Cowles Foundation Discussion Paper No. 1784.
- Danielsson, J., & Shin, H. S. (2002). Endogenous risk. <http://hyunsongshin.org/www/risk1.pdf>.
- Delamaide, D. (1984). *Debt shock: The full story of the world credit crisis*. New York: Doubleday.
- De Long, J. B., & Shleifer, A. (1990). The bubble of 1929: Evidence from closed-end funds. [http://www.j-bradford-delong.net/pdf\\_files/Bubble\\_1929.pdf](http://www.j-bradford-delong.net/pdf_files/Bubble_1929.pdf).
- Embry, J., & Hepburn, A. (2005). Move over, Adam Smith: The visible hand of uncle Sam. Sprott Asset Management Special Report, August 20, 2005. <http://www.sprott.com>.
- FDIC. (1998). A brief history of deposit insurance in the United States.

- Friedman, J., & Aron-Dine, A. (2006). The state of the estate tax as of 2006, the center on budget and policy priorities. <http://www.cbpp.org/5-31-06tax2.htm>.
- Galbraith, J. K. (1954). *The great crash, 1929*. New York: Mariner Books.
- Galbraith, J. K. (1958–1998). *The affluent society* (40th Anniversary ed.). New York: Mariner Books.
- Galbraith, J. K. (1992). *The culture of contentment*. Houghton Mifflin.
- Galbraith, J. K. (1993). *A short history of financial Euphoria*. New York: Penguin Books, Div. of Random House.
- Galbraith, J. K. (2004). *The economics of innocent fraud*. Houghton-Mifflin.
- Gjerstad, S., & Smith, V. L. (2009). Monetary policy, credit extension, and housing bubbles: 2008 and 1929. *Critical Review*, 21, 269–300.
- Jarrow, R., Kchia, Y., & Protter, P. (2011). How to detect an asset bubble. *SIAM Journal on Financial Mathematics*, 2, 839–865.
- Jickling. (2009). Consumer Bankruptcy and Household Debt Congressional Research Service, Library of Congress. [http://209.85.165.104/search?q=cache:OFYnon68BIsJ:digital.library.unt.edu/govdocs/crs/permalink/meta-crs-2824:1+revolving+consumer+debt+in+the+1990s&hl=en&ct=clnk&cd=5&gl=us&lr=lang\\_en](http://209.85.165.104/search?q=cache:OFYnon68BIsJ:digital.library.unt.edu/govdocs/crs/permalink/meta-crs-2824:1+revolving+consumer+debt+in+the+1990s&hl=en&ct=clnk&cd=5&gl=us&lr=lang_en); also US Courts; also US Courts, [http://www.uscourts.gov/Press\\_Releases/bankruptcyfilings081607.html](http://www.uscourts.gov/Press_Releases/bankruptcyfilings081607.html).
- Jiménez, Á. (2011). Understanding economic bubbles. <http://www.eco.uab.es/ue/trabajos%20premi/tfc%2061%20Jiménez%201.pdf>.
- Johnston, D. C. (2003). *Perfectly legal, portfolio*. Penguin Books.
- Kindleberger, C. P., & Aliber, R. (2005). *Manias, panics and crashes* (5th ed.). Hoboken: Wiley.
- Krugman, P. (23 November 2007). Banks gone wild. *New York Times*.
- Krugman, P. (2009). How did economists get it so wrong? <http://www.nytimes.com/2009/09/06/magazine/06Economic-t.html?pagewanted=all>.
- LaMonica, P. R. (2008). It's inflation stupid, April 15, 2008. CNN.Money.com.
- Mahar, M. (2003). *Bull—A history of the boom, 1982–1999*. New York: Harper Business Books.
- McCarthy, J. (1997). Debt, delinquencies, and consumer spending, Federal Reserve Bank of New York, Current Issues, February 1997.
- McGrattan, E. R., & Prescott, E. C. (2003). The 1929 stock market: Irving Fisher was right, Federal Reserve Bank of Minneapolis, Research Department Staff Report 294, December 2003.
- Pew Center for the States. (2010). The trillion dollar gap: Underfunded state retirement systems and the road to reform, Washington, DC, February 2010. [http://downloads.pewcenteronthestates.org/The\\_Trillion\\_Dollar\\_Gap\\_final.pdf](http://downloads.pewcenteronthestates.org/The_Trillion_Dollar_Gap_final.pdf).
- Posen, A. S. (2006). Why central banks should not burst bubbles. [www.iie.com/publications/wp/wp06-1.pdf](http://www.iie.com/publications/wp/wp06-1.pdf).
- Reinhart, C. M., & Rogoff, K. S. (2010). Growth in a time of debt National Bureau of Economic Research, Working Paper 15639. <http://www.nber.org/papers/w15639>.
- Roubini, N. (2006). Why central banks should burst bubbles. <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-2362.2006.00032.x/abstract>.

- Saez, E. (2012). Striking it richer: The evolution of top incomes in the United States (Updated with 2011 estimates) March 2, 2012, and (Updated with 2012 estimates) September 3, 2013. [elsa.berkeley.edu/~saez/saez-USStopincomes-2011.pdf](http://elsa.berkeley.edu/~saez/saez-USStopincomes-2011.pdf).
- Santoni, G. J. (1987). The Great Bull Markets 1924–29 and 1982–87: Speculative bubbles or economic fundamentals? (Senior Economist, Federal Reserve Bank of St. Louis, November, 1987).
- Santoni, G. J. (2003). The Great Bull Markets 1924–29 and 1982–87: Speculative bubbles or economic fundamentals?
- Shiller, R. J. (2004). *Monetary policy should gently lean against bubbles in irrational exuberance* (2nd ed.). New York: Doubleday.
- Shiller, R. J. (2005). *Irrational exuberance* (2nd ed.). Doubleday/Random House.
- Smith, B. M. (2004). *A history of the global stock market from Ancient Rome to Silicon Valley*. Chicago: University of Chicago Press.
- Smith, C. H. (2013). Understanding failed policies: Wealth effect, wage effect, poverty effect. <http://www.oftwominds.com/blogmar13/wage-effect3-13.html>.
- Sornette, D., & Cauwels, P. (2012). The illusion of the perpetual money machine. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2191509](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2191509).
- Sornette, D., & Cauwels, P. (2014). *Financial bubbles: Mechanism, diagnostic and state of the world*. ETH Zurich, Switzerland.
- Sornette, D., & Woodward, R. (2009). Financial bubbles, real estate bubbles, derivative bubbles, and the financial and economic crisis. <http://arxiv.org/abs/0905.0220>. (Updated October 2012 as The Illusion of the Perpetual Money Machine by Didier Sornette and Peter Cauwels, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2191509](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2191509)).
- Steindel, C. (May 2007). How worrisome is a negative saving rate? Federal Reserve Bank of New York, Current Issues.
- Vreymans, P. (2013). The monetary stimulus myth—An evidence based analysis can our monetary system survive another shock? [workforall.net/research/The-Monetary-Stimulus-Myth.pdf](http://workforall.net/research/The-Monetary-Stimulus-Myth.pdf).
- White, E. (1990a). When the ticker ran late: The stock market boom and crash of 1929. In E. White (Ed.), *Crises and panics: Lessons of history*. Homewood: Dow Jones-Irwin.
- White, E. (1990b). The stock market boom and crash of 1929 revisited. *Journal of Economic Perspectives*, 4(2), 67–83.
- White, L. H. (2009). Federal reserve policy and the housing bubble. *Cato Journal*, 29, 115–125.
- White, L. H. (2011). Preventing bubbles: What role for financial regulation? *Cato Journal*, 31, 603–620 (Washington).
- Wolff, E. N. (2007). Recent trends in household wealth in the United States, Working Paper No. 502. The Levy Economics Institute of Bard College, June, 2007.
- Wolff, E. N. (2010). Recent trends in household wealth in the United States, Working Paper No. 502, 2007. Update: Working Paper No. 589, 2010. The Levy Economics Institute of Bard College, Annandale-on-Hudson, NY.
- Wolff, E. N. (2012). The asset price meltdown and the wealth of the middle class. Working Paper 18559. <http://www.nber.org/papers/w18559>.

# 2

## A Short History of Booms, Bubbles, and Busts

The first documented major boom–bubble–bust cycle was the Holland tulip craze that we already described in the Introduction to this book. The next section of this book presents a review of several of the important boom–bubble–bust cycles that followed from the eighteenth through the twenty-first centuries. We begin with two spectacular cycles from the eighteenth century, and then move on to the USA in the twentieth century.

In *The Great Crash*, John Kenneth Galbraith (JKG) briefly recounted some of the history of bubbles and crashes in the USA:

In the United States in the nineteenth century, there was a speculative splurge every twenty or thirty years. This was already a tradition, for the colonies...had experimented at no slight cost with currency issues that had no visible backing. They did well until it was observed that there was nothing there.

The American Revolution was paid for with Continental notes, giving permanence to the phrase “not worth a Continental.” In the years following the war of 1812–14, there was a major real estate boom; in the 1830s came wild speculation in canal and turnpike investment.... This came powerfully to an end in 1837. In the 1850s came another boom and collapse, in which a New England bank closed down with \$ 500,000 in notes outstanding and assets to cover them of \$ 86.48. After the Civil War came the railroad boom and a particularly painful collapse in 1873. Another boom came to an equally dramatic end in 1907.

These are only a few of the many cycles of excess in investing in the USA prior to the modern era. Bordo<sup>1</sup> and Wood<sup>2</sup> provide histories of booms and busts in the USA and the UK. They documented more than 20 crashes in the past two centuries. An International Monetary Fund (IMF) report<sup>3</sup> identified 13 stock market bubble-crash sequences from 1800 to 1940, with peak-to-trough drops ranging from 16.4 to 66.5%.

---

<sup>1</sup> Bordo (2003).

<sup>2</sup> Wood (1999).

<sup>3</sup> World Economic Outlook, IMF, April, 2003 <http://www.imf.org/external/pubs/ft/weo/2003/01/pdf/chapter2.pdf>.



The rich tradition of booms and busts, established early in the history of the USA, was further propagated in the twentieth and twenty-first centuries, as will be discussed in the ensuing sections.

Then, we provide a brief review of a few recent Asian bubbles. Finally, we provide a brief discussion of prospects for the next bubble.

## 2.1 The New World

In the early 1700s, an intrepid entrepreneur (John Law) developed the foundations of modern bubbles with two promotions, the South Seas venture in England and the Mississippi Company in France. Like most bubbles that followed over the next 300 years, there was actually a genuine basis and rationale for believing that a great new opportunity was at hand. The opening up and settlement of the New World seemed to offer a vast source of raw materials and products, as well as a large potential market for European products. This was not entirely unlike the advent of the automobile and widespread electrification in the 1920s or the introduction of the Internet in the 1990s. Bubbles are usually based initially on seemingly sound and rational future prospects. Where bubbles often go wrong is in assuming that these prospects can be easily tapped in the immediacy of time. As enthusiasm builds, investors lose sight of the realities of the prospect and focus only on trading paper for profit. John Law was a great financial innovator. He was the first to espouse the use of large-scale credit and printed money as a replacement for hard currency. He was the original Flim-Flam man (no disrespect meant for George C. Scott). If he were alive today, he would likely be made director of the US Federal Reserve System. Many of the corporate manipulators of our time (Milken, Keating, Lay, Rigas, etc.) would have been proud to have known John Law and would have paid great homage to him as the founder of their profession.

### 2.1.1 South Seas Bubble

In late 1719, John Law circulated his treatise on economics entitled *Money and Trade Considered*. As Smith discussed, the two central ideas in this work were: (1) credit, when circulated, acts as if it were conventional currency, and (2) commercial activity is stimulated by the money supply.<sup>4</sup>

Mr. Law applied these theories to the South Sea Company in Great Britain. The South Sea Company was created to “take over” responsibility for British government debt in exchange for the exclusive right to engage in trade with

---

<sup>4</sup> Smith (2004).



Spanish America. As would be the case with the subsequent Mississippi Company, holders of government bonds, which traded at significant discounts due to the precarious financial condition of the government, could use their depreciated bonds at face value to acquire South Sea shares. The company agreed to accept reduced interest payments from the government on bonds it received in exchange for its newly issued shares. As in the case of the subsequent Mississippi Company, everyone seemed to benefit; “the government was able to reduce the interest payments on the public debt, bondholders would receive [what seemed to be] full value for their bonds, and the new company itself would presumably be able to reap large profits from future trade with the Americas.”

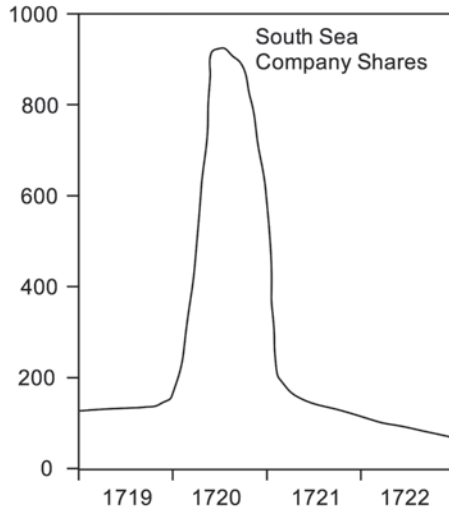
The press was enthusiastic. Wild claims were made for the demand for luxury merchandise in the New World, and “frequent references were made to large deposits of precious minerals in South America.” It was widely assumed that the South Sea Company could achieve great profitability from trading with Spanish colonies in the New World.

However, as Smith (2004) observed,

Some observers were skeptical, noting that at the time the South Sea Company was formed, the Spanish government forbade foreign nationals from trading with its colonies, a policy that seemed unlikely to change.

In its early years, the South Sea Company did not do well; the only concession the Spanish allowed was the right to engage in the slave trade. But in 1720, the company engaged in a number of practices that started a speculative binge. It spread extravagant rumors of the value of its potential trade in the New World. It loaned shares to highly placed officials in the government and bought them back when share prices rose, generating profit for politicians based on no investment. Meanwhile, the South Sea Company acquired an aura of legitimacy on the claim that all the top government officials had “invested” in the company. One website claims that 462 members of the House of Commons and 112 Peers were involved with the company, and that King George I and his two mistresses “were heavily involved in the South Sea Company.” The stock price increased eight-fold from January to June 1720. As Wikipedia said,

Its success caused a country-wide frenzy as citizens of all stripes—from peasants to lords—developed a feverish interest in investing; in South Seas primarily, but in stocks generally. Among the many companies, more or less legitimate, to go public in 1720 is—famously—one that advertised itself as “a company for carrying out an undertaking of great advantage, but nobody to know what it is.”



**Fig. 2.1** South Sea Company share prices

A number of other joint-stock companies then joined the market, making usually fraudulent claims about other foreign ventures or bizarre schemes, and were nicknamed “bubbles.”

The South Seas Company held a charter providing exclusive access to all of Middle and South America. However, the areas in question were Spanish colonies, and Great Britain was then at war with Spain. Even once a peace treaty had been signed, relations between the two countries were not good. The... South Sea Company was able to obtain [the right] to send only one ship per year to Spain’s American Colonies.

The bubble popped at the end of the summer of 1720, and the stock price dropped by a factor of 8 in September. A number of people around the country lost all their money and “the gullible mob whose innate greed had lain behind this mass hysteria for wealth, demanded vengeance. The South Sea Company Directors were arrested and their estates forfeited.”

Jiménez<sup>5</sup> provided Fig. 2.1 (originally drawn by Elliott Wave International).

### 2.1.2 John Law’s Mississippi Company

The originator of the South Seas bubble in England got into trouble by killing his opponent in a duel and had to escape to France, where he promptly began

<sup>5</sup> Jiménez (2011).

a similar scheme called the “Mississippi Company.” Smith<sup>6</sup> provided an excellent description of John Law’s Mississippi Company.

John Law founded the Mississippi Company and acquired from the French government the exclusive right to trade with the French Colony of Louisiana. This was coupled to a plan to reduce the French government’s payments on its debt.

John Law used the same basic strategy for the Mississippi Company as for the South Seas Company. The state of the French government’s economy was very poor and French government bonds traded at a large discount. Law worked out a deal with the French government whereby his Mississippi Company would offer to trade shares in the company to the public for the French government bonds at par, and he would agree to accept lower interest payments from the government on the bonds he acquired. As in the case of the South Seas Company, this seemed to benefit the French government, the bondholders and the Company. However, as we perceive in retrospect, the bondholders were trading discounted paper with tangible value for par value paper backed only by dreams and speculations.

As in the South Seas Company, initial public response was lukewarm, so he added a number of new features, such as exclusive rights to “raise tobacco (which was rapidly becoming popular in France) as well as the right to trade in slaves and other products from the French colony of Senegal.” All of this was paid for with newly issued shares:

In order to sell the new stock, Law aggressively hyped the company’s prospects in a promotional blitz that resembled a modern public relations campaign.

He continued a wide range of financial schemes and the stock rose by more than a factor of 10 in a buying frenzy of the public.

Smith described the buying frenzy of luxury items that resulted from this early stock bubble that produced a “stock market-induced wealth effect—a change in personal consumption patterns arising from dramatic moves in stock prices.”

During the same time period that the South Seas bubble expanded and popped, the Mississippi Company went through the same type of cycle—a runaway bubble followed by a popped bubble. John Law’s involvement with the French government and his rampant generation of credit (he even lent government money to people to purchase company shares) led to a severe inflation.

---

<sup>6</sup> Smith (2004).

## 2.2 Florida Land Boom of the 1920s

### 2.2.1 The Rise

In 1931, Fredrick Lewis Allen<sup>7</sup> wrote the oft-quoted classic book *Only Yesterday* that described the era of the 1920s with great insight and perception. One of the major financial events of the 1920s was the Florida land boom, and Allen discussed this in detail. As Allen described it, the boom built up over several years, but reached a frenzy by 1925, when:

Miami had become one frenzied real-estate exchange with 2,000 real-estate offices and 25,000 agents marketing house-lots or acreage.... The city fathers had been forced to pass an ordinance forbidding the sale of property in the street, or even the showing of a map, to prevent inordinate traffic congestion.

People flooded into Florida to buy and sell land:

Hotels were overcrowded. People were sleeping wherever they could lay their heads, in station waiting rooms or in automobiles. The railroads had been forced to place an embargo on imperishable freight in order to avert the danger of famine; building materials were now being imported by water and the harbor bristled with shipping. Fresh vegetables were a rarity, the public utilities of the city were trying desperately to meet the suddenly multiplied demand for electricity and gas and telephone service, and there were recurrent shortages of ice.

By 1925 they were buying anything, anywhere, so long as it was in Florida. One had only to announce a new development, be it honest or fraudulent, be it on the Atlantic Ocean or deep in the wasteland of the interior, to set people scrambling for house lots.... The stories of prodigious profits made in Florida land were sufficient bait.<sup>8</sup>

Allen provided many examples of huge increases in the prices of lots. These stories were multiplied and spread, adding fuel to the fire. The standard joke at the time was: “a native saying to a visitor, ‘want to buy a lot?’ and the visitor at once replied: ‘Sold.’”

Lots were bought from blueprints. Subdivisions were drawn up, and advertisements described them. “Binders” were made with a check for 10% down payment. (Note that during the subprime real estate boom of 2002–2007, many properties were sold for no money down, and some were sold on the basis that no payments of principal need be made for the first few years. Thus,

---

<sup>7</sup> Allen (1931).

<sup>8</sup> Allen (1931).

the 1920s Florida land boom was in some ways conservative compared to the twenty-first-century real estate boom.)

Plans were laid out for new hotels, apartment houses, and casinos. Allen described a sight at the height of the boom where a large vacant lot was almost completely covered with bathtubs in crates that had been there for some time. The tubs were intended for apartment buildings but the freight embargo had held up the remainder of the contractor's building material and after the bathtubs arrived.

Allen also described the advertisements of the time as resounding with "slogans and hyperboles of boundless confidence." The *Miami Daily News* printed an issue of 504 pages (mainly advertisements) one day in the summer of 1925.

By the height of the land boom of the 1920s, a single piece of land was changing hands as many as six times a day. "Binder Boys" sold land for a small down payment, the understanding being that the land would probably sell at a higher price before the next payment came due. There always seemed to be another buyer hoping to jump into the market, causing the prices to skyrocket further.

### 2.2.2 The Fall

The Florida land boom began to collapse in the spring and summer of 1926. People who held binders were defaulting on their payments. Many of those with paper profits found that the properties they owned were preceded by a series of purchases and sales, all at 10% down, and as many of these defaulted, the only options were to either hold onto the land at a great loss or default. The land was often burdened with taxes and assessments that amounted to more than the cash received for it, and much of the land was blighted with a partly constructed development. As the deflation expanded, two hurricanes added the finishing touch to the bursting bubble. The hurricanes left 400 people dead, 6300 injured, and 50,000 homeless.

According to a source quoted by Allen, by 1927, the approach to Miami by road was littered with dead subdivisions:

...their pompous names half-obliterated on crumbling stucco gates. Lonely white-way lights stand guard over miles of cement sidewalks, where grass and palmetto take the place of homes that were to be.... Whole sections of outlying subdivisions are composed of unoccupied houses, past which one speeds on broad thoroughfares as if traversing a city in the grip of death.

Bank clearings for Miami had climbed sensationally to over a billion dollars in 1925 but dropped sharply after that (see Table 2.1).

**Table 2.1** Bank clearings for Miami. (Allen 1931)

Year	Amount
1925	US\$ 1,066,528,000
1926	US\$ 632,867,000
1927	US\$ 260,039,000
1928	US\$ 143,364,000
1929	US\$ 142,316,000

As Allen summarized,

Most of the millions piled up in paper profits had melted away, many of the millions sunk in developments had been sunk for good and all, the vast inverted pyramid of credit had toppled to earth, and the lesson of the economic falsity of a scheme of land values based upon grandiose plans, preposterous expectations, and hot air had been taught in a long agony of deflation.

### 2.2.3 Underlying Causes

Allen provided seven contributing factors to the Florida land boom:

1. Florida's favorable climate
2. Accessibility to the populous cities of the Northeast
3. Portability of people with automobiles
4. Aura of confidence pervading the population during the 1920s
5. The desire to live in a country club environment
6. The motivation to emulate the success of selling Southern California
7. The belief that Florida land offered the best chance to get rich quick

These were all factors that made Florida attractive. In the early 1920s, Florida became a popular place for vacations or relocation because of its climate. The population grew steadily and housing could not match the demand, causing prices to increase sharply, which was not exactly unjustified at that point. But, as prices doubled and tripled, the word spread and speculation began. Soon, nearly everyone in Florida was either a real estate investor or a real estate agent. This was a classic case of the phases of speculation as discussed in Sect. 1.8. Initially, people invested in Florida real estate because it was an attractive location. This caused prices of real estate to rise. In the second stage, as the prices of real estate increased even more, speculators moved in to buy real estate, not to dwell in the housing they own, but with the intent of turning over their holdings to another speculator who would arrive on the scene later, having noted the expanding bubble in housing. In the speculative stage,

the original reason for investing in Florida real estate was forgotten, and investments were made only to soon turn over the investment to “a bigger fool.” As the frenzy built, speculators borrowed to increase their leverage and thus expanded the bubble until it eventually popped.

## 2.3 The Stock Market and the Economy of the 1920s

This topic has already been discussed to a considerable degree in Sect. 1.8.2.3.

### 2.3.1 The Real Economic Boom of the 1920s

If you query “Google” on the Internet, you find a huge number of articles and websites that address the stock market crash of 1929 and the ensuing depression of the 1930s, but very few sites that deal with the actual boom of the 1920s, which was clearly a proximate cause of both the crash and the ensuing economic depression. The reason for this seems to be that in our culture, we have a deep and pervasive belief that it is only right and natural that stocks should go up, even by huge percentages, and such increases in asset prices are neither unreasonable nor demanding of explanation. However, when stocks go down, that is considered to be remarkable and deserving of study, examination, and even incrimination. When stocks crash, it is a national calamity requiring investigations, allegations, and accusations.

There are many factors that contributed to the economic boom of the 1920s.<sup>9</sup> The First World War had accelerated the gradual transition of America from an agrarian nation toward an industrial nation, although agriculture still played a much larger share than it does today. The advent of mass production in electrically powered factories with assembly lines produced products efficiently at low prices. Automobiles became commonplace and the majority of American households owned cars by the end of the 1920s. The automobile and trains revolutionized transportation. The workweek dropped from 60 to 48 h, and Americans had more time for leisure. The consumer outlook was optimistic. Taxes were low, and businesses and individuals were able to retain much of their earnings. As Fig. 1.12 shows, the uppermost income tax bracket during the second half of the 1920s was 25 %—the lowest it has ever been. Similarly, the capital gains tax was the lowest it has ever been. There was an

---

<sup>9</sup> Aylen (2001).

ample money supply. Advertising became a big business, and America became a consumer society driven by the urgings of the advertisers.

Unlike the era of the late twentieth century, where “free trade” has been widespread among nations, high tariffs were placed on imported goods in the 1920s, promoting production and distribution of goods made in America. This also contributed to American prosperity. However, other nations were not so fortunate. Since the USA relied on its own reserves of national resources,

...little money had to leave the United States to buy the raw materials needed to manufacture its products. This created an unbalanced cash flow from the rest of the world to the United States. As a result, European nations, still recovering from the [First World] War, needed loans, which they got from American banks. This sent even more money to the United States in the form of repayments and interest, leading to an even more unbalanced cash flow, and so on.<sup>10</sup>  
Aylen (2001)

Furthermore, Europe’s recovery from World War I did not revive to prewar levels of production, and the Europeans failed to reclaim their old markets from the USA or create new markets to compensate for the losses. As a result, nations still maintained high tariffs, which raised prices and cut world trade.

This question has been debated by economists for more than 100 years, as to whether tariffs promote or oppose prosperity. Most economists in the twenty-first century seem to be enthusiastically in favor of free trade, and it is widely believed that tariffs contributed to the worldwide depression of the 1930s. There seems to be some merit to this argument. However, as in most economic questions, the issues are complex. In an ideal world composed of nations of roughly equal size and gross national product (GNP), without cartels and other artificial controls of supply and demand, one can rightly argue that with free trade, each nation can produce the products for which it is most capable and efficient. Without trade barriers, all nations benefit from the most efficient production wherever it may occur, and prosperity would be shared by all. Free trade is believed to be a boon in such a world. However, this seems to be the hypothetical world of economists. (I attended a lecture by a noted advocate of free trade, who explained how one country would produce autos, and another would produce TV sets, etc. Someone in the audience raised the question: “What will the US do?” Another person in the audience shouted: “Consume!”) In the real world of the early twenty-first century, with the US being a major industrialized power, and many developing countries anxious to industrialize with cheap labor, free trade provides short-term advantages

---

<sup>10</sup> Post War Boom and Bust (1920–1929), <http://www.flowofhistory.com/category/export/html/151>.



to both the US and the developing nations. The US allows its manufacturing base to be usurped by the developing nations, and in return the citizens of the US can purchase cheap goods made by underpaid labor in the developing countries. Eventually, however, the loss of manufacturing in the US will take its toll with a loss of jobs and independence, and as wages inevitably rise in developing countries, the benefits to the US will gradually disappear, and the US will be worse off. While the US has been actively pursuing this policy from about 1990 to 2013, the days of reckoning seem to be approaching. Furthermore, in a world where oil plays a dominant role, and oil resources are distributed sporadically among mainly reactionary and often despotic nations, there cannot be any actual “free trade.” Eliot Janeway said<sup>11</sup>

Americans rushed to buy import bargains, even while suspecting how much their savings as shoppers would cost them income earners. Dogmatism rooted in the clichés of free trade hypnotized the victims into welcoming the losses as gains.

Optimism fed on the euphoric lure of America’s presumed growth into a “service” economy free from the import threat—until depression struck the entire service industry, from restaurants to hospitals and even television networks. It jolted the country into learning a basic lesson her economists had never taught her: service industries are intertwined with manufacturing industries. Each relies on the other as a customer. Services cannot continue to enjoy expansion when the manufacturing industries, which produce income to be spent on services, suffer shrinkage. Realism made short shrift of the stubborn rationalization that America could import prosperity.

Reagan swallowed the free-trade dogma, and the country choked. America was first dazzled by the import profiteering that always tops an inflationary boom, and then demoralized by the import dumping that, just as predictably, always leads a deflationary debacle. The import inflation that paced the US sellers’ markets of the 1970s collapsed into the import deflation that devastated them in the 1980s. Inescapably, however, the dumping countries suffered along with their target. Their economies started to contract despite the expanded outlet for their goods America was inviting them to buy with subsidized prices and credit. Though America was importing distress from every point on the map by the mid-1980s, her competitors underselling her in her own markets were scarcely exporting themselves into prosperity.

One industry that did not participate in the boom of the 1920s was farming. Farms had expanded greatly during World War I to feed the allies, but European agriculture recovered by 1924–1925, resulting in US overcapacity,

---

<sup>11</sup> Janeway (1990).

leading to widespread misery for US farmers. Over 600,000 US farmers went bankrupt within 5 years.

The boom of the 1920s was initially built on a solid basis. The advent of widespread electrification, the lowered cost and greater distribution of automobiles, and the technical advances in industrialization, all produced an environment conducive to increased economic prosperity. JKG presented data that show that there were real economic gains in the period 1925–1929 (e.g., the value of output rose 13% in 5 years, the increase in automobile production was 23% in 3 years, and industrial production increased by 64% in 7 seven years—after the down year of 1921). The Federal Reserve index of industrial production rose from a depressed value of 67 in the recession of 1921 to 100 in 1924 to 126 in mid-1929. Automobile production reached 5.4 million vehicles in 1929, an increase of a million over 1926. Wages were not going up much but prices were stable. However, as in all booms, the price of assets soon rose far higher than the real increase in productivity, leading to a bubble in which stock valuations were bid up to very high levels.

Housing played an important role in the economy of the 1920s, just as it did in the first decade of the twenty-first century:

The mid-1920s house-building boom was accompanied by rising house prices, increased homeownership rates, and financial innovations that boosted the supply of credit to real-estate developers and house-buyers. It was also accompanied by an unprecedented increase in the volume of mortgage debt.... In the country as a whole, construction and house prices peaked in 1925 and fell off steadily over the late 1920s. With the onset of the Great Depression in 1930, the decline in house prices accelerated and many mortgages went into default.<sup>12</sup>

Wachter and Orlando pointed out: “Historically, real estate has exhibited the most severe cycles of any asset class, with accelerating severity in recent decades.” They went on to say: “The economy is very dependent on the real estate market, but it is a rather unstable.”<sup>13</sup> Brocker and Hanes<sup>14</sup> said,

The mid-1920s house-building boom was accompanied by rising house prices, increased homeownership rates, and financial innovations that boosted the supply of credit to real-estate developers and house-buyers. It was also accompanied by an unprecedented increase in the volume of mortgage debt, which some viewed as “evidence of a fundamental revision in homeowners’ and prob-

---

<sup>12</sup> Brocker and Hanes (2012).

<sup>13</sup> Wachter and Orlando (2011).

<sup>14</sup> Brocker and Hanes (2012).

ably lenders' attitudes toward mortgage indebtedness." In the country as a whole, construction and house prices peaked in 1925 and fell off steadily over the late 1920s. With the onset of the Great Depression in 1930, the decline in house prices accelerated and many mortgages went into default.

Brocker and Hanes pointed out that the real estate bubble of 1997–2007 revived interest in the real estate bubble of the 1920s and this, in turn, led to further analysis of the role that the collapse of the 1920s real estate bubble played in creating the ensuing depression of the 1930s. Snowden<sup>15</sup> echoed this theme, saying

The residential mortgage crisis that triggered the Panic of 2008 is more severe, in terms of rates of foreclosure and decreases in home prices and residential wealth, than any since the Great Depression. We should look back to the 1930s for more than benchmarks of misery, however, since it provides an opportunity to examine the origins, impacts and consequences of one severe mortgage crisis as we live through another.

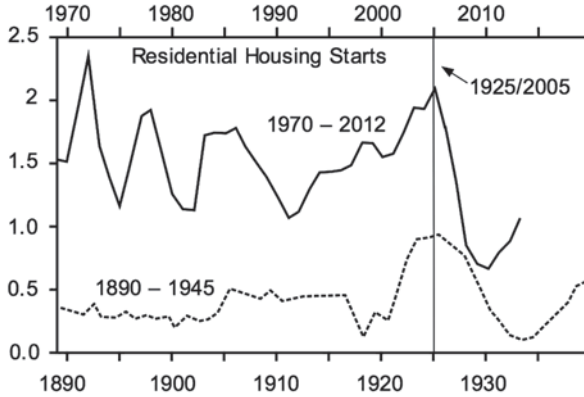
Eugene N. White<sup>16</sup> pointed out that real estate booms and busts occurred in the past but they did not have the great financial impact of the housing bubble of 1997–2007. White compared the real estate boom of the 1920s with that of 1997–2007. He pointed out that the housing boom of the 1920s had some “surprisingly similar characteristics” in common with that of 1997–2007, “including surging housing starts, strong regional elements, and financial innovation,” and that the crash produced a wave of foreclosures. He also pointed out that “most factors blamed for the current crisis were present: weak supervision, securitization, and a fall in lending standards.” Yet, as he pointed out, this did not lead to a financial crisis as severe as the housing bubble of 1997–2007.

White noted that the housing boom of the 1920s was not generally recognized by economists. But there were similarities to the 2000s. The housing bubble that peaked in the mid-1920s was focused on residential housing. Figure 2.2 compares residential housing starts in the era 1970–2010 with that for 1890–1940. White attributed the wide swings in housing from 1970 to 1990 to wide swings in inflation and interest rates, while the price stability of the gold standard period kept mortgage rates relatively stable. “As the population of the country was considerably smaller ninety years ago, the level of housing starts was lower, but the run up during the booms was of the same magnitude.” Although the total level of housing starts in the 1920s was much

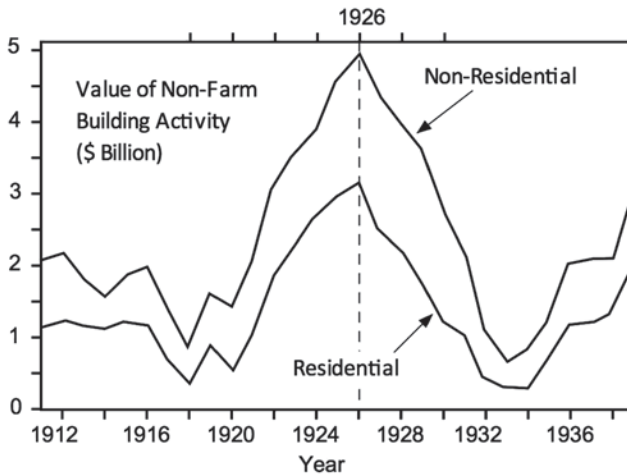
---

<sup>15</sup> Snowden (2010).

<sup>16</sup> White (2014, pp. 115–158).



**Fig. 2.2** Comparison of residential housing starts in the era 1970–2010 with that for 1890–1940. (This figure was originally provided by White (2014) and redrawn from data from Non-Farm Housing Starts, Bulletin 1260, US Dept. of Labor; also <http://research.stlouisfed.org/fred2/data/HOUST.txt>)

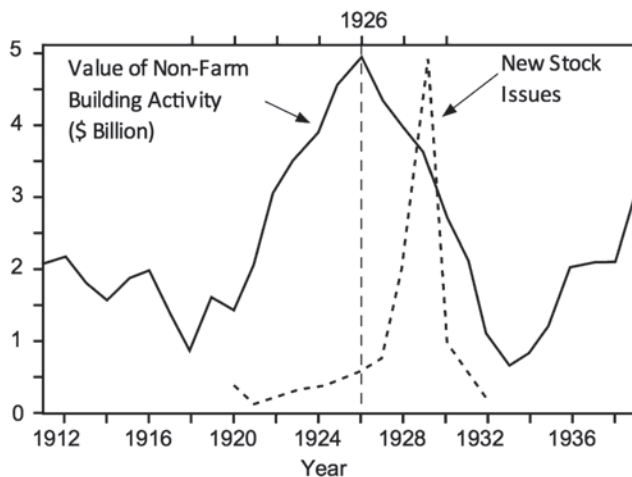


**Fig. 2.3** Sources of funding for residential construction, 1911–1939. (This figure was originally provided by White 2014 and redrawn from data from Gottlieb 1965)

lower than in the latter part of the twentieth century, the percentage increase from 1920 to 1925 was actually greater than in the later period.

As White pointed out, the expansion of mortgage credit in the 1920s was “facilitated by a loosening of lending standards, with aggressive new intermediaries gaining an increasing market share....” See Fig. 2.3.

White compared the real estate boom of the 1920s with the stock market boom of the 1920s (see Fig. 2.4). Thus, the stock market boom, discussed so often as a precursor to the Great Depression, was actually comparable to



**Fig. 2.4** Comparison of real estate and stock market booms of the 1920s. Vertical scale is US\$ billions in 1929 dollars. (This figure was originally provided by White 2014 and redrawn from data from Historical Statistics of the USA; also Gottlieb 1965)

the real estate boom. In the 1997–2007 era, the *dot.com* stock market boom preceded the real estate boom, whereas in the 1920s, the order was reversed.

White also investigated the question of whether artificially low interest rates, which clearly prevailed from 1997 to 2007, also was present during the housing boom of the 1920s. The details are complicated. White suggested that the effect of the *Greenspan put* (the promise that the central bank will prevent a financial crisis) was greater than the effect of low interest rates in the 1920s. As in the 1997–2007 era, “the expansion of mortgage credit in the 1920s was also facilitated by a loosening of lending standards with aggressive new intermediaries gained an increasing their market share.”

The 1920s also had a significant increase in securitization of residential and commercial mortgages. White suggested that these early securitized mortgages may have been a precursor for the subprime securitized mortgages of the 2000s. The data shown in Table 2.2 show that as the volume of real estate bonds exploded in the years running up to 1925, the percent not meeting contract expanded in parallel.

White concluded that lenders are encouraged to take risks today because of the Greenspan put and the fact that the federal government provides deposit guarantees whereas in earlier times, risk-taking incentives were absent.

In concluding his treatise, White emphasized that though the housing bubbles of the 1920s and the 2000s had many similarities, the bubble of the 1920s did not do nearly as much damage to the banking system as that of the 2000s. He claimed that the big difference was that in the 1920s, individual

**Table 2.2** Performance of real estate bonds 1919–1931. (This table was provided by White 2014 based on data from Johnson 1936)

Year	Number of issues	Value US\$ millions	Percent not meeting contract
1919	13	31.2	1.9
1920	19	48.2	20.8
1921	13	24.2	29.8
1922	62	137.8	27.6
1923	67	165.4	41.8
1924	96	197.7	50.9
1925	178	483.6	58.3
1926	177	431.3	68.0
1927	163	379.2	72.1
1928	209	519.0	77.0
1929	62	176.3	75.7
1930	23	77.2	57.4
1931	8	12.9	27.1

investors were left to bear the brunt of losses, whereas in the 2000s, it was leveraged financial institutions that took the losses.

### 2.3.2 The Stock Market of the 1920s

Figure 1.12 shows that income and capital gains taxes were extremely low in the 1920s.

As JKG pointed out,<sup>17</sup> it is difficult to say when the stock market boom of the 1920s began. In the second half of 1924, the New York Times index (NYTI) of 25 industrial stocks rose from about 106 to 134—a 27% gain in 6 months. A year later, at the end of 1925, it had increased to 181 for a yearly gain of 35%. These 2 years provided the formative stage for the bull market of the second half of the 1920s. The next year, 1926 was an off year in which the NYTI lost most of the gains of 1925, reaching as low as 143 in March 1926. However, beginning in 1927, the stock market began advancing, and except for brief temporary setbacks, continued to rise through the summer of 1929. The NYTI proceeded to reach 245 at the end of 1927, 332 at the end of 1928, and 449 in August of 1929.

The Federal Reserve cut the rediscount rate from 4 to 3.5% in 1927, and it is widely believed that this was a major contributor to the further expansion

<sup>17</sup> Galbraith (1954).

of the stock bubble. However, JKG disparages this belief as being too simplistic. This small cut in a key interest rate could not have opened the spigots of money flow inordinately, and indeed later in the boom, the cost of borrowing became a trivial matter compared to expectations of future gain from securities, when investors were happy to pay double-digit interest rates to borrow funds to invest.

According to JKG, the gains in stock prices through 1927 could possibly be rationalized to some extent as reflecting real gains in the economy, although this requires a stretch of the meaning of “rational.” Considering that the NYTI at the end of 1927 had more than doubled in 3 years, such gains appear to be excessive. There never has been, nor will there ever be, a doubling of the US economy in 3 years—by any reasonable yardstick. However, allowing that prior to 1928, perhaps the stock market was merely “exuberant,” JKG argued that in 1928 “the nature of the boom changed,” and there was a “mass escape into make-believe” and the “speculative orgy started in earnest.” JKG pointed out that in this period:

[The stock market] did not rise by slow, steady steps, but by great vaulting leaps. On occasion it also came down the same way, only to recover and go higher again.

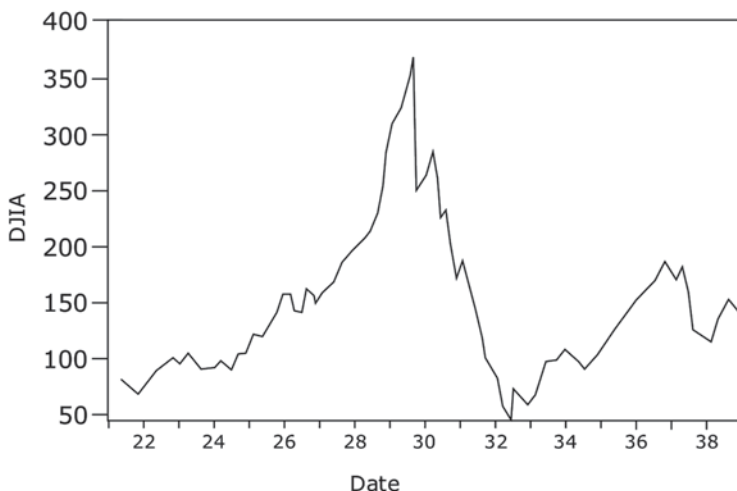
Another indicator of speculative excess was the huge increase in volume of shares traded per day in 1928 and 1929. Wild oscillations, both upward and downward (but predominantly up), took place, suggesting that valuation of stocks had taken on an extremely subjective basis and economic fundamentals no longer influenced stock prices (as if they usually did).

The folklore of the stock market in the late 1920s is replete with stories of waitresses, taxi drivers, barbers and others who overheard discussions by financiers and, based on that information, made a good profit in the stock market. Supposedly, almost everyone in America was turned on to stocks and many people checked with their brokers several times a day.<sup>18</sup> However, it seems likely that the number of people who actually owned stocks was about 1.5 million, and the number of people with substantial stock holdings was considerably lower than that.

About 40% of the investing public had margin accounts in which they could borrow funds in order to invest a greater amount of money into stocks. In those days, margin was not regulated, and while some brokers limited margin to 50% (i.e., one could borrow up to US\$ 1 for each dollar invested

---

<sup>18</sup> I am reminded of a *New Yorker* cartoon that shows the manager of a professional baseball team going out to the mound to talk to his pitcher. In the background, one can perceive a stock market ticker in the dugout, and the conversation at the mound is not about baseball, but about investments.



**Fig. 2.5** Dow-Jones Industrial Average in the 1920s and 1930s. (By permission from: <http://www.online-stock-trading-guide.com/1930-stock-chart.html>)

providing 2:1 leverage), some brokers allowed buying stocks on 10% margin (providing 10:1 leverage). For investors buying on 10% margin, their total investment would be wiped out by a 10% drop in stock prices, necessitating a “margin call” by the broker requiring the investor to either put up more cash or have his stock sold out at the market price.

Believing that margin loans had been a key element of the stock market boom and crash in the late 1920s, the Federal Reserve Bank was empowered to regulate margin lending with the Securities and Exchange Act of 1933. Ricke provided an analysis concluding: “the availability of margin loans can cause the development of a stock market bubble through inducing investors to pay more for a stock than its fundamental value.”<sup>19</sup>

In the 1920s, stock prices were typically in the range of a few hundred dollars per share, and since dollars were worth a good deal more than they are worth today, a round lot of 100 shares represented a significant investment. Smaller investors did not have enough cash to diversify their portfolios. Investment trusts were invented as a means of providing such diversification to investors, who bought shares in a trust, and the trust maintained a diversified portfolio. These trusts were the forerunners of modern mutual funds. The investment trusts were also used to increase leverage. The investment trusts could increase their leverage by issuing bonds to borrow money from the public and invest those funds in the stock market.

Figures 2.5 and 2.6 show the Dow-Jones Industrial Average (DJIA) during the 1920s and 1930s. The advance began in the mid-1920s and accelerated

<sup>19</sup> Ricke (2004).



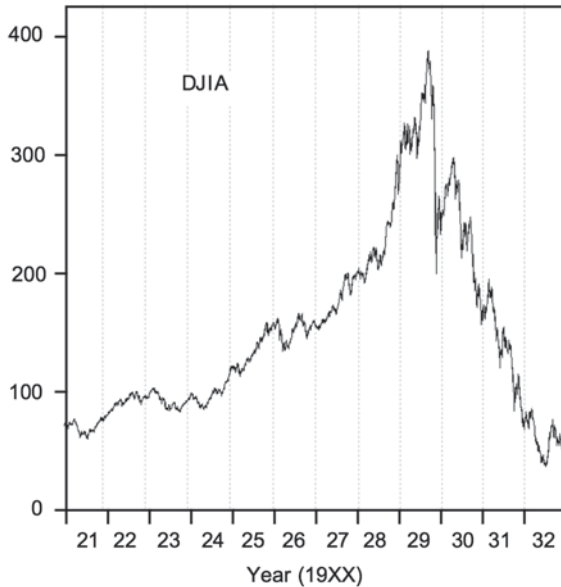


Fig. 2.6 Dow-Jones Industrial Average in the 1920s. (Jiménez 2010)

in the late 1920s. The stock market began to falter in September 1929, but then quickly recovered. It began to pass through large gyrations, upward and downward—a good sign that the end was near.

During the month of October, 1929, jumps of as much as 10% in 1 day occurred, and the NYTI, which had peaked at 449, oscillated between 292 and 415, ending the month at 344 (down 22% from the August peak). On Tuesday, October 29, 1929, an unprecedented 16,410,030 shares were traded and the market suffered a loss of about 13%. During the week, the market lost 30% of its value.

By November 13, the NYTI dropped to 235, a 48% drop from the peak. As seen in Fig. 2.6, the stock market continued to drop precipitously into 1932, when it actually finished below the low point of 1922.

### 2.3.3 The Crash of 1929

Much has been written about the stock market crash that began in 1929 and the depression of the 1930s—far more than has been written about the spectacular rise of the 1920s. Many explanations have been offered. Most of these lean toward the view that the rise of the 1920s was not acutely abnormal, and special circumstances brought about the downfall of the markets and the ensuing depression. One common “explanation” is based on credit tighten-

ing. For example, Shiller<sup>20</sup> claimed that credit tightening was an important contributor to the crash of 1929 and the ensuing depression. He said,

There have been occasions on which tightened monetary policy was associated with the bursting of stock market bubbles. For example, on February 14, 1929, the Federal Reserve raised the rediscount rate from 5–6% for the ostensible purpose of checking speculation. In the early 1930s, the Fed continued the tight monetary policy and saw the initial stock market downturn evolve into the deepest stock market decline ever, and a recession into the most serious US depression ever.

However, JKG argued that nothing could be further from the truth. First of all, the stock market inflated unabated after the February 1929 increase in the discount rate. The stock market simply shrugged off the increase in the interest rate. Secondly, the bubble mentality was so frothing that investors were happy to pay double-digit margin interest rates<sup>21</sup> to plow more money back into the stock market. According to JKG, what might have contributed more to the demise of the bubble and formation of the depression was fiscal policy in which taxes were raised to balance the budget—which was what JKG calls the “conventional wisdom” of the times.

Some have argued that stocks were not fundamentally overpriced in 1929, and the crash was the result of unfounded public hysteria. As discussed in Sect. 1.8.2, the Federal Reserve System published a report in 2003 that concluded

Even at the 1929 peak, stocks were undervalued relative to the prediction of theory.

Apparently, the Federal Reserve believes that even after the spectacular rise in stock prices of the latter half of the 1920s, stocks still remained underpriced. However, as pointed out at the end of Sect. 1.9, JKG described the Federal Reserve in 1929 as “a body of startling incompetence” and there seems to be no reason to suggest that this has changed in the past 84 years.

What seems to be missing from the explanations for the crash (except for writings of JKG) is that the crash was a natural and unavoidable consequence of the speculative rise that preceded it.

The connection between the stock market crash and the ensuing depression was also discussed at length by many commentators. Did the stock market crash cause the depression, or was the crash merely an indicator of the coming

---

<sup>20</sup> Shiller (2004).

<sup>21</sup> In late 1929, margin interest rates often approached 20% and investors were happy to pay that.

depression that resulted from more profound causes? The crash of the stock market in 1929 is widely believed to have contributed to the ensuing depression, although the exact mechanism by which this connection was made is not clear. We discuss this further in Sect. 2.4.

A book was published by Bierman in 1998 that purported to analyze possible contributing causes for the crash of 1929, and to some extent absolved Irving Fisher.<sup>22</sup> First, he listed possible causes for the 1929 crash as follows:

1. The stock market was too high in September 1929 (values did not justify prices) because of excessive speculation and the crash was inevitable.
2. A real downturn in business activity.
3. The Hatry affair in England (whereby some major companies failed due to fraud) and the subsequent raising of interest rates in London, and liquidation of English investments in the USA.
4. Actions of the Federal Reserve Board.
5. The message being sounded by the media and by important governmental figures on both sides of the Atlantic that the US stock market was too high and there was a “war” against the speculators.
6. Excessive buying on margin and excessive buying of investment trusts.
7. Excessive leverage when the debt of operating utilities, holding companies, investment trusts, and margin buying are all considered.
8. The setback in the public utility market arising from an adverse decision for utilities in Massachusetts (refusal to allow splitting of stock to encourage investment).
9. Over reaction by the market.

The flyer for his book says,

Attempting to reveal the real causes of the 1929 stock market crash, Bierman refutes the popular belief that wild speculation had excessively driven up stock market prices and resulted in the crash. Although he acknowledges some prices of stocks such as utilities and banks were overpriced, reasonable explanations exist for the level and increase of all other securities stock prices. Indeed, if stocks were overpriced in 1929, then they were even more overpriced in the current era (1998) of staggering growth in stock prices and investment in securities. [This statement is very revealing. Bierman made the valid point that one may compare the speculative excess of the *dot.com* craze in the late 1990s to that of 1929. In fact, this is displayed in Fig. 1.11 of this book. However, Bierman, under the apparent belief that the *dot.com* bubble was legitimate and would not subsequently crash, suggested that the bubble of 1929 was no

---

<sup>22</sup> Bierman (1998).

worse (or at least not much worse) than that of the late 1990s—which seems like a reasonable claim. Hence in his view, the legitimacy of the *dot.com* bubble would convey legitimacy upon the 1929 bubble. However, writing in 1998, he had no inkling that the *dot.com* bubble would burst in 2000, a year and a half later, thus reversing his argument, and leading to the inevitable conclusion that the 1929 bubble was just as excessive as the 1998 bubble, rather than the 1929 bubble was just as benign as the 2000 bubble.] The causes of the 1929 crash, Bierman argued, lie in an unfavorable decision by the Massachusetts Department of Public Utilities coupled with the popular practice known as debt leverage in the 1920s corporate and investment arena.

Bierman rejected the first two causes in his list. He believed that elements 6 through 9 triggered the crash, and element 3 contributed to it. He concluded,

The overall stock market was not excessively high in September 1929 and the business outlook was favorable. Thus, the October crash did not occur because the market was too high. However, at least one segment of the market (public utilities) was too high and too leveraged, and the stage was set for the selling panic by the press and governmental officials repeatedly speaking of an orgy of speculation.

Note that Bierman did not think that Federal actions were a major factor in the crash. It is also noteworthy that Bierman did not seem to think that a quadrupling of stock prices in a few years qualified as an “orgy of speculation.”

## 2.4 The Great Depression of the 1930s

The Great Depression of the 1930s began subtly in the summer of 1929 and picked up steam into 1930. It lasted about 10 years and was unmatched for duration and depth by any other economic depression of our time. It is likely that the advent of World War II was a factor in the ending of the Depression.

Samuelson described the Great Depression:<sup>23</sup>

The Great Depression of the thirties remains the most important economic event in American history. It caused enormous hardship for tens of millions of people and the failure of a large fraction of the nation's banks, businesses, and farms. It transformed national politics by vastly expanding government, which was increasingly expected to stabilize the economy and to prevent suffering.... President Franklin Roosevelt's New Deal gave birth to the American version of

---

<sup>23</sup> Samuelson (2007).

the welfare state. Social Security, unemployment insurance, and federal family assistance all began in the thirties.

It is hard for those who did not live through it to grasp the full force of the worldwide depression. Between 1930 and 1939 US unemployment averaged 18.2%. The economy's output of goods and services (gross national product) declined 30% between 1929 and 1933 and recovered to the 1929 level only in 1939. Prices of almost everything (farm products, raw materials, industrial goods, stocks) fell dramatically.... World trade shriveled: between 1929 and 1933 it shrank 65% in dollar value and 25% in unit volume. [The depression was worldwide.] Most nations suffered.

According to Romer,<sup>24</sup>

The fundamental cause of the Great Depression in the United States was a decline in spending (sometimes referred to as aggregate demand), which led to a decline in production as manufacturers and merchandisers noticed an unintended rise in inventories.

That may be true, but what caused the cause? Why did this “decline in spending” take place? The “decline in spending” seems to be a symptom, not a cause.

Romer then expounded on several other factors that influenced the downturn. The crash of the stock market in 1929 is widely believed to have contributed to the ensuing depression, although the exact mechanism by which this connection was made is not clear. According to Romer, the stock market crash “generated considerable uncertainty about future income, which in turn led consumers and firms to put off purchases of durable goods.” According to this view, people may not have been much poorer but they felt poorer. With a sharp decline in spending, production fell rapidly in 1929 and 1930. Romer suggested:

While the Great Crash of the stock market and the Great Depression are two quite separate events, the decline in stock prices was one factor causing the decline in production and employment in the United States.

However, as JKG pointed out, even though there was a great euphoria in the 1929 stock market, only a small fraction of Americans actually owned stocks. Is there really a valid connection between the stock market crash and the Great Depression?

---

<sup>24</sup> Romer (2003).

Romer also indicated that banking panics and monetary contraction were factors in creating the Depression.

Prior to creation of the Federal Deposit Insurance Corporation (FDIC), the USA experienced widespread banking panics from 1930 to 1933. By 1933, one-fifth of the banks that existed at the start of 1930 had failed. The bank panics caused a dramatic rise in the amount of currency people held (in their mattresses?) relative to their bank deposits. This reduced the effective money supply, and contraction by the Federal Reserve added to the problem. According to Bordo, the consensus view by economists is that the 1929 crash had a major impact in producing a recession in 1930. This recession deepened to the Great Depression late in 1930 when the Fed failed to prevent a series of banking panics that erupted in the next 3 years. “The banking panics in turn impacted the real economy through the collapse in money supply, which produced massive deflation.... The depression spread abroad through the fixed exchange rate links of the classical gold standard.”<sup>25</sup>

As JKG pointed out,<sup>26</sup> the “conventional wisdom” was “a set of platitudes that have been repeated incessantly until many people believed them—despite the lack of verification,” and “when put to the test, the evolution of events often proves the conventional wisdom wrong.” The conventional wisdom held that when the economy steered off course, the ultimate remedy was to balance the federal budget. However, as JKG emphasized, taxes had to be raised to achieve a balanced budget, and “it would be hard to imagine a better design for reducing both the private and the public demand for goods, aggravating deflation, increasing unemployment, and adding to the general suffering.” Nevertheless, it was widely believed that a balanced budget was just the thing to deal with the Depression.

JKG quoted President Hoover in the early 1930s who called the balanced budget an “absolute necessity; the most essential factor to economic recovery; the imperative and immediate step; indispensable; the first necessity of the Nation; and the foundation of all public and private financial stability.” According to JKG, the “conventional wisdom” dictated policies that were certain to make matters worse during the Depression. For example, “Franklin D. Roosevelt was elected in 1932 with a strong commitment to reduced expenditures and a balanced budget....” In the current era since the Reagan years, as practiced by Republicans and Democrats alike, our “conventional wisdom” is just the opposite; we now believe that the government should combat downturns in the economy by pumping money into the banking system and borrow essentially without limit. As Dick Cheney put it: “deficits

---

<sup>25</sup> Bordo (2003).

<sup>26</sup> Galbraith (1958–1998).

don't matter." Since Obama was elected in 2008, the federal debt has swelled to over US\$ 17,000,000,000,000.

Romer discussed the belief of some economists that the Federal Reserve's goal of preserving the gold standard for American currency caused huge declines in the American money supply. However, had the Federal Reserve expanded the money supply, foreigners could have lost confidence in the USA's commitment to the gold standard, leading to large gold outflows and the USA could have been forced to devalue. The effect of these factors on foreign countries was described by Romer:

The deflation in America made American goods particularly desirable to foreigners, while low income reduced American demand for foreign products. To counteract the resulting tendency toward an American trade surplus and foreign gold outflows, central banks throughout the world raised interest rates. Maintaining the international gold standard, in essence, required a massive monetary contraction throughout the world to match the one occurring in the United States. The result was a decline in output and prices in countries throughout the world that also nearly matched the downturn in the United States.

Toward the end of the twentieth century, most economists were enthusiastically in favor of free trade, and believed that free trade is a necessary ingredient of burgeoning national economies. This has been translated into policy by many governments. During this time period, America allowed most of its manufacturing capability to be usurped by Asia (predominantly China) so it could buy cheap products from them (for a while, until wages rise in Asia—which they will). However, the Chinese demand for oil and other commodities drove those prices up, resulting in severe problems for the US balance of payments in importing oil, with a much weaker dollar. Free trade may prove helpful to the developing nations; it seems to be to be a disaster for the US.

In the 1930s, economists were not favorable to free trade. The 1930 enactment of the Smoot–Hawley tariff in the USA was meant to boost domestic farm incomes by reducing foreign competition in agricultural products. But other countries followed suit, both in retaliation and in an attempt to force a correction of trade imbalances. Romer asserted,

Scholars now believe that these policies may have reduced trade somewhat, but were not a significant cause of the Depression in the large industrial producers. Protectionist policies, however, may have contributed to the extreme decline in the world price of raw materials, which caused severe balance-of-payments problems for primary-commodity producing countries in Africa, Asia, and Latin America and led to contractionary policies.

However, some analysts believe that the restrictions on trade contributed significantly to the Depression.

Samuelson's view was

The depression [was] the final chapter of the breakdown of the worldwide economic order. The breakdown started with World War I and ended in the thirties with the collapse of the gold standard. As the depression deepened, governments tried to protect their reserves of gold by keeping interest rates high and credit tight for too long. This had a devastating impact on credit, spending, and prices, and an ordinary business slump became a calamity.

Samuelson listed four major factors contributing to the origin of the Depression:

1. ***The gold standard.*** Governments had to maintain gold reserves to back up paper money. This limited their ability to expand the money supply to stimulate the economy. A loss of gold (or convertible currencies) forced governments to raise interest rates which had a depressing effect on the economy. One view is that the Great Depression was “the last gasp of the gold standard.” (However, a huge increase in the money supply in 2007–2008 had little effect on a more recent recession.)
2. ***Economic policy.*** According to Samuelson, “economic policy barely existed. There was little belief that governments could, or should, prevent business slumps.” However, JKG pointed out that there *was* a policy, and that policy was to balance the budget—which in this instance was counterproductive. (Note that by the 2000 years, the pendulum had swung so far that a principal objective of the Federal Reserve is to counter business slumps, even those produced as the aftermath of excessive speculation.)
3. ***Production patterns.*** Samuelson said,

Farming and raw materials were much more important parts of the economy than they are today. This meant that lower commodity prices could cripple domestic prosperity and world trade, because price declines destroyed the purchasing power of farmers and other primary producers (including entire nations). In 1929 farming accounted for 23% of US employment (versus 2.5% in 2008). Two-fifths of world trade was in farm products, another fifth was in other raw materials.

4. ***Impact of World War I.*** According to Samuelson, wartime inflation, when the gold standard had been suspended, had impacted the stability of international relationships between currencies that raised prices and inspired fears that gold stocks were inadequate to provide backing for enlarged money supplies.



Samuelson further discussed the lack of action by the Federal Reserve in permitting two-fifths of the nation's banks to fail between 1929 and 1933. Since deposits were not insured then, the bank failures wiped out savings and shrank the money supply by 1/3. Friedman and Schwartz<sup>27</sup> argued that it was this drop in the money supply that strangled the economy. They considered the Depression to have been originally an American affair that later spread abroad.

The literature on the Depression is extensive. There are many theories for the causes of the Depression developed by economists. Economists tend to seek technical economic factors, and it is likely that most of these were, in some part, contributing factors. The underlying belief in these analyses seems to be that the public is assumed to be rational, and with proper and appropriate economic policies, all will go well in the market economy. However, there is a psychological element to the market economy, and like the psychology of an individual, the psychology of the ensemble of people can rise to euphoric heights and crash to severe depression. It seems likely that in addition to the specific economic policy issues of the time, there was a significant psychological factor in the Great Depression. Like particles and antiparticles in physics, the antithesis of the expanding bubble driven by greed of the herd can be expressed as a herd mentality driven by fear. Similarly, in seeking explanations for many bubbles after they pop, economists tend to search for technical factors but do not often mention the psychological herd instincts of excessive greed or fear. According to Eliot Janeway, the reason that economists are held in high regard in America is "...because everyone in America takes the advice of economists, and none of it works, but things work out anyway."

In the aftermath of the great recession following the collapse of the 1997–2007 housing bubble, several economists revisited the Depression of the 1930s to juxtapose the two events and thereby derive insights as to causes of both.

Joseph E. Stiglitz<sup>28</sup> discussed the argument that the Great Depression was caused primarily by excessive tightening of the money supply by the Fed. Seventy-seven years later, Ben Bernanke, a scholar of the Depression, opened the monetary spigots very wide. In referring to more recent times, Stiglitz said,

Beginning in 2008, the balance sheet of the Fed doubled and then rose to three times its earlier level. Today it is \$ 2.8 trillion. While the Fed, by doing this, may have succeeded in saving the banks, it didn't succeed in saving the economy.

---

<sup>27</sup> Friedman and Schwartz (1971).

<sup>28</sup> Stiglitz (2012).

Stiglitz went on to say,

Reality has not only discredited the Fed but also raised questions about one of the conventional interpretations of the origins of the Depression. The argument has been made that the Fed caused the Depression by tightening money, and if only the Fed back then had increased the money supply—in other words, had done what the Fed has done today—a full-blown Depression would likely have been averted. In economics, it's difficult to test hypotheses with controlled experiments of the kind the hard sciences can conduct. But the inability of the monetary expansion to counteract this current recession should forever lay to rest the idea that monetary policy was the prime culprit in the 1930s. The problem today, as it was then, is something else. The problem today is the so-called real economy. It's a problem rooted in the kinds of jobs we have, the kind we need, and the kind we're losing, and rooted as well in the kind of workers we want and the kind we don't know what to do with. The real economy has been in a state of wrenching transition for decades, and its dislocations have never been squarely faced. A crisis of the real economy lies behind the Long Slump, just as it lay behind the Great Depression.

Stiglitz, and Bruce Greenwald are engaged in developing an alternative theory of the Depression—and an alternative analysis of what ailed the economy after the housing bubble burst in 2007–2008. They said,

This explanation sees the financial crisis of the 1930s as a consequence not so much of a financial implosion but of the economy's underlying weakness.... The underlying cause was a structural change in the real economy: the widespread decline in agricultural prices and incomes, caused by what is ordinarily a "good thing"—greater productivity.

What this transition meant, however, is that jobs and livelihoods on the farm were being destroyed. Because of accelerating productivity, output was increasing faster than demand, and prices fell sharply. It was this, more than anything else that led to rapidly declining incomes. Farmers then (like workers now) borrowed heavily to sustain living standards and production. Because neither the farmers nor their bankers anticipated the steepness of the price declines, a credit crunch quickly ensued. Farmers simply couldn't pay back what they owed. The financial sector was swept into the vortex of declining farm incomes. The cities weren't spared—far from it. As rural incomes fell, farmers had less and less money to buy goods produced in factories. Manufacturers had to lay off workers, which further diminished demand for agricultural produce, driving down prices even more. Before long, this vicious circle affected the entire national economy.

Stiglitz emphasized the similarities between the origin of the Great Depression and that of the post-housing bubble slump:

In the 1920s, we were moving from agriculture to manufacturing. Today we are moving from manufacturing to a service economy. The decline in manufacturing jobs has been dramatic.... There are two reasons for the decline. One is greater productivity—the same dynamic that revolutionized agriculture and forced a majority of American farmers to look for work elsewhere. The other is globalization, which has sent millions of jobs overseas, to low-wage countries or those that have been investing more in infrastructure or technology.... Whatever the specific cause, the inevitable result is precisely the same as it was 80 years ago: a decline in income and jobs. The millions of jobless former factory workers once employed in cities...are the modern-day equivalent of the Depression's doomed farmers.

For a time, the bubbles in the housing and lending markets concealed the problem by creating artificial demand, which in turn created jobs in the financial sector and in construction and elsewhere. The bubble even made workers forget that their incomes were declining. They savored the possibility of wealth beyond their dreams, as the value of their houses soared and the value of their pensions, invested in the stock market, seemed to be doing likewise. But the jobs were temporary, fueled on vapor.

Stephen Gjerstad and Vernon L. Smith (GS) also reviewed causes of the Great Depression. They pointed out “Many aspects of the Crash of 1929 suggest that it was not the primary cause of the subsequent deterioration of the financial system.” As we have pointed out, the number of people who actually owned stocks was about 1.5 million, and the number of people with substantial stock holdings was considerably less than that.

GS provided evidence that

...the stock market crash of 1929 caused only slightly more damage than the downturn in the stock market between 2000 and 2002, which raises the question: What was the source of the storm that overtook the financial system between the late fall of 1930 and the spring of 1933, dragging the country into the Great Depression?

GS cited evidence that during the decade 1920–1929, new construction increased the number of dwelling units from 17.6 million in 1920 to nearly 23.3 million in 1930. The number of owner-occupants increased from 7 million to about 10.5 million. The expansion of real estate occurred largely via mortgages. Real estate mortgage indebtedness increased from US\$ 12.1 billion to US\$ 33.1 billion during this period. The volume of mortgage bond

issues rose from US\$ 300 million around 1920 to over US\$ 5 billion in 1935. Figures 1.3, 2.3, and 2.4 and Table 2.2 clearly show that the residential housing boom peaked around 1925–1926. The boom in commercial real estate persisted until September 1928 but construction contracts were 40% lower in September 1929 than in September 1928. Automobile production continued increasing through 1927–1929 but the rate of increase tailed off to nil in the summer of 1929. Between 1921 and 1929, household debt as a percentage of household wealth increased from 10.2 to 27.2%. A huge boom in residential housing construction was financed by an equally rapid increase in household indebtedness. As GS put it: “The [stock market] crash of October 1929 resulted from a sudden recognition that the credit system had been stretched to its limit: New houses and consumer durables could be produced, but creditworthy borrowers were scarce.”

When the collapse came, between 1929 and 1932, the net flow of funds into mortgages fell dramatically. GS noted the similarity between the pattern of net residential mortgage lending between 1900 and 1931 and the pattern observed for 1974–2008, shown in Fig. 2.3:

The prolonged increase above the trend in mortgage growth from 2001 through 2006 has a striking parallel in the escalation in mortgage lending from 1923 through 1928. The sudden reduction in the net flow of mortgage funds from 1928 to 1930 is remarkably similar to the rapid decline from the second quarter of 2007 to a year later.

GS summarized as follows,

The problem in modern economies is not what can be produced. The technology and resources available for production in the 1930s were the same as, or better than, they had been in the 1920s. The real problem is how markets allocate output so that those who acquire it have the capacity to pay for it. Since so much production, trade, and durable-goods consumption depends on credit, the real issue is market effectiveness in the assessment of credit risk.

I disagree somewhat with this appraisal. Credit is part of the overall picture. But ultimately, what is important is the ability of people to pay for goods and services.

As GS pointed out earlier, during periods when productivity increases rapidly, improvements in productivity are used by industry and commerce to reduce the number of jobs required to produce goods and supply services. The increased capability to produce more goods with fewer employees is not matched by a comparable increase in purchasing power of the public. This

mismatch hurts the overall economy as businesses cut back production to match lower purchasing power of the public.

What we have witnessed in the past few decades are repeated attempts to generate more wealth, not through higher employment and higher wages, but through paper asset bubbles built upon a foundation of debt. This provided temporary relief when wages were relatively stagnant but always ended up in cataclysmic collapse, only to be reborn in a new bubble. Tax policies greatly favor the rich. In the past 30 years, the gap between the top and bottom tiers of income has widened greatly. The irony of the situation is that the rich control governments, and they have created government policies that shunt so much wealth into the top tiers that the lower tiers cannot effectively purchase the products produced by the rich. Then the rich suffer when their products do not sell.

It seems to be widely believed among economists that tight money policies of the Fed in the late 1920s and early 1930s “turned the crash into a depression—after the crash had been precipitated.” Because of this belief, Bernanke, as head of the Fed, “aggressively expanded the money supply beginning in August 2007—even before the financial crash was fully underway.”

GS commented that this policy had “little effect.” GS commented,

Aggressive monetary policy designed to increase liquidity did not resolve the [2007–2008] crisis. It also seems likely that it would not have resolved the crisis that overtook the financial system between late 1930 and the spring of 1933. Both crises appear to have originated in widespread household insolvencies that then infected the financial system. Liquidity alone could not make the banks and households whole again.

GS noted that massive losses of shareholder equity from 2000 to 2002 and from 1929 to 1930 “caused almost no damage to the financial system.... Surely another factor must have been present in that case, and in the present one. Arguably, this factor was, in both cases, excessive debt among borrowers with especially limited assets and income—hence with an especially constrained ability to repay. The mortgages made to these borrowers turned on poor credit assessment.”

Brocker and Hanes (BH)<sup>29</sup> asserted,

Prior to the 2000s there were several regional real-estate booms in American history, but the only one that appears to have spread across most of the country occurred in the mid-1920s.... The mid-1920s house-building boom was

---

<sup>29</sup> Brocker and Hanes (2013).

accompanied by rising house prices, increased homeownership rates, and financial innovations that boosted the supply of credit to real-estate developers and house-buyers. It was also accompanied by an unprecedented increase in the volume of mortgage debt.... In the country as a whole, construction and house prices peaked in 1925 and fell off steadily over the late 1920s. With the onset of the Great Depression in 1930, the decline in house prices accelerated and many mortgages went into default.... From 1930 to 1934, the value of residential property fell about one-third....

BH discussed bubbles, and the difficulties that economists have in defining and detecting bubbles, as if this were a rational position. They said,

In the context of house markets, most economists define a bubble as a situation in which prices are elevated by expectations of future increases in prices, and the expected level of future prices is inconsistent with a rational view of the economy. To identify a bubble, it may be necessary to specify what a rational view would be, based on a theoretical model.

I beg to differ. You do not need a theoretical model to observe that a seemingly perpetual money machine is in progress.

BH quoted Glaeser, Gyourko, and Saiz (2008)<sup>30</sup> as “explaining” that

...rational bubbles cannot arise in housing markets, because the long-run supply of housing is not fixed. In a rational bubble, an asset’s price can remain above its fundamental value forever, validating the expectations that support the bubble. To make this true, first, the rate of increase in the price, times the probability that the bubble will continue for one more period, must equal the real interest rate, so that people are willing to hold the bubbled asset. Second, the real interest rate in the economy must be lower than the rate of general rate of economic growth in real income and wealth (the economy must be “dynamically inefficient”), so that the future value of bubbled assets remains within future generations’ buying power. A rational bubble cannot arise on an asset that has an ordinary upward-sloping long-run supply curve because the continuously rising price of the asset would call forth the production of more and more units, whose value would eventually exceed future generations’ buying power.

The definition of a so-called rational bubble as “the rate of increase in the price, times the probability that the bubble will continue for one more period, must equal the real interest rate” is artificial because one cannot know “the probability that the bubble will continue for one more period.” In a full-blown

<sup>30</sup> Glaeser et al. (2008).

bubble, it is entirely the rate of increase in the price that drives the bubble upward. The idea of a semipermanent rational bubble in which the probable benefit is comparable to the real interest rate is simply not a bubble. While it might be true that a bubble can theoretically last longer if the assets involved are capped in amount, in the case of housing things are more complex. As housing prices rise, production of new houses will undoubtedly increase. But it takes time to acquire land, build houses, and sell them. Meanwhile, a housing bubble can froth. In addition, in urban areas, most of the choice areas are already built upon, and new housing tends to be relegated to fringe areas that are far less desirable. As a result, the advent of new housing production will not in itself puncture a housing bubble. In fact, the price of new housing will escalate along with resold housing. All bubbles, rational or not, pop when the prices reach levels that far exceed the public's buying power.

## 2.5 The Savings and Loan Scandal of the 1980s

### 2.5.1 The Original Problem

In 1980, the Federal Savings and Loan Insurance Corporation (FSLIC) insured approximately 4000 state-chartered and federal-chartered savings and loan (S&L) institutions with total assets of US\$ 604 billion. The vast majority of these assets were held in traditional S&L mortgage-related investments. Another 590 S&Ls with assets of US\$ 12.2 billion were insured by state-sponsored insurance programs in Maryland, Massachusetts, North Carolina, Ohio, and Pennsylvania. One-fifth of the federally insured S&Ls, controlling 27% of total assets, were permanent stock associations, while the remaining institutions in the industry were mutually owned.<sup>31</sup>

Two books provide lengthy descriptions of the S&L scandal of the 1980s.<sup>32</sup> In this section, I rely heavily on Lowy's excellent book.

The S&L institutions of America were founded for the purpose of providing funding for residential homes. Prior to the late 1970s, most home mortgages were at a fixed interest rate, typically for 30 years, but occasionally for shorter terms. S&Ls were highly regulated and typical requirements included:

- Fixed upper limits to the interest they were allowed to pay on deposits.
- They were not allowed to borrow long-term.
- Requirements for maintaining capital as a percentage of assets.

---

<sup>31</sup> FDIC (1996).

<sup>32</sup> Lowy (1991) and Pizzo et al. (1989):



- Business was limited to loans for residential housing. Loans were not permitted for nonresidential construction, raw land investment, or other enterprises (however, Texas approved a major liberalization of S&L powers allowing property development loans of up to 50 % of net worth starting in 1967).
- Many S&Ls were mutual (owned by depositors). For those that were owned by stockholders, an S&L was required to have at least 400 stockholders with no single investor owning more than 25 % of the stock.
- Typically, mortgages were only issued if the mortgagee paid down a significant down payment (at least 20 % of the value of the property) so the Loan-to-Value (LTV) ratio was equal to or less than 0.8.

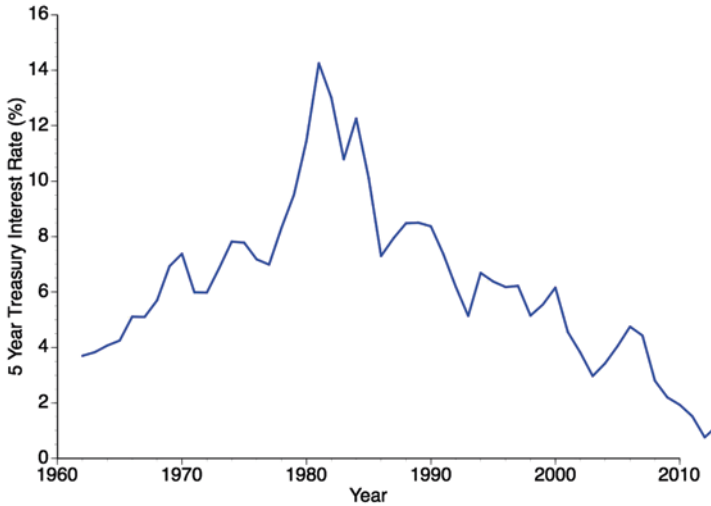
Texas, California, other states, and the federal government liberalized these constraints in the early 1980s after S&Ls developed financial problems.

Although not widely recognized in the 1970s, and possibly still not widely recognized today, the whole concept of residential mortgages issued by banking institutions depends on the tension between: (1) short-term interest rates paid by the banks on deposits and certificates of deposit (CDs) to acquire funds and (2) long-term interest rates on mortgages that produce income for the banks. This process for funding residential housing is dependent on the stability of interest rates and constraints on inflation. Typically, an S&L must have a spread between average mortgage interest and average depositors' interest of about 2 % in order to cover operating costs and thus break even. While an S&L might initially lend money on a mortgage at an interest rate greater than 2 % above the current average of depositors' interest, if general short-term interest rates in the country rise as the years go by, the spread between mortgage interest and average depositors' interest may shrink, and the bank might start to lose money on its loans. As it loses money, it would have to eat into its capital, and eventually become insolvent (when its capital becomes negative). On the other hand, if interest rates remain comparatively stable over the years, the mortgages will continue to generate a net profit for the S&L. Another problem for S&Ls is that when short-term interest rates rise, competitive interest rates from other sources (money market accounts, government notes, etc.) tend to siphon off funds from the S&L if the rates are higher than the S&Ls are allowed to pay depositors.

As Lowy said,

The interest rate sensitivity mismatch that devastated the S&L industry in the early 1980s [see Fig. 1.11] was built into its basic design. The two roles that society had assigned to S&Ls were to provide long-term credit to homeowners at stable rates and to get the money to lend by taking deposits from individual savers. The savers' money could be withdrawn at any time because that was





**Fig. 2.7** Variation of interest rates from 1962 to 2013. (Data from <http://www.federalreserve.gov/RELEASES/h15/data.htm>)

good for the public; the mortgages had to be fixed-rate and long-term because that also was good for the public. The S&Ls weren't allowed to borrow long, and just about the only investments they were allowed to make were long-term mortgages.

It is noteworthy that in the aftermath of the 2000–2001 *dot.com* stock market debacle, the Fed pushed down interest rates in a frantic effort to resurrect the stock market bubble that preceded 2000, and in the process, millions of homeowners refinanced their mortgages at these new lower rates.

With banks holding long-term mortgages paying low interest rates, if short-term depository interest rates rise in the future—as they likely will (considering the inflationary policies of Fed monetary policy in 2007–2008)—there could be another wholesale failure of the banking system in the future analogous to the S&L problem of the 1980s.

As can be seen from Fig. 2.7, interest rates varied over a fairly narrow range in the 1970s until they started rising sharply around 1977. Nevertheless, only about 200 (of 5000) S&Ls lost money in the 1970s.

As Lowy said,

Amazingly, for many years what was good for the public was good for the S&Ls...[S&Ls benefited] for many years because most of the time long-term rates were higher than short-term rates and interest rates, generally were stable (albeit with an upward bias) from World War II until 1966, when interest rates started to rise more significantly in response to forecasts of inflation.

However, with the sharp rise in interest rates toward the end of the 1970s, things rapidly got worse. In 1980, 1800 (of 5000) S&Ls lost money, and in 1981 and 1982, 4000 (of 5000) S&Ls were in the red.

The seeds of the problem were planted in 1966 when, as Lowy summarized,

In order to protect thrift institutions from having to pay the rising market rates of interest that they couldn't afford, Congress put interest rate controls on savings deposits at all federally insured institutions. No bank or S&L, Congress decreed, could pay more interest on a depositor account than the regulators permitted. In effect, by interest rate regulation, Congress artificially corrected the mismatch by fixing the rate on savings deposits and thereby making them act as if they had locked-in, long-term rates, just like the mortgages owned by thrifts. Thus the policy of rate regulation permitted S&Ls to flourish again without depriving homeowners of long-term, fixed-rate mortgages. Savers, unaware that the system was cheating them, were made to foot the bill.

As Lowy described it,

At the end of the 1970s, the hitherto apparently successful policy of interest rate regulation unraveled. It no longer worked because inflation had driven interest rates so much higher than the 5.5% regulatory ceiling on passbook accounts at thrifts.... By 1978, Treasury bills were paying over 9%.... Many depositors couldn't resist moving their money out of thrift institutions and into these higher-yielding instruments. In response to this threat to thrift institutions' liquidity, in June 1978 the regulators tried the expedient of letting thrifts pay higher interest rates on six-month CDs while retaining the old ceilings on passbook accounts.... That helped keep money in the thrift institutions, but it cost them a lot. By the end of 1979, over 20% of depositors' money was in six-month accounts at rates over 10%. On a deposit base of half a trillion dollars, that 20% shift from passbook to six-month accounts would cost the S&Ls \$ 5 billion a year—exactly the amount that the industry had made in its best year. The situation was desperate in places like New York and Chicago, where usury laws had kept down the rates that thrifts could charge to borrowers and sophisticated depositors quickly moved their money to the higher-yielding accounts.

The problem got worse at the end of 1979 when the Federal Reserve Board tightened the money supply in an effort to choke off inflationary pressures. Interest rates hit unprecedented highs in 1980–1982 and that brought disastrous consequences for S&Ls. Either they had to pay out much higher interest than they were taking in from mortgages or they had to sell mortgages at a discount to temporarily solve their cash-flow problems.

**Table 2.3** Solvency of S&Ls in the 1980s (assets, income, and reserves in US\$ billions; FDIC 1996)

Year	No. of S&Ls	Total assets (TA)	Net income	Tangible capital (TC)	TC/TA (%)	No. insolvent S&Ls	Assets in insolvent S&Ls	FSLIC reserves
1980	3993	604	0.8	32	5.3	43	0.4	6.5
1981	3751	640	-4.6	25	4.0	112	28.5	6.2
1982	3287	686	-4.1	4	0.5	415	220.0	6.3
1983	3146	814	1.9	4	0.4	515	284.6	6.4
1984	3136	976	1.0	3	0.3	695	360.2	5.6
1985	3246	1068	3.7	8	0.8	705	358.3	4.6
1986	3220	1162	0.1	14	1.2	672	343.1	-6.3
1987	3147	1249	-7.8	9	0.7	672	353.8	-13.7
1988	2949	1349	-13.4	22	1.6	508	297.3	-75.0
1989	2878	1252	-17.6	10	0.8	516	290.8	NA

Mutual savings banks and S&Ls were losing money because of upwardly spiraling interest rates and asset/liability mismatch. Net S&L income, which totaled US\$ 781 million in 1980, fell to negative US\$ 4.6 billion and US\$ 4.1 billion in 1981 and 1982, respectively (see Table 2.3).<sup>33</sup>

According to the FDIC report,

At year-end 1982 there were still 415 S&Ls, with total assets of \$ 220 billion, that were insolvent based on the book value of their tangible net worth. In fact, tangible net worth for the entire S&L industry was virtually zero, having fallen from 5.3% of assets in 1980 to only 0.5% of assets in 1982. The National Commission on Financial Institution Reform, Recovery and Enforcement estimated in 1993 that it would have cost the FSLIC approximately \$ 25 billion to close these insolvent institutions in early 1983. Although this is far less than the ultimate cost of the savings and loan crisis—currently estimated at approximately \$ 160 billion—it was nonetheless about four times the \$ 6.3 billion in reserves held by the FSLIC at year-end 1982.

For a variety of reasons, the FHLBB's examination, supervision, and enforcement practices were traditionally weaker than those of the federal banking agencies. Before the 1980s, savings and loan associations had limited powers and relatively few failures, and the FHLBB was a small agency overseeing an industry that performed a type of public service. Moreover, FHLBB examiners were subject, unlike their counterparts at sister agencies, to stringent [federal government] limits on allowable personnel and compensation. It should be

<sup>33</sup> FDIC (1996).

noted that the S&L examination process and staff were adequate to supervise the traditional S&L operation, but they were not designed to function in the complex new environment of the 1980s in which the industry had a whole new array of powers. Accordingly, when much of the S&L industry faced insolvency in the early 1980s, the FHLBB's examination force was understaffed, poorly trained for the new environment, and limited in its responsibilities and resources. Qualified examiners had been hard to hire and hard to retain (a government-wide hiring freeze in 1980–81 had compounded these problems). The banking agencies generally recruited the highest-quality candidates at all levels because they paid salaries 20 to 30% higher than those the FHLBB could offer.

## 2.5.2 Deregulation and No Regulation

In the late 1970s, deregulation as a generic policy was in the air. The trucking and airline industries had already been deregulated. It seemed obvious that regulations on S&Ls should be relaxed, allowing them to use adjustable-rate mortgages (ARMs) to protect against future rate rises. Other forms of deregulation were also considered. However, as Lowy said,

If [short-term] interest rates remained high, deregulating the asset side of the balance sheet wouldn't save many S&Ls, it was too late for that.

But governments often need to “show” that they are doing something about a problem even if what they do is ineffectual.<sup>34</sup>

In March 1980, Congress passed the Depository Institutions Deregulation and Monetary Control Act of 1980 (DIDC). It called for a gradual phase-out of deposit interest rate regulation over 6 years, allowed S&Ls to operate checking accounts, gave federal S&Ls power to invest in consumer loans and expanded their powers to make various kinds of nonresidential mortgage loans, and declared state usury laws to be null and void. The 1980 Act also increased the deposit insurance ceiling from US\$ 40,000 to US\$ 100,000.

Although deregulated deposit accounts permitted S&Ls to attract deposits, their earnings did not improve due to continued high interest rates. Deregulation may have made theoretical sense in some ways, but it could not prevent S&Ls from losing money in the short run. Some S&L executives contended that interest rate deregulation made the problem worse.

Lowy provided an analysis of S&L balance sheets and concluded

---

<sup>34</sup> As an example: At the height of the OPEC oil embargo in 1973, when the economy was in dire straits, Congress passed two pieces of legislation to combat the shortage of oil: (1) the 55-mph speed limit and (2) extended daylight savings time. Neither policy had any significant effect. But Congress had shown that it could take “action.”

A broke S&L will continue to lose money forever.... The losses will grow in each succeeding year, and the process won't stop even when the S&L runs out of assets. When there are no more assets, the S&L will still have obligations to pay interest to depositors, and those obligations will have to be funded by taking in more deposits and paying old depositors with new depositors' money. Unless the S&L is closed, the losses will, by definition and without fail, grow forever. And this really happened.

In 1981–1982, the savings banks and S&Ls failed because their spreads (between interest earned and interest paid) declined significantly and, in many cases, even became negative. Eventually, these losses caused many institutions to fail.

Lowy asserted that an S&L could not keep losing money forever, were it not for deposit insurance. Without deposit insurance, depositors would withdraw their money when the bank's finances became shaky. With deposit insurance, depositors can keep their funds in a weak bank, so long as it pays a good rate of interest, knowing that the government will bail them out if the bank fails. (This also happened in 2007–2008 when Countrywide Financial was wracked by losses from subprime loans, and in an effort to raise capital, it offered higher certificate of deposit (CD) rates than any other bank. In fact, with shaky banks offering higher interest rates on deposits with FDIC backing, it is advantageous to put one's savings into shaky banks.)

According to the FDIC report, most of the insolvencies of S&Ls in the early 1980s were predictable because of the interest rate mismatch:

What followed, however, was a patchwork of misguided policies that set the stage for massive taxpayer losses to come. In hindsight, the government proved singularly ill prepared to deal with the S&L crisis. The primary problem was the lack of real FSLIC resources available to close insolvent S&Ls. In addition, many government officials believed that the insolvencies were only "on paper,"...and would soon be corrected. This line of reasoning complemented the view that as long as an institution had the cash to continue to operate, it should not be closed.

Former Assistant Secretary of the Treasury Roger Mehle took the position that thrifts did not have a serious problem.

Most political, legislative, and regulatory decisions in the early 1980s were imbued with a spirit of deregulation. The prevailing view was that S&Ls should be granted regulatory forbearance until interest rates returned to normal levels, when thrifts would be able to restructure their portfolios with new asset powers.<sup>35</sup>

---

<sup>35</sup> FDIC (1996).

Perhaps the most far-reaching regulatory change affecting net worth was the liberalization of the accounting rules for supervisory goodwill.

The Bank Board also attempted to attract new capital to the industry, and it did so by liberalizing ownership restrictions for stock-held institutions in April 1982. The elimination of these restrictions, coupled with the relaxed capital requirements and the ability to acquire an institution by contributing *in-kind capital* (stock, land, or other real estate), invited new owners into the industry. With a minimal amount of capital, an S&L could be owned and operated with a high leverage ratio and in that way could generate a high short-term return on capital. Legislative actions in the early 1980s were designed to aid the S&L industry but in fact increased the eventual cost of the crisis.

### 2.5.3 How Mr. Reagan Made a Bad Problem Worse

When the Reagan administration took office on January 20, 1981, Donald Regan's Treasury Department formulated a simplistic set of policies to supposedly deal with the wave of S&L failures that could be clearly seen on the horizon. According to Lowy, the Regan formulation believed:

1. The current problem was interest rates. High interest rates were due to inflation, which the administration is going to cure. Therefore, the problem is temporary.
2. The problem was basically a liquidity problem caused by interest rate regulation. If rates were deregulated, the S&Ls will be able to attract funds. Therefore, rates should be deregulated.
3. There was no money in the budget for bailouts. (Reagan had been adamantly against the bailouts of New York City and Chrysler.) Therefore, if S&Ls need assistance, it must be purely paper assistance that has no budgetary cost.
4. The important thing was to pass real deregulatory legislation to give S&Ls the same powers as commercial banks.

The Reagan administration did not believe that balance sheet insolvency (negative net worth) was significant. As long as an S&L could get enough new deposits to continue in business, the Treasury people believed that it did not need to be closed. However, in such cases, the S&Ls were operating a modified Ponzi scheme because the funds from new deposits were used to pay out account interest; income from mortgages was insufficient. Unwittingly, the Reagan administration propped up Ponzi schemes.

The Reagan administration followed a set of beliefs in almost a religious way; they did not allow reality to interfere with their hypotheses.

In mid-1981, 75 % of S&Ls were sure to lose money. About 50 were insolvent and another 300 were sure to become insolvent in the next year. Over 1000 S&Ls could not meet traditional requirements for net worth as a percentage of assets. Even the healthiest S&Ls would be insolvent in 2 years if interest rates did not turn down. For these reasons, it appeared likely that the FSLIC would have to liquidate several hundred billion dollars (about half) of S&L industry assets, with a net cost to taxpayers of about US\$ 50 billion to US\$ 100 billion. The FSLIC only had assets of US\$ 6 billion, and Mr. Reagan was very chary about spending even that amount.

Lowy described a variety of accounting chimeras that were used in an attempt to stem this tide, at least temporarily. He summarized this by saying,

If you now have the impression that bank and S&L regulation was being contorted in an attempt to deal with the S&L problem without spending money, you are correct.... Even with the fancy footwork, there were too many insolvent institutions for the FSLIC to handle with its limited resources.

Therefore, the Reagan administration decided to change the definition of *net worth* so fewer S&Ls would have to be declared insolvent. Lowy described “these shenanigans” as “a strategy to fool the public.” *One provision (of many) allowed an institution to mark up the value of a property on their books if the property increased in value, but allowed them to keep the original price on their books if the property decreased in value.*

The Garn–St. Germain act of 1982 was enthusiastically endorsed by Mr. Reagan. This act provided for extensive deregulation of S&Ls. Among other things, it provided the following:

- It essentially swept away almost all state rules and regulations governing S&Ls. (The ironic thing is that the politicians behind this legislation were Republican “states rights” advocates who generally opposed federal edicts imposed on the states.)
- It allowed S&Ls to convert from mutual banks to stockholders’ entities.
- It eliminated the statutory loan-to-value (LTV) tests for making home loans and apartment loans (essentially any down payment was now acceptable, including zero or negative).
- It eliminated the requirement that commercial real estate loans be made on the security of first liens.
- It increased the percentage of assets that an institution could invest in commercial mortgage loans from 20 to 40 %.
- It authorized unsecured business loans with up to 10 % of an institution’s assets.

- It increased consumer lending authority from 20% of assets to 30% of assets.
- A regulation requiring an S&L to have 400 stockholders with no one owning more than 25% of the stock was changed in April 1982 to allow a single shareholder to own a thrift.
- Originators of new S&Ls were allowed to start (capitalize) their S&L with land or other noncash assets rather than money. (This provision was a boon to land developers who had extra land lying around that they had not been able to develop or sell.)

S&Ls were permitted to make real estate loans anywhere. They had until now been required to loan on property located in their own market area, with an emphasis on community home building and ownership. But with this new regulation S&Ls were allowed to loan on property too far from home to monitor properly:

During the early years of the Reagan administration, responsibility for the unfolding thrift crisis lay with the Cabinet Council on Economic Affairs, chaired by Treasury Secretary Donald Regan.... Firm believers in *Reaganomics*, this group crafted the policies of deregulation and forbearance and adamantly opposed any governmental cash expenditures to resolve the S&L problem. [The stupidity of the Reagan administration was gargantuan, and compounded by twisting their view of reality to fit their internal philosophies; yet Mr. Reagan is widely regarded as a hero, and the Republican candidates for president in 2008 and 2012 vied with one another in asserting they were the most like Mr. Reagan.] Furthermore, the administration did not want to alarm the public unduly by closing a large number of S&Ls. Therefore, [they used] FSLIC notes and other forms of forbearance that did not have the immediate effect of increasing the federal deficit. The free-market philosophy of the Reagan administration also called for a reduction in the size of the federal government and less public intervention in the private sector. ***As a result, during the first half of the 1980s the federal banking and thrift agencies were encouraged to reduce examination staff, even though these agencies were funded by the institutions they regulated and not by the taxpayers.*** This pressure to downsize particularly affected the FHLBB, whose budget and staff size were closely monitored by OMB and subjected to the congressional appropriations process. The free-market philosophy affected not only regulatory and supervisory matters but also thrift and bank chartering decisions.... The devastating consequences of adding many new institutions to the marketplace, expanding the powers of thrifts, decontrolling interest rates, and increasing deposit insurance coverage, coupled with reducing regulatory standards and scrutiny, were not foreseen.<sup>36</sup>

---

<sup>36</sup> FDIC (1996).



### 2.5.4 The False Spring of 1983

Lowy wrote a chapter in his book with the title “The False Spring of 1983.” He explained the false optimism that prevailed in 1983. Interest rates had come down, and the Reagan tax cuts spurred the economy. Optimism was widespread. A 1983 book on the S&L crisis described it as “resolved.” The S&Ls were essentially unregulated. They could invest as they saw fit with funds borrowed below the market due to the deposit insurance guarantee. There was the appearance that all was well. While the S&L industry had lost US\$ 6 billion in each of years 1981 and 1982, the industry reported a profit of US\$ 2.5 billion in 1983. However, this claim derived from what Lowy described as “funny money accounting.”

Despite the reduction in interest rates, most S&Ls still had an inadequate spread between average mortgage interest and average depositors’ interest, and were losing money from operations.

The only way out seemed to be to rapidly acquire huge volumes of new loans that would dilute the overhang from past loans, and thereby repair the balance sheet.

The figures for the S&L industry in 1983 provided by Lowy are as follows:

1. Bank operations: US\$ 4 billion loss
2. Appreciation of assets (from lower interest rates): US\$ 2.5 billion profit
3. Fees for newly issued loans: US\$ 4 billion profit

Thus, the reported “profit” was US\$ 2.5 billion.

The appreciation of assets was real, although it was a paper gain and added no cash flow. Where the S&L industry made its profit was by issuing a huge volume of new loans in this unregulated atmosphere. The loan fees collected up front were treated as profit; however, there was a good deal of “funny money accounting” involved in this. We will discuss this further below.

The real state of the S&L industry was revealed by Lowy:

- Almost 50 % of S&Ls lost money in 1983.
- Even with the drop in interest rates, the “spread” was inadequate for most S&Ls.
- Use of conservative accounting procedures would have led to a far more pessimistic picture.

The rapid growth of loans led to a good deal of inefficiency, and many of the loans were very risky. The S&Ls were stampeding to acquire loan origination fees, and the safety and security of the loans were often grossly inadequate. Many S&Ls moved out of single-family residence financing to finance com-

plex large developments but they had neither experience nor knowledge to do this effectively.

Lowy emphasized that “construction loans for condominiums, office buildings, shopping centers and hotels require entirely different expertise from single-family lending.” S&L managers were typically inexperienced in construction lending and were lured into faulty projects by the high fees paid up front. Lowy also pointed out: “Although the majority of bad construction loans were committed in 1982, 1983 and 1984, the outside auditors and examiners...usually didn’t learn that the loans couldn’t be repaid until 1985, 1986 or 1987.” With interest rate deregulation, S&Ls had access to unlimited funds because they could pay whatever was required to attract depositors, who did not worry because the FDIC backed their deposits. When they loaned these funds out, they collected significant loan fees that aided their earnings, under new accounting rules. But unfortunately, many of the loans were bad loans. Lowy described these loan fees as a sort of drug on which the S&Ls binged, while they accrued an increasing supply of poorly conceived construction loans on their books.<sup>37</sup>

In the worst cases, the S&Ls put up the entire cost of the project, including the loan fee, which they paid to themselves and called it income. This created the illusion of profitability, and more funds were attracted via deposits. While these risky loans were made, very little, if any, loan loss reserves were put aside. Such processes bordered on the edge of being Ponzi schemes. Lowy’s summary was as follows:

Using the loan fee income, the fast growing S&Ls paid big dividends to stockholders, paid big salaries and bonuses to management, and built up fleets of airplanes and other luxuries. The excessive lending for office buildings, condominiums, and shopping centers led directly to the devaluation of the properties that were being built. Some of the loans involved fraud and some involved dishonest appraisals. But even honest appraisals will be totally wrong if the amount of property built in the marketplace significantly exceeds demand, because without demand, prices will fall precipitously, as they did in Texas, Colorado, and Arizona, wiping out substantially all of the S&Ls in those states. We can’t blame all of this on permissive accounting, but if the accounting had been done right, the problem would have been much smaller. Some of the Texas and California high flyers, such as Vernon and Independent American, added a little fraud to the aggressive accounting by having borrowers pay additional fees to *service corporation* subsidiaries, usually in exchange for fictitious *mortgage banking* or other “services.” This could bring the total fee to 6 or even 10%. Of course the S&L financed these fees as well—and what did the

---

<sup>37</sup> Lowy (1991).

developers care, if they were getting a loan of 110 % or 120 % of cost without recourse? They already had their profit without having invested a penny.<sup>38</sup>

Loan fees were not the only way that S&L income was being inflated. Lowy discussed other accounting legerdemain. He also discussed the high leverage inherent in S&L funding of real estate ventures.

### 2.5.5 The “Go-Go” Period

The S&L industry changed swiftly and dramatically after the deregulation of asset powers and interest rates. The period from 1982 to 1985 was characterized by extremely rapid growth. S&L growth was fueled by an influx of deposits into institutions willing to pay above-market interest rates. In 1983 and 1984, more than US\$ 120 billion in net new money flowed into S&L associations. With money flowing so plentifully, risk takers gravitated toward the S&L industry, altering ownership characteristics. As the FDIC report said,

*Although more than a few of these new owners engaged in highly publicized cases of fraudulent activity, many others were just greedy.*

Sharp entrepreneurs took [advantage of] the large potential profit from owning an S&L, whose charter now allowed a wide range of investment opportunities without the corresponding regulation of commercial banks. Little capital was required to purchase or start an S&L, and the growth potential was great. A variety of non-bankers entered the S&L industry, ranging from dentists, with no experience in owning financial institutions, to real estate developers, who had serious conflicts of interest. To gain entry into the S&L industry, one either acquired control of existing institutions (many of which had converted from mutual to stock) or started *de novo* institutions. Between 1980 and 1986 nearly 500 new S&L charters were issued, with more than 200 of these issued in just two years—1984 and 1985.... Another major change resulting from deregulation was that, beginning in 1982, S&L investment portfolios rapidly shifted away from traditional home mortgage financing and into new activities. This shift was made possible by the influx of deposits and also by sales of existing mortgage loans. By 1986, only 56 % of total assets at savings and loan associations were in mortgage loans, compared with 83 % in 1978.

In some states, direct investments in real estate, equity securities, service corporations, and operating subsidiaries were allowed with virtually no limitations. S&Ls invested in everything from casinos to fast-food franchises, ski resorts, and windmill farms. Other new investments included junk bonds, arbitrage schemes, and derivative instruments. It is important to note, however, that while windmill farms and other exotic investments made for interesting read-

---

<sup>38</sup> Lowy (1991).

ing, high-risk development loans and the resultant mortgages on the same properties were most likely the principal cause for thrift failures after 1982. A large percentage of S&L assets were devoted to acquisition, development, and construction (ADC) loans; these were very attractive because of their favorable accounting treatment and the potential for future profit if the projects were successful. The entry of so many S&Ls into commercial real estate lending helped fuel boom-to-bust real estate cycles in several regions of the country. Interest rates on construction loans are much higher than on other forms of lending; and regulatory accounting practices allowed S&Ls to book loan origination fees as current income, even though these amounts were actually included in the loan to the borrower. For example, a developer might have requested a \$ 1 million loan for two years for a housing development; the institution might have charged four points for the original loan and 12 % annual interest. However, instead of requiring the borrower to pay the interest for two years (\$ 240,000) and the fee (\$ 40,000), the S&L would have included these two items in the original amount of the loan (which would have increased to \$ 1.28 million). . . . There are many notorious examples of how this system was abused by unscrupulous S&L owners reporting high current income on ADC loans while milking the institution of cash in the form of dividends, high salaries, and other benefits. A rapidly growing S&L could hide impending defaults and losses by booking new ADC loans. [It is noteworthy that in such a case, the actual payments by the developer prior to completion of the project were nil. Nevertheless, the S&L claimed the loan origination fee as “income” which it paid to itself out of depositors’ money. This was clearly a form of Ponzi scheme.] The rush into construction lending by S&Ls was such that among the fastest growers, loan fees accounted for substantially all net income in the crucial years 1983 and 1984. Moreover, although the majority of S&Ls were not fraud-ridden, few had the management expertise necessary for dealing with the new lending opportunities, particularly the inherently risky ADC lending. In many cases, prudent underwriting standards were not observed, and the necessary documents and controls were not put in place. Lending on construction projects was appraisal driven and was often based on the overly optimistic assumption that property values would continue to rise. S&Ls sometimes loaned the entire amount up front, including interest, fees, and even payments to developers, but did not check to ensure that projects were being completed as planned. Moreover, S&L ADC loans frequently were non-recourse: the borrower was not required to sign a legally binding personal guarantee.<sup>39</sup>

Another factor in the S&L problem was that more and more, mortgages were packaged into large investment vehicles that isolated homeowners from the institutions holding their mortgages. Lewis<sup>40</sup> pointed out that Congress

---

<sup>39</sup> FDIC (1996).

<sup>40</sup> Lewis (1989).

passed a significant tax break for S&Ls in 1981 that allowed them to sell off bad loans at a discount but amortize that loss over the life of the loans, thus putting a rosy view on their balance sheet that was not justified. The S&Ls were required to invest the proceeds from such “fire sales” in new loans at a higher rate. Thus, S&Ls bought bad loans from one another at discounts, amortized their losses, and reported better balance sheets than they deserved. The sale and purchase of huge numbers of mortgages created a bonanza for investment bankers who packaged these mortgages into investment vehicles, thus establishing the initial foundation for the subprime boom that was to follow 20 years later.

### 2.5.6 Fraud and Misconduct

Pizzo, Fricker, and Muolo (PFM)<sup>41</sup> described the “looting of America’s S&Ls” in 500 well-written pages. We will not attempt to review this enormous record of bad management, deceit, and criminality, but we will merely be content to briefly mention a few examples. The reader is referred to PFM for many more details.

PFM described the evolution of tiny conservative *Centennial Savings and Loan* in a small town (Guerneville, population 1700) in Northern California that began with an investment of US\$ 2 million in 1977 for the purpose of supplying home loans in the hope that Guerneville would start growing like its bigger neighbor, Santa Rosa. However, growth was slow. With the impending prospect of deregulation in sight, Centennial hired a “go-go” man as its president in 1980. He was able to acquire large amounts of money from brokered deposits at above-market interest rates, and proceeded to launch Centennial into the construction business by paying an exorbitant sum for a local construction company, and went on from there. According to PFM, Centennial purchased a stretch limousine in the president’s name, bought 25 luxury cars for management use, leased a twin-engine turboprop airplane, bought and remodeled an office building for itself at a cost of US\$ 7 million, bought a property from the president for ten times what he paid for it, hired a European chef full-time, and paid for lavish trips, furniture, and remodeling of property owned by the president. A Christmas party in 1983 cost US\$ 148,000. The president and the chairman of the board declared US\$ 800,000 bonuses for themselves in 1983—totaling 2/3 of the reported income of Centennial. Meanwhile, Centennial was dealing in land and property. Centennial hired retired regulators with strong connections “to calm the regulators down.” Everything was working fine for a couple of years. Self-dealing was rampant.

---

<sup>41</sup> Pizzo et al. (1989).

But in 1985, regulators finally closed down Centennial as insolvent. At that time, Centennial had swelled to US\$ 404 million in assets (compared to about US\$ 2 million 3 years prior). Eighty percent of the US\$ 435 million in deposits were high-cost brokered CDs (it is normal that this should be less than 20%). Thirty-six percent (US\$ 140 million) of Centennial's loans were tied up in high-risk ventures owned by cronies or subsidiaries of Centennial. It took a couple of years for the federal investigators to sift through the rubble. Finally, 26 charges were filed by the FBI against the former president of Centennial, but he died not long after—some say by suicide. The final bill to the public was US\$ 165 million.

Although there were many other S&Ls that lost more money, the spectacular rags-to-riches rise of Centennial in just 3 years is remarkable.

Perhaps the biggest S&L failure was Lincoln, the acquisition of Charles Keating's American Continental Corporation (ACC). This is a long, involved story that is difficult to summarize.

Charles Keating was a Cincinnati attorney who began his career working for a wheel-a-deal financier named Carl Lindner, who invested in a variety of subsidiaries in his domain. His Phoenix-based home-building subsidiary was having problems, and Keating bought it from Lindner in 1978 and renamed it *American Continental Corporation* (ACC). Keating was a lifelong foe of pornography and it is often quipped that his ethics were very different in the bedroom and the boardroom. He and Lindner were accused of misusing S&L's funds between 1972 and 1976, and he accepted the 1979 judgment without admitting guilt. In the early 1980s, Keating was managing a home-building business in Phoenix. But Keating had much greater ambitions.

He acquired a good deal of cash (US\$ 100 million) by selling junk bonds and stock for his ACC through Drexel as underwriter. With this, he paid US\$ 51 million in cash for Lincoln Savings and Loan based in Irvine, CA. In acquiring Lincoln, Keating "assured regulators in writing that 'no changes are expected in the performance of the institution' regarding home lending." However, as soon as he secured control of Lincoln, he "began using Lincoln's money to invest in stocks, bonds, and high-risk loans on speculative ventures run by ACC subsidiaries." Eventually, Lincoln invested about US\$ 800 million (10% of its portfolio) in junk bonds—mostly bought through Drexel. PFM described the shenanigans at Lincoln:

Keating replaced Lincoln management with American Continental Corp. employees. He made his son (28 years old and without a college degree), chairman of the board and head of Amcor, ACC's key development subsidiary. Charles III was paid about \$ 800,000 a year. Later the younger Keating, testifying at a congressional hearing, admitted that he would sign his name to anything

submitted by his father and two other top executives at ACC. Besides hiring a covey of relatives, Keating also liked to pay large salaries to loyal secretaries, some earning as much as \$ 100,000 a year. Keating also paid himself well. Regulators later said that during the five years that he ran Lincoln—which represented 90 % of his holdings, he and his family collected \$ 41.5 million in salary, benefits, and perks.<sup>42</sup>

Keating's connections included a number of politicians as well as some shady characters (these are not necessarily exclusive). He provided more than US\$ 97 million to John Connally and his partner, former Texas lieutenant governor Ben Barnes.<sup>43</sup> But Keating had another side to his personality. He provided millions of dollars to his favorite charities.

Keating's lifestyle became flamboyant. According to PFM:

At Keating's swank American Continental offices on Camelback Road in Phoenix, banks of computers monitored financial markets worldwide; the company had private jets and a helicopter; Keating had two vacation homes on Cat Cay in the Bahamas; he spent more than \$ 1 million on professional football tickets; and over a five-year period, he and his family and friends used Lincoln Savings' money to spend 263 days traveling by private aircraft in Europe. Keating began work on the \$ 265 million edifice that would become the symbol of his empire, the 130-acre Phoenician Resort at the base of Camelback Mountain in Phoenix. Keating personally oversaw the gold-and-marble construction to make sure his guests—who would have to pay up to \$ 500 a night—would get their money's worth.... The hotel's amenities were legion: a 100-foot water slide, 18 grand pianos including nine Steinways, a pool lined with mother-of-pearl, a 32-person hot tub, acres of pools and golf courses, a nightclub called Charlie-Charlie's, numerous restaurants including one entered through a waterfall, 125 South Sea islanders from Tonga imported as grounds keepers, 1,500 full-grown palm trees trucked in from Florida, and gilded ceilings hand-painted by "an old friend from Europe," according to Keating.

It is instructive to note the excerpts from the diary of Doug Doolittle, a young (and inexperienced) special projects manager of Lincoln over a critical period in Lincoln's history. Only a few short passages are reproduced here:<sup>44</sup>

July 23, 1986—Life is great! It is 1986, Ronald Reagan is coming to the end of one of the most successful presidencies in recent memory, the American economy is booming, the stock market is continually reaching all-time highs.

<sup>42</sup> Pizzo et al. (1989).

<sup>43</sup> Pizzo et al. (1989).

<sup>44</sup> Nisbet, Mary and Donald R. Loster, Lincoln Savings And Loan, AICPA Case Development Program Case No. 96-05, <http://www.aicpa.org/download/edu/96-05a.pdf>.



When ACC acquired Lincoln, Lincoln's main business was in residential mortgage loans. These were safe investments but boring! Mr. Keating changed all that and by using his expertise in real estate development and his contacts from ACC, has shifted Lincoln's main activity to land development projects. He isn't even risking Lincoln's depositors' money since all deposits up to \$ 100,000 are insured by the government. In the last two years, the real estate transactions have provided the main source of Lincoln's profits.

March 26, 1987—I suggested we try to do a deal for one of the Hidden Valley parcels. I've just received an independent appraisal for one parcel of 1,000 acres in Hidden Valley that values it at \$ 8.5 million. Given that the original cost to Lincoln was \$ 2.9 million, we should be able to realize a substantial profit.

March 31, 1987—The Hidden Valley transaction went through today. Wescon bought the 1,000 acre Hidden Valley parcel for \$ 14 million! That is an \$ 11.1 million profit!

April 15, 1987—It seems that Wescon was given an unsecured \$ 3.5 million loan by ECG Holdings at the end of March, just before the Hidden Valley/Wescon transaction went through. The \$ 3.5 million is the down payment Wescon used for the transaction. The remaining purchase price was paid by Wescon, issuing a note to Lincoln of \$ 10.5 million. Wescon will only pay 10% annual interest on the note (Lincoln's brokered CDs are offering 11%) and only annual payments based on a 20-year payment (with a balloon payment due in six years) schedule need to be made, so Wescon really has been given an amazingly good deal. The note is very unusual—I just hope Wescon can make the payments on it.

April 22, 1987—I'm beginning to be concerned about the Hidden Valley/Wescon transaction. I did some checking on Wescon and its net worth is less than \$ 50,000. How is it going to meet its payments on a note of \$ 10.5 million? If Wescon can't meet these payments, I'm not sure we should have taken credit for the profit on the sale of the 1,000 acres in Hidden Valley. If the Wescon notes aren't worth \$ 10.5 million, then we didn't receive \$ 14 million for the parcel, and then surely the profit on the transaction must be less than \$ 11.1 million.

June 2, 1987—Discovered an interesting thing today. Lincoln made a loan commitment of \$ 30 million to ECG Holdings at the end of March and \$ 19.6 million was immediately withdrawn in cash.

April 25, 1988—There were eight transactions involving parcels from Hidden Valley (including the Wescon deal); in total, they contributed \$ 103 million to revenue and \$ 62 million to pretax profit. These deals were all structured like the Wescon transaction with a down payment of 25% from the buyer and notes receivable for the balance. It really helped swing the deals that Lincoln had made substantial loans for other purposes to each buyer—to a total tune of over \$ 200 million.... My only worry is that I've just noticed that the prospectus shows that the market value of ACC's investments is way below their book value.



May 25, 1989—I haven't written in this journal for over a year and, looking back on what I wrote then, I can't believe how naive I was. I really thought Keating was a God and could do no wrong! Lincoln finally was seized by the federal regulators last month although the writing was on the wall long before that. Heck, I even had suspicions two years ago, but because I was so dazzled by Keating, I convinced myself that there wasn't a problem.... How could I have been so gullible and stupid?

The bank examiners were not unaware of some of Keating machinations and excess expenditures, but they were slow to react. Chairman Ed Gray of the Federal Home Loan Bank Board struggled to understand how big a problem he had on his hands.

His examiners in the field were telling him that the situation was bad and getting worse—while industry “experts” were saying that the problems were temporary, and were nothing to worry about. Gray insisted that limits needed to be put on the proportion of direct investments (as opposed to mortgage loans) that S&Ls could make with federally insured deposits. In December 1984, he had proposed limiting direct investments to 10% of assets, and the Federal Home Loan Bank Board approved the new regulation in January 1985. It was set to go into effect in mid-March (retroactive to December 10, 1984). Rogue S&L entrepreneurs were furious, especially at Lincoln Savings and Loan where the main reason for having an S&L was to gain access to its deposits to fuel speculative investments. PFM described Keating's investments in his 1st year at Lincoln that included (among others):

- US\$ 18 million in a Saudi bank
- US\$ 2.7 million in an oil company
- US\$ 5 million in junk bonds
- US\$ 132 million in a takeover bid
- US\$ 19.5 million in a hotel

Keating “completely abandoned the home loan market, turning instead to investment speculation.” (In 1985, Lincoln originated only 11 mortgages, and 4 were for employees.) Keating would later tell a judge: “Home loans were not his thing.”

When Ed Gray wanted to limit direct investment rights, Keating began a bitter personal vendetta against Gray.<sup>45</sup>

---

<sup>45</sup> Pizzo et al. (1989).

Keating hired economist Alan Greenspan as a consultant to Lincoln Savings to fight the battle for more direct investments. PFM described Greenspan's role. Greenspan wrote to Gray "that deregulation was working just as planned." Greenspan named 17 S&Ls including Lincoln that had reported record profits and were supposedly prospering under deregulation. Four years later, 16 of the 17 S&Ls Greenspan had mentioned in his letter were defunct.

"In February 1985 Greenspan again wrote the Federal Home Loan Bank in San Francisco on behalf of Keating, arguing that Lincoln should be exempted from the direct investment limit. A week later he testified before a House subcommittee that direct investments were sound investments for S&Ls."<sup>46</sup>

Despite efforts by Keating, Greenspan, and others, direct investment limits went into effect in March 1985, and many S&Ls did not meet the requirements, including Lincoln.

In 1987, Greenspan was appointed chairman of the Federal Reserve Board, perhaps as a reward for his astute observations regarding direct investments by S&Ls. Continuing his brilliant insights in a long career as head of the Fed, he single-handedly used monetary policy to propel stock market and real estate bubbles that eventually popped. Rarely has such respect been accorded to such an incompetent. Greenspan's mumbling, inarticulate, incoherent commentaries as head of the Fed were widely regarded as being so deep that the average person could not comprehend them, nor could expert economists.

The S&Ls had plenty of money (the depositors' that is) and they were not unwilling to distribute it to politicians. It is therefore not surprising that a number of members of Congress opposed constraints on direct investments.

But the real problem was that Gray did not have adequate staff to investigate and enforce the regulations, and what staff he had were grossly underpaid, and in many cases lacking competence. He went to the Reagan administration with hat in hand to ask for a doubling of his staff and a significant increase in salary. The response according to PFM was as if it were taken right out of *Oliver Twist*: "You want **MORE** examiners?"

Gray was insistent and persistent in his intent to increase the number and pay of examiners. But he was under constant attack by members of Congress, who likely were paid off by S&Ls, or at least had investments in S&Ls. Keating tried to buy Gray off by offering him a job as "president without duties."

In March 1987, after several years of freewheeling spending and bad economic choices, Lincoln Savings and Loan was in deep trouble and about to go under. In order to protect the investors in Lincoln, federal regulators were considering taking over the company. Keating would have none of this, of

<sup>46</sup> Pizzo et al. (1989).

course, and thus he decided to collect on his investments in Washington. In late March 1987, Keating set up a meeting with one of his closest associates in Washington, Senator Dennis DeConcini, the Democratic senior senator from Arizona. Keating requested that DeConcini set up a meeting with the federal regulators, with the purpose of getting them to leave Lincoln Savings and Loan alone. DeConcini was quite willing to follow up on the request, since Keating had donated thousands of dollars to DeConcini's senate campaigns. So DeConcini sought out a number of senators that Keating had donated money to in the past and invited them to a meeting with the regulators on April 2.

Over the next several months, Lincoln Savings and Loan continued its death spiral, eventually falling apart in early 1989. When the final tallies were counted, roughly US\$ 3.2 billion was lost by the corporation, including US\$ 2 billion in depositor's money; the deposits were bailed out by the government through the FSLIC.

Without going through all the sordid details, two trials were held, one in 1991 and one in 1993. In the first trial, Keating was found guilty on 17 of 18 counts of securities fraud; in the second trial, he was found guilty on 73 counts. He spent 50 months in prison and was fined several hundred thousand dollars (which seems to be a drop in his bucket).

Charlie Keating always took care of his friends, especially those in politics. McCain was no exception. In 1982, during McCain's first run for the House, Keating held a fund-raiser for him, collecting more than US\$ 11,000 from 40 employees of American Continental Corp. McCain would spend more than US\$ 550,000 to win the primary and the general election. In 1983, as McCain contemplated his House reelection, Keating hosted a US\$ 1000-a-plate dinner for him, even though McCain had no serious competition. When McCain pushed for the Senate in 1986, Keating was there with more than US\$ 50,000. By 1987, McCain had received about US\$ 112,000 in political contributions from Keating and his associates. While in the House, McCain, along with a majority of representatives, cosponsored a resolution to delay new regulations designed to curb risky investments by thrifts such as Lincoln. In the end, McCain received only a mild rebuke from the Ethics Committee for exercising "poor judgment" for intervening with the federal regulators on behalf of Keating. Still, he felt tarred by the affair—and well he should. But that did not stop him from running for president in 2008.<sup>47</sup>

As Lowy pointed out,

---

<sup>47</sup> Nowicki and Muller (2007).

Reports of fraud and misconduct by S&L owners and officers, more than the amount of money that taxpayers would pay, is what has made the American public angry about the FSLIC bailout. The large sums of money are not comprehensible. But the idea that the S&L managers who portrayed themselves as pillars of society made off with the loot excites people.

Lowy distinguished between different types and degrees of misconduct. He claimed that the amount of fraud and misconduct was exaggerated and “lumped together crimes of varying degrees, regulatory violations, mismanagement, and personal aggrandizement by S&L officers.” Nevertheless, over 2000 criminal referrals were made in S&L failure cases.

Nine categories of “insider misconduct” were identified including payment of exorbitant personal expenses (not necessarily illegal), preferential loans to companies affiliated to insiders (also not necessarily illegal), inaccurate financial reports, and acceptance of false information submitted by borrowers. Lowy pointed out that while this behavior is reprehensible and should be prosecuted, “what kills banks—and what made S&Ls so deeply insolvent—is bad loans.” Bad loans were sometimes made by bad managerial decisions. However, in some cases, bad loans were the end product of either (1) payoffs to insiders, (2) loans to associates of insiders, or (3) loans to fraudulent borrowers whose misrepresentations were not adequately checked by the S&Ls.

Type 1 loans are clearly and obviously illegal, and often were responsible for the greatest S&L losses. Lowy claimed that investigators of the S&L scandal

...tended to lump together Types 1, 2, and 3 fraud and misconduct with a host of other types of insider misconduct, such as keeping inaccurate records, filing incorrect reports, paying themselves too much, and spending too much corporate money entertaining themselves and their customers. These other types of insider misconduct, while they do evidence the kinds of attitudes that lead to laxness and mismanagement—and often accompany Type 1 and Type 2 misconduct—are even more frequently symptoms that there is no real capital at risk for the owners and directors to protect. Expense account liberties and high corporate living, while repugnant to low-paid regulators—and especially repugnant after an institution’s failure—are almost never of a sufficient magnitude to cause insolvency. David Paul’s excesses at CenTrust, including buying an art collection, a yacht, a sailboat, Limoges china, and Baccarat crystal, didn’t lose more than \$ 20 million (after selling them all at auction) against an insolvency of \$ 2 billion—less than 1 % It sounds pretty sensational, but it is not the heart of the problem.

Lowy claimed that another type of misconduct “probably cost more than all the others put together, even though it didn’t cause any failures.” This involved concealing loan defaults with phony transactions and filing false reports.

Finally, Lowy asked,

Why was there so much fraud at Texas S&Ls? Substantially all of the banks there failed, too, yet there have been few allegations of fraud by bankers. Were the bankers better people? Or were there other reasons why fraud was prevalent in the S&Ls and not in the banks?

Lowy's answer to this question seems to be too muted. The real answer seems to be because they were not prevented from doing it.

### 2.5.7 The Aftermath

It is now clear in retrospect that a large portion of the funds eventually paid out by the federal government to bail out failed S&Ls could have been avoided by timely and effective action before the problem escalated out of hand. The Reagan administration simply could not face reality and Congress was no better. (I am reminded of a *New Yorker* cartoon showing a parent changing a flat tire in the rain, explaining to the children in the car that he could not change to another channel because this was really happening.) According to Lowy,

Practically no one in Congress could conceive of tax dollars being used to pay for this problem. They got angry if you suggested this possibility.... Speaker Wright and powerful members of the Banking Committee were saying \$ 5 billion or so was plenty.

In 1987, after auditors said that at least US\$ 50 billion was needed, some congressmen reluctantly proposed to raise the US\$ 5 billion budget to US\$ 15 billion. It was voted down 258–153.

Lowy in reviewing the policy of “keeping zombie S&Ls open” put it very succinctly: “The delay cost a whole lot.”

The FDIC report suggested that it is

...amazing that such a monumental crisis, and one given top priority by the new administration, had been virtually ignored as an issue during the 1988 presidential campaign. This invisibility...was partly due to the continued reluctance to admit that taxpayer dollars would be required, and partly to the fact that members of both political parties were vulnerable to criticism for their role in the crisis.

The FDIC report concluded

It must be concluded that the savings and loan crisis reflected a massive public policy failure. The final cost of resolving failed S&Ls is estimated at just over \$ 160 billion, including \$ 132 billion from federal taxpayers and much of this cost could have been avoided if the government had had the political will to recognize its obligation to depositors in the early 1980s, rather than viewing the situation as an industry bailout. Believing that the marketplace would provide its own discipline, the government used rapid deregulation and forbearance instead of taking steps to protect depositors. The government guarantee of insured deposits nonetheless exposed US taxpayers to the risk of loss—while the profits made possible by deregulation and forbearance would accrue to the owners and managers of the savings and loans.

The person most responsible for the depth and extent of the Savings and Loan Scandal of the 1980s was President Ronald Reagan.

His policy, implemented by Treasury Secretary Regan, was to essentially interpret “deregulation” of banks as no regulation. As a result, the banks were allowed (perhaps even encouraged) to run wild with investment schemes backed by the FSLIC that would have been considered unimaginable in prior years. Reagan’s legacy included the cost to taxpayers of over a hundred of billion dollars to bail out the banks and a large escalation in the federal debt. Reagan’s theories of trickle-down wealth and increased revenues from lowered taxes were phony from the beginning. Reagan was a terrible president. Yet, Reagan is revered by Republicans, and in the 2008 and 2012 Republican primary contests, Republican candidates vied with one another for the right to claim to be the most like Reagan!

The FDIC report derived the following regulatory lessons of the S&L disaster:

- First and foremost is the need for strong and effective supervision of insured depository institutions, particularly if they are given new or expanded powers or are experiencing rapid growth.
- Second, this can be accomplished only if the industry does not have too much influence over its regulators and if the regulators have the ability to hire, train, and retain qualified staff. In this regard, the bank regulatory agencies need to remain politically independent.
- Third, the regulators need adequate financial resources. Although the Federal Home Loan Bank System was too close to the industry it regulated during the early years of the crisis and its policies greatly contributed to the problem, the Bank Board had been given far too few resources to supervise effectively an industry that was allowed vast new powers.

- Fourth, the S&L crisis highlights the importance of promptly closing insolvent, insured financial institutions in order to minimize potential losses to the deposit insurance fund and to ensure a more efficient financial marketplace.
- Finally, resolution of failing financial institutions requires that the deposit insurance fund be strongly capitalized with real reserves, not just federal guarantees.

However, these do not seem to go far enough. What needs to be added is:

As long as the government agrees to bail out the deposits of failed banking institutions, the government has the right and responsibility to supervise these banks, to assure that they follow conservative investment and accounting practices, and that improper or fraudulent policies are quickly recognized and dealt with. Considering the subprime mortgage fiasco of 2007–2008, it is clear that neither the government nor the public has yet learned the lesson from the 1980s; deregulation is still rampant, and still interpreted as no regulation.

## 2.6 The Bull Market of 1982–1995

Maggie Mahar described the bull market of 1982–1999 in a lengthy volume.<sup>48</sup> The years 1966–1982 represented 16 years of poor performance by the stock market. During much of this period, inflation outpaced the return from investment in stocks, and one did better by investing in bank CDs that were paying very high rates with the safety feature of backup from the FSLIC and the FDIC. In 1980–1982, the Dow-Jones average was trading at around seven times earnings. But as Mahar said: “One of the peculiarities of Wall Street is that buyers shun a bargain.” Or put differently, buyers rely more on momentum than on value.

This had been going on for so long that by the early 1980s, younger people had never experienced a real bull market.

Ronald Reagan was elected in 1980. His impact on the economy was significant. Reagan had a belief system that he followed religiously and ignored the “conventional wisdom” as well as reality. Reagan believed (or at least claimed that he did) that by decreasing taxes, particularly for the rich, government revenues would grow because business activity would overwhelm the reduction in tax rate. He also believed that this expanded wealth at the top would “trickle down” to the lower echelons via expanded employment opportunities. In addition, Reagan was vehemently opposed to almost any form of govern-

---

<sup>48</sup> Mahar (2003).

ment regulation of anything, particularly banks, and seemed to desire to reduce the US government to a minimal role in everything except the military, for which he had no limits. Under Reagan, the maximum income tax in the highest bracket was reduced from 70 to 28%, and the capital gains tax rate was reduced from 30 to less than 20% (see Fig. 1.12). And Mr. Reagan flooded the money supply with a seemingly endless supply of cash. Although his policies did not work the way they were supposed to (the federal deficit grew at an unprecedented rate; see Figs. 1.13 and 1.14), his policies did contribute to the beginning of a gigantic boom in the stock market since interest-bearing investments became less attractive as interest rates came down. Although the “conventional wisdom” would have suggested that low taxes, a large federal deficit, and an expanded money supply should have produced rampant inflation, Mr. Reagan had never taken Economics 101 and therefore was not aware that according to basic theory, his approach should not work. Like the nearsighted Magoo crossing a busy street with traffic zooming past him, but never hitting him, Mr. Reagan defied the laws of economics and won—at least to the extent that inflation was not rampant, the economy recovered, and the stock market boomed. We did have the S&L crisis, and deficits soared, but those costs were paid for after Mr. Reagan left office.

Martin Lowy put it very succinctly.<sup>49</sup> In late 1982, the Fed eased its monetary policy and interest rates began to decline. The stock market reacted by initiating the greatest bull market in history. Real estate also responded with a boom of its own, as Lowy described,

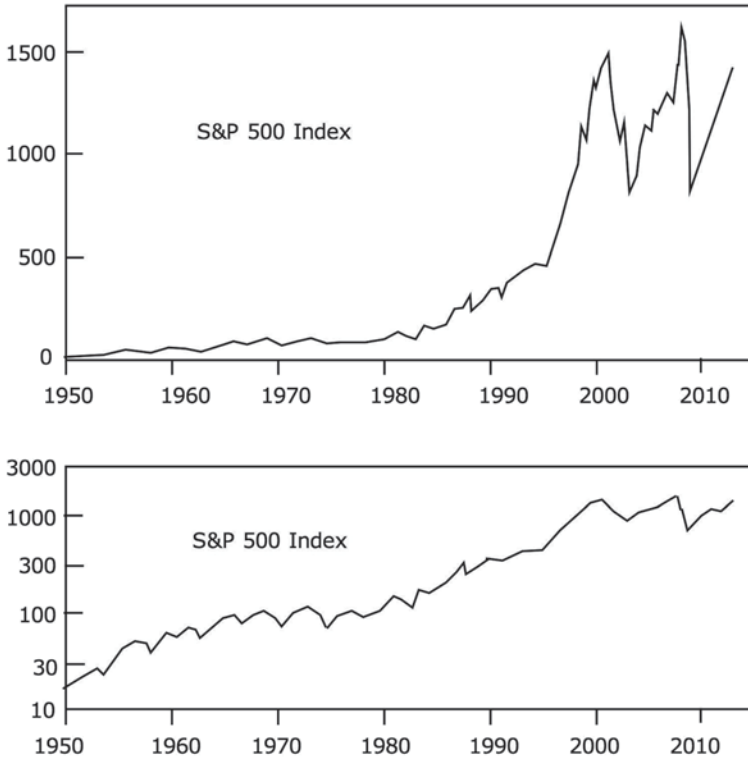
...propelled in part by tax legislation passed in 1981 that permitted investors in real estate to take accelerated depreciation and to deduct interest paid on their personal tax returns.... Real estate ventures multiplied. Pent-up demand after years of high interest rates made fortunes for single-family-home developers. The great god mammon was on the loose, as greed became socially acceptable, investment banking became the most popular professional aspiration for college seniors, and everyone thought that he or she not only could, but would and should be rich. If there ever had been strong morals in American business—which had a spotty record at best—they gave way to the urge to take advantage of the moment.

The stock market took off in August 1982 and began a spectacular 17-year rise to 1999, with a few hiccups along the way (including the crash of 1987—see Sect. 2.7). The S&P 500 Index is shown in Fig. 2.8. Even more spectacular is the *dot.com* era within the 1982–1999 bull market, as will be illustrated in a later section.

---

<sup>49</sup> Lowy (1991).





**Fig. 2.8** The S&P Index from 1950 to 2013. (Data from Wikipedia)

The advent of 401(k)-retirement plans poured billions into the stock market. There was a widespread and pervasive belief that stocks were proven to be the best long-term investment, and there was a concomitant belief that there would quickly be a recovery from any temporary downturn. (Actually, prior to the great bull market of 1982–1999, stocks were not such a good investment, and only the 1982–1999 bull market made stocks look good in retrospect, looking backward from after 1999.) Mergers and acquisitions and stock buyback programs reduced the number of shares available. According to Maggie Mahar, “mergers, takeovers and leveraged buyouts from 1984 through 1987 slashed the supply of stock available on the open market by more than US\$ 250 billion. By 1988, 121 firms in the S&P 500 had vanished.” Big gains were possible from corporate takeovers, and the advent of junk bonds for this purpose expanded the opportunities. The tax code provided a very generous treatment of interest payments on debt. Interest payments on debt were fully deductible. Buying assets with borrowed funds meant shifting much of the cost to the federal government. At about the time that the stock market had built up a strong upward momentum, the advent of the *dot.com* revolution

poured fuel on a raging fire, driving the flames to unprecedented heights. Initial public offerings (IPOs) were greeted with wild enthusiasm. Viewpoints on how and why to value stocks became even more subjective than before, and the few remaining old standards were discarded. All of the above factors undoubtedly played a role in fostering the great bull market of 1982–1999. But the key factors in continuation of the bull for 17 years seem likely to be more psychological than logical, fiscal, or fundamental. The large numbers of “baby boomers” that were approaching middle age without much security for the future demanded wealth, and they were not going to get it from their salaries. Paper profits on assets was their only hope and they pinned their futures on that hope. This generation has been characterized as the “something-for-nothing” generation. They had no sense of “value” and were willing to bid any piece of paper up to astronomical heights. Once that momentum was established, there was no force capable of stopping it, and the one institution that might have put on the brakes, the Federal Reserve, ran scared before the possibility of raining on their picnic.

Maggie Mahar emphasized the importance of the huge expansion in 401(k) plans as a source of funds to drive the stock markets upward, starting in the 1980s, and even more so in the 1990s. As Smith explained,<sup>50</sup>

During the 1990s global pension fund assets grew an average of 15 % per year, from \$ 4.6 trillion to \$ 15.9 trillion. Equity holdings of those funds jumped from \$ 1.6 trillion to \$ 8 trillion, or from 35 % 51 % of total assets. By the end of the decade, the stock holdings of retirement funds made up nearly one-quarter of total global equity market capitalization.

With money flowing freely and taxes down, the advent of very large-scale 401(k) accounts and a widespread belief that stocks were the best long-term investment, the stock market took off in 1982 and reached its ultimate peak in early 2000 with the culmination of the *dot.com* bubble.

The bull market of the 1980s morphed into the *dot.com* mania of the 1990s. The *dot.com* mania is discussed in Sect. 2.8. The end of the *dot.com* bubble occurred in 2000 as the NASDAQ index dropped by about 75 % and many *dot.com* stocks went out of business. This steep decline signaled a termination of the great bull market of 1982–1999. This is described in Sect. 2.8.3. However, the Federal Reserve struggled valiantly to reflate the bubble by dropping interest rates and pouring money into the banks. To some extent, they were successful because the stock markets recovered some of their losses from

---

<sup>50</sup> Smith (2004).

2002 to 2007. But the major effect of Federal Reserve actions was to inflate a new bubble in housing and mortgages. This is described in Sect. 2.11.3.10.

As is usual with booms and bubbles, there were many learned professors and advisors who provided explanations why the incredible rise in stock prices was appropriate and justified by economics. This echoed the support from economists that was prevalent in the late 1920s. The media produced a glut of articles arguing that there was a “New Economy—one in which the old rules of economics no longer applied.” Indeed, they may be right. If prosperity can result from heavy borrowing and bidding up the price of paper assets, as it has, maybe the old rules of economics no longer apply after all. Cassidy<sup>51</sup> quoted Michael Mandel, a Harvard Ph.D. in economics who served as *Business Week’s* economics editor, who wrote articles entitled “The Triumph of the New Economy, The New Business Cycle, and The New Growth Formula” in which he argued that high technology was now the driving force in the US economy, “leading to good times for the foreseeable future.”

During the *dot.com* boom phase of the great bull market, it was widely believed that the advent of microelectronics, the personal computer, email, the Internet, the laser, and other advanced technologies would produce what Greenspan said was “a once or twice in a century phenomenon” that would elevate productivity to new levels. To the consternation of market enthusiasts, initial government estimates of productivity failed to verify the intuitions of market analysts. According to Cassidy, “productivity data by the BLS and Commerce Department in 1996 showed little improvement.” Abby Cohen (a leading figure in Wall Street advocating *dot.com* stocks) said: “I believe that the Government’s productivity figures are wrong.” As Cassidy said: “She claimed that voice mail, word processing, etc. improved productivity by leaps and bounds.” Greenspan also had the same belief. According to Cassidy, “Greenspan believed that American firms and workers were becoming a lot more productive, even if the official statistics were failing to pick this up. American firms and workers were becoming a lot more productive, even if the official statistics were failing to pick this up.” In September 1996, “Greenspan called some Fed economists together and asked them to reexamine the productivity figures.” Cassidy summarized,

The staff economists confirmed what a number of academic studies had already found: the reason that the overall figures were so low was that the service sector, which employs about 2/3 of the workforce, had seen virtually no productivity growth at all in three decades.<sup>52</sup>

---

<sup>51</sup> Cassidy (2002).

<sup>52</sup> Cassidy (2002).

At a meeting convened by Greenspan, Robert Shiller (*Irrational Exuberance*) warned of the bubble in the overvalued stock market. Greenspan was not convinced:

Since the early 1980s, American firms had been spending heavily on computers and other forms of information technology, investments that should have led to higher productivity growth throughout the economy. The failure to find such a link was known to economists as the “productivity paradox.” [It was claimed] that the United States was now finally receiving the payback for the investments it had made in computers, [and the] productivity paradox seems to be over.<sup>53</sup>

Greenspan continued to take the optimistic view with phrases such as “awesome changes” were taking place in “the ways goods and services are produced and, especially, in the way they are distributed to final users.” It does appear that there have been significant advances in productivity, but stock prices have outrun these advances by a wide margin. The increase in paperwork has had a counterbalancing effect on the increase in efficiency. For example, the typical medical office has at least as many aides and paper shufflers as it does medical professionals. Government policies require a huge amount of paperwork from all business establishments. All of that work is considered to be part of the gross national product. If one person produces a product, and another has to supervise him and file reports, and a third has to keep track of his time and fill out accounting forms, one must wonder why the reports and accounts are included in “productivity.” Data on annual productivity change in the nonfarm business sector from 1947 to 2013 are given below:<sup>54</sup>

Time period	Average annual percent change
1947–1973	2.8
1973–1979	1.2
1979–1990	1.5
1990–2000	2.2
2000–2007	2.6
2007–2013	1.6

The productivity data appear to be skewed by the business cycle.

<sup>53</sup> Cassidy (2002).

<sup>54</sup> U. S. Bureau of Labor Statistics.

Cassidy commented at length on the role of Mr. Greenspan and the Fed in the *dot.com* bubble. (See Sect. 2.8.2.) According to Cassidy, the previous Fed chairmen would have been alarmed at the effervescent stock price increases in 1997:

...but Greenspan didn't seem concerned. Since his "irrational exuberance" speech the previous December, he had hardly mentioned the stock market publicly. Privately, he still regarded the question of whether there was a speculative bubble as an open one. After making the famous speech, Greenspan had ordered the Fed's staff economists to determine whether there was any objective way to tell when arising market had turned into a speculative bubble. After an extensive survey of past speculative episodes, the best economic brains at the Fed concluded that there wasn't any reliable method. Speculative bubbles could only be identified definitively in retrospect.

In Sect. 1.8.2, we discussed the analysis of G. J. Santoni, a senior economist at the Federal Reserve, who could not figure out any way to determine whether a bubble is occurring or not. Apparently, repeated doubling of asset prices does not necessarily qualify as a bubble to the Fed.

As Cassidy pointed out, Greenspan was fearful that any weak attempt to rein in the bubble could just as easily produce a runaway crash in stock prices—for which he would be held responsible. Cassidy also argued that low interest rates were not Greenspan's only contribution to the stock market boom. His frequent references to the benefits of new technology, and his refusal to criticize excessive speculation, also played an important role. In August 1999, Greenspan said stock prices reflected

...judgments of millions of investors, many of whom are highly knowledgeable about the prospects for the specific companies that make up our broad stock price indexes.

There were a handful of doubters during the *dot.com* boom. Maggie Mahar described the commentaries of David Tice who started a short-position fund in 1995, Richard Russell's *Dow Theory Letter*, Marc Faber's *Gloom, Doom and Boom* report, and many reports by Shiller and Campbell leading up to Shiller's book: *Irrational Exuberance*.

## 2.7 The Crash of 1987

Mark Carlson of the Federal Reserve described the market crash:<sup>55</sup>

On October 19, 1987, the stock market, along with the associated futures and options markets, crashed, with the S&P 500 stock market index falling about 20%. The market crash of 1987 is a significant event not just because of the swiftness and severity of the market decline, but also because it showed the weaknesses of the trading systems themselves and how they could be strained and come close to breaking in extreme conditions. The problems in the trading systems interacted with the price declines to make the crisis worse. One notable problem was the difficulty gathering information in the rapidly changing and chaotic environment. The systems in place simply were not capable of processing so many transactions at once. Uncertainty about information likely contributed to a pull back by investors from the market. Another factor was the record margin calls that accompanied the large price changes.... Finally, some have argued that *program trades*, which led to notable volumes of large securities sales contributed to overwhelming the system.

Carlson described events that led up to the crash. In the gigantic bull market from 1982 to 1987, the S&P 500 Index rose from about 120 in 1982 to a peak of over 300 in the late summer of 1987. This increase was roughly the same magnitude as the stock market rise from 1924 to 1929 (Fig. 1.11 illustrates this relationship very clearly). As in the 1920s, takeovers (assisted by favorable tax laws) played an important role in this bull market. The expansion of pension funds also contributed. As this great expansion of the stock market took place, professional investors who managed very large funds developed sophisticated tools to manipulate their investments. These involved *programmed trading* (widely known as *portfolio insurance*) and *index arbitraging*. These are discussed in Sect. 1.17. In programmed trading, the goal was to capitalize on upward movements of stock indices by buying into them and selling into descending markets to avoid greater losses. As Sect. 1.17 shows, this created positive feedback that amplified market movements. Since many of the major investors used similar algorithms, large market investors were moving in “lockstep.” In addition, arbitragers were active in buying and selling when differences developed between current market averages and futures.

In the days leading up to October 19, 1987, the stock market was already weakening substantially. Carlson suggested that this was due to expectations that: (a) tax benefits for takeovers were likely to be eliminated, and (b) increases in the US trade deficit might lead the Fed to raise interest rates. Many

---

<sup>55</sup> Carlson (2007).

analyses of the 1987 market crash abound on the Internet. Few, if any, point out that the markets had already passed from the phase of reasonable valuations of investments to merely buying because it was going up—in short, a bubble.

It is noteworthy that following every market movement, whether great or small, analysts always “explain” why these movements occurred—after the fact. But analysts are utterly incapable of predicting future movements. Thus, they explain everything and predict nothing.

Carlson did not discuss the possibility that the 170% gain of the S&P 500 Index in a mere 5 years might have represented a wild speculative bubble that had to be punctured sooner or later. The simplest explanation is that after the run-up from 1982 to 1987, stocks were going up mainly because they were going up. When they started down, they were going down because they were going down. Any pretense to “investment” had long since been discarded and herd behavior prevailed.

From Wednesday, October 14, to Friday, October 16, the S&P 500 Index dropped from about 310 to about 283, a drop of about 9% in 3 days. Most of this decrease took place on Friday. On Friday, when futures became cheap compared to stocks, index arbitrageurs sold stocks and bought futures. Many institutions with program trading policies had been laggard in executing their programs, and whereas their models indicated they should have sold US\$ 12 billion of stocks, they had only sold about US\$ 4 billion by the close on Friday.<sup>56</sup> Thus, by the time of the opening on Monday morning, there was a substantial amount of pent-up selling pressure. Thus, the market dropped precipitously on Monday morning, and by midday on Monday, October 19th, the S&P 500 Index was down to 255 and it closed the day at 225, a drop of about 20% in 1 day. As Carlson reported,

The record trading volume on October 19 overwhelmed many systems. On the NYSE, for example, trade executions were reported more than an hour late, which reportedly caused confusion among traders. Investors did not know whether limit orders had been executed or whether new limits needed to be set. Selling on Monday was reportedly highly concentrated. The top ten sellers accounted for 50% of non-market-maker volume in the futures market; many of these institutions were providers of portfolio insurance. One large institution started selling large blocks of stock around 10:00 in the morning and sold thirteen installments of just under \$ 100 million each for a total of \$ 1.1 billion during the day.

<sup>56</sup> Danielsson and Shin (2002).

Carlson discussed contributing factors to the precipitous drop in terms of (a) program trading, (b) stock-futures arbitraging, (c) inability of the financial system to provide timely information, leading to great confusion among investors as to the state of the market and their sell orders, leading to herd behavior, and (d) margin calls. He also mentioned that major banks extended credit on October 19, when strictly speaking, margin calls would have normally “sold out” investors’ holdings; otherwise, the debacle could have been worse.

Carlson described the actions of the Federal Reserve System to the market crash:

The Federal Reserve was active in providing highly visible liquidity support in an effort to bolster market functioning. In particular, the Federal Reserve eased short-term credit conditions by conducting more expansive open market operations at earlier-than-usual times, issuing public statements affirming its commitment to providing liquidity, and temporarily liberalizing the rules governing the lending of Treasury securities from its portfolio. The liquidity support was important by itself, but the public nature of the activities likely helped support market confidence. The Federal Reserve also encouraged the commercial banking system to extend liquidity support to other financial market participants. The response of the Federal Reserve was well received and was seen as important in helping financial markets return to more normal functioning.

Carlson also said,

*In an effort to restrain the declines in financial markets* and to prevent any spillovers to the real economy, the Federal Reserve acted to provide liquidity to the financial system and did so in a public manner that was aimed at supporting market confidence. One of the most prominent actions of the Federal Reserve was to issue a statement on Tuesday indicating that it would support market liquidity. This statement was referred to by one market participant as the most calming thing that was said Tuesday, and likely contributed to the rebound that morning. (*emphasis added*)

Here is a clear admission by the Fed that it acted to “*restrain the declines in financial markets.*”

The S&P 500 Index gradually recovered somewhat and by the close on October 21 reached 255, a gain of about 13% from the close on October 19. That still represented more than doubling of the Index from 5 years earlier.



Donald MacKenzie<sup>57</sup> wrote a lengthy discourse on the crash of 1987. He particularly discussed the putative role of *portfolio insurance* in contributing to the crash. Various techniques are available to prevent major losses due to a downturn in securities prices. Each of these comes at a cost; one is willing to pay a definite small fee to prevent an improbable large loss. One approach is to sell a put option on the security one holds long. For example, suppose one buys 100 shares at 50 and sells a put option (at a cost of US\$ 500) for the right to sell 100 shares at 48. The cost of the long investment is US\$ 5000, and the maximum possible loss is US\$ 700 (US\$ 200 for the stock price and US\$ 500 for the put option) regardless of how low the stock price drops. However, put options are unsuitable for large institutional investors. Another option is the stop-loss order that required that a stock be sold at the market if the stock price dropped to a preassigned level. Thus, in the example above, one could buy the stock at 50 and require that the stock be sold if the stock price touches 45. Portfolio insurance is the use of programmed trading whereby decisions are made to buy or sell securities based on the desire to prevent significant losses in a portfolio of investments. Portfolio insurance was a sophisticated programmed approach to shifting between stocks and cash (or government bonds) as stock prices fluctuated, buying stocks as prices rose, and selling them as the value of the portfolio fell toward its floor. It was, in a sense, the large institutional investor's equivalent of put options. During the 1980s, a growing number of institutional investors began using portfolio insurance, many of them utilizing an algorithm supplied by the same consulting company. This algorithm involved arbitrage between stock holdings and future contracts on the S&P 500 Index. In retrospect, it is clear that portfolio insurance would fail if a dreadful external event caused the market to fall discontinuously. If stock prices 'gapped' downwards for some reason, plunging discontinuously, there would not be sufficient time to adjust the portfolio accordingly. Evidently, if the use of portfolio insurance is widespread, a positive feedback effect might amplify price movements.

According to MacKenzie, in the 1980s,

The demons of the 1970s—"rampant inflation, oil shocks, trade union power—seemed to be receding, banished by liberalized markets, monetarism, Reaganism and the new breed of aggressive financial management, exemplified by the audacious junk bond acquisitions by asset stripping corporate raiders.

---

<sup>57</sup> MacKenzie (2004).

However, MacKenzie provided a sobering counter:

By the autumn of 1987, however, doubts were growing as to whether the apparent successes of “Reaganomics” were sustainable. The US trade deficit had ballooned, as had its public debt, the dollar was under pressure, and there were fears that interest rates would have to rise. On Wednesday October 14 disappointing US trade figures, and moves by the Ways and Means Committee of the House of Representatives to remove tax advantages that had contributed to the mergers and acquisitions boom led to what was then the largest ever number of points lost in a single day by the Dow Jones average.

This was a prelude to the cataclysmic drop of Monday, October 19, 1987. MacKenzie described some the activity of that day as follows:

As alarming as the size of the crash were the breakdowns in markets that accompanied it. For prolonged periods on October 19 and October 20 the stocks of great US corporations such as IBM and General Motors—normally the most readily traded of all private securities—simply did not trade at all, as the New York Stock Exchange’s specialists could not match buyers with sellers. Those who tried to sell via telephones often found they could not get through. Some brokers simply left their telephones to ring unanswered; others tried to respond but could not cope with the volume of calls.

The trading disruptions in New York broke the link that arbitrage established between the stock and futures markets. If significant component stocks in the index were not trading, however, the calculated index value rapidly became stale; its relationship to market conditions became indeterminate. The breakdown in arbitrage permitted futures prices to plunge far below the theoretical values implied by the apparent level of the index.... The arbitrage that the discrepancy should have evoked was to buy futures and short sell the underlying stocks.... It was quite unclear [however] whether that arbitrage could successfully be completed.

In attempting to explain the crash, MacKenzie provided a lengthy analysis. A fundamental question was the degree to which portfolio insurance contributed to the crash of October 19. While many commentators have leapt to the immediate conclusion that portfolio insurance was a major factor in the crash, MacKenzie concluded that it was “immensely difficult to answer this conclusively.”

As MacKenzie pointed out, on the one hand, portfolio insurers plus stop-loss orders accounted for a significant portion of stock and futures sales on October 19. On the other hand, only just over 1% of the US market’s total capitalization was transacted during the crash, but that small percentage change in ownership was associated with a price decline of more than 20%.

MacKenzie also showed that there were widespread expectations for a market fall, since the price rise from 1982 to 1987 was reminiscent of 1924–1929, and there may have been an element of “self-fulfilling prophecy” involved (see Fig. 1.12). In that connection, MacKenzie suggested that “it may be the rebound in the afternoon of October 20 and on October 21 that is more challenging to explain than the price declines on October 19, for which reasonably plausible explanations...can be found.” He then made a very perceptive comment:

*Sharp declines, not sharp rises, are regarded as undesirable and are thus in need of explanation.*

The point is that when the stock market nearly tripled in 5 years, no explanation, justification, or explication was required. However, when it dropped a mere 20%, all sorts of alarms were raised. The established viewpoint in the latter part of the twentieth century was that it was right and natural for asset prices to rise enormously, and when they dropped, it must have been due to some sinister element that had to be investigated.

Overall, in this 70-page report, MacKenzie showed that the details of the 1987 crash are immensely complex and it is difficult to draw firm conclusions. MacKenzie did not seem to comment on the point that after the steep run-up in stock prices from 1982 to 1987, the transition had already passed from investing to mania, and much of the stock market activity was focused on buying stocks on upward momentum. Indeed, the very essence of portfolio insurance is *momentum buying* when stocks go up, whereas *investment based on value* would buy stocks when they went down in the expectation that in the future the stock price of a good company would right itself. As the song goes, “A kiss is just a kiss...the fundamental things don’t change.” Bubbles are created by speculators, buying on momentum to sell to the next speculator. They eventually become vulnerable to puncture.

One of the remarkable things about the Crash of 1987 is not the crash itself, so much as the recovery from the crash. This was aided and abetted by the Federal Reserve, which pumped money into the banking system. As Greenspan said on the day after the crash,

The Federal Reserve System, consistent with its responsibilities as the nation’s central bank, affirms today its readiness to serve as a source of liquidity to support the economic and financial system.

This is Greenspan-speak for asserting that the Fed would do everything it could to prop up asset bubbles.

## 2.8 The Dot.Com Mania

### 2.8.1 Boom and Euphoria

In the early 1990s, there was a wide expansion in the use of personal computers in business and at home. The US computer industry concentrated more on computer software than hardware. Software produced large profits with high markups using minimum investment in facilities:

Computer hardware became a commodity product, i.e. virtually indistinguishable from the product of any other competitor. Commodity products produce very little profits as each competitor constantly undercuts each other's prices. Asian companies, with small manufacturing costs, produced virtually all of the hardware components at this point. Software, however, was protected as intellectual property with patents. Therefore, a product such as Microsoft Windows is a one of a kind product. This creates a strong barrier to entry, a benefit that is highly sought after in business. The stock prices of software companies were marching ahead rapidly.

Many small software companies were started by college students in garages.... Every startup wanted to become "the Next Microsoft." Eventually, several of these start-up companies took the notice of serious venture capitalists, who were looking to finance these operations, take them public and reap massive profits.... The majority of the software companies were started in Silicon Valley, near San Francisco....<sup>58</sup>

John Cassidy<sup>59</sup> described the origin of the Internet. The Internet concept grew out a Defense Department initiative (ARPA Net) originally developed for defense communications and information retrieval. In their presidential campaign, Al Gore and Bill Clinton advocated the "information superhighway." Cassidy said,

Almost immediately, businesses saw the internet as a profit-making opportunity. America Online made the Internet available for the masses. The Yahoo search engine was started in 1994. Amazon became the first online bookstore in 1994. EBay was started in 1995 as an online auction site. As the Internet moved from the hobbyist domain to a commercialized marketplace, online business owners became fantastically wealthy. Many technology companies were now selling stock in initial public offerings (IPO's). Most initial shareholders, including employees, became millionaires overnight. Companies con-

---

<sup>58</sup> Stock Market Crash: A History of Financial Train Wrecks, <http://www.stock-market-crash.net/nasdaq.htm>.

<sup>59</sup> Cassidy (2002).

tinued to pay their employees in stock options, which profited greatly if the stock went up even slightly. By the late 1990's, even secretaries had option portfolios valued in the millions!<sup>60</sup>

Cassidy described the events leading up to Netscape going public in 1995. The initial prospectus called for 3.5 million shares at about US\$ 13 for a valuation of about US\$ 450 million. Finally, five million shares were issued at US\$ 28 for a valuation of over a billion dollars. The stock rose as high as US\$ 74 on the first day of trading, and closed at US\$ 58, valuing the stock at almost US\$ 3 billion. Between 1992 and 1996, the market valuation of AOL stock rose from US\$ 70 million to US\$ 6.5 billion. Many economists claimed that we were in a *new economy*, where inflation was virtually nonexistent and stock market crashes were obsolete. It was claimed that earnings were no longer relevant in valuing stocks. New buzzwords like *paradigm shift* were prevalent. From 1996 to 2000, the NASDAQ Index increased from 600 to 5000. Dot.com companies run by young entrepreneurs went public raising hundreds of millions of dollars in IPOs. Most of these companies had no earnings and uncertain prospects. As Maggie Mahar said,<sup>61</sup>

It didn't matter if the company was any good; if you downgraded it, you were almost certain to be wrong. And on Wall Street, the reality was that picking a good stock was far more important than picking a good company.

During the 1990s, Americans were pouring money into the stock markets, but predominantly into the *dot.coms*. The great expansion in 401(k) retirement plans, and the overwhelming preponderance of investment of those funds into stocks, was an important factor. In a year and a half starting in 1995, the Dow-Jones average climbed 45% and the NASDAQ rose 65%. By the summer of 1996, there were 800,000 online stock trading accounts in the USA.

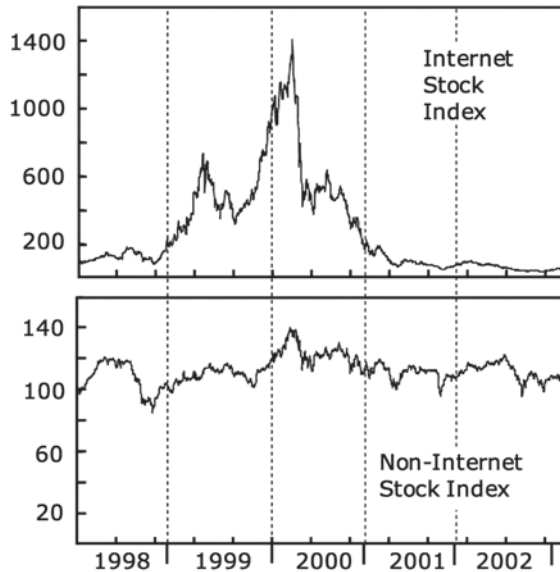
While this was happening, a few bears cautioned against the excesses of the bubble that was forming. Cassidy cited the views of two high-level managers at Morgan-Stanley who said: "I believe that US stocks are overheated, overvalued, vulnerable to a cyclical bear market." The Morgan-Stanley bears went on to say,

You've got stocks selling at absolutely unbelievable multiples of earnings and revenues.... You've got companies going public that don't even have earnings. You've got people setting up Internet pages to reinforce other's convictions

---

<sup>60</sup> Stock Market Crash: A History of Financial Train Wrecks, loc cit.

<sup>61</sup> Mahar (2003).



**Fig. 2.9** Internet stock index during dot.com boom. (By permission from Sornette and Woodward 2009)

in these highly speculative stocks. This is wild stuff out of the past. In every market where it has happened—from the US to Japan to Malaysia to Hong Kong—it always ends in the same way.<sup>62</sup>

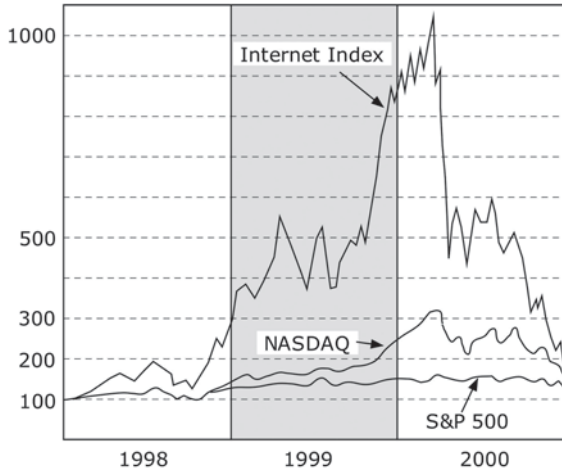
They were right in principle, but wrong in practice. The markets still had a long way to go up before they came down. However, “sensible people” always seem to grossly underestimate the expansiveness of bubbles and are usually several years and several thousand index-points early in their predictions of collapse. The extent of human greed during the euphoric phase is difficult to fathom for those that do not get caught up in the maelstrom.

The rise of the Internet stocks is shown in Figs. 2.9 and 2.10.

### 2.8.2 Greenspan and the Role of the Federal Reserve

Cassidy provided a detailed review of the effects of actions and inactions of the Fed on the *dot.com* bubble, and specifically the persona of Alan Greenspan, the head of the Fed. As usual, an almost religious belief in the Fed prevailed on Wall Street. The stock markets reacted with incredible sensitivity to each hint of a rate change by the Fed, putting enormous pressure on Greenspan, who sat in the hot seat.

<sup>62</sup> Mahar (2003).



**Fig. 2.10** Market indices during the final phase of the dot.com boom/bust (based on setting indices to 100 at the start of 1998). (Adapted from Cassidy 2002)

According to Cassidy,

Greenspan was far from convinced [in 1996] that a speculative bubble had developed. He was coming to believe that the economy's performance justified higher stock prices. In Greenspan's opinion, many of the old rules of thumb didn't seem to work anymore.

Furthermore, Greenspan was well aware of the blame the Fed took for raising rates in 1929. He had poured money into the economy after the 1987 crash and the economy revived. Raising rates to inhibit the growing bubble seemed risky to his political future. In 1998, Greenspan continued his policy of keeping a lid on interest rates while the Internet stocks soared. Amazon announced plans to add CDs to its site, and the stock went from 40 to 140 in a few weeks. Broadcast.com lost US\$ 6.5 million on revenues of US\$ 6.9 million. The IPO opened at US\$ 18 and closed at US\$ 63 on the first day of trading.

At the end of January 1998, during an appearance on Capitol Hill, a senator asked Greenspan how much of the Internet stock boom was based on sound fundamentals and how much was based on hype. Cassidy quoted Greenspan's replies as follows:

First of all, you wouldn't get "hype" working if there weren't something fundamentally, potentially sound under it.

The size of that potential market is so huge that you have these pie-in-the-sky type of potentials for a lot of different [firms]. Undoubtedly, some of these

small companies whose stock prices are going through the roof will succeed. And they may very well justify even higher prices. The vast majority are almost sure to fail. That's the way the markets tend to work in this regard.

There is something else going on here, though, which is a fascinating thing to watch. It is, for want of a better term, the "lottery principle." What lottery managers have known, for centuries is that you could get somebody to pay for a one-in-a-million shot more than the value of that chance. In other words, people pay more for a claim on a very big pay-off, and that's where the profits from lotteries have always come from. So there is a lottery premium built into the prices of Internet stocks.

But there is a root here for something far more fundamental—the stock market seeking out profitable ventures and directing capital to hopeful projects before the profits materialize. That's good for our system. And that, in, fact, with all of its hype and craziness, is something that at the end of the day, probably is more plus than minus.

However, as Cassidy put it: "The speculative mania was starting to spiral out of control." But Greenspan was concerned about the ongoing financial upheaval in East Asia where most of the countries entered deep recessions in 1998. Greenspan was worried that a rise in US interest rates might lead to severe repercussions in the world economy. Cassidy said,

The Asian crisis had placed Greenspan in an awkward position. After sitting on the fence for a couple of years in the debate about whether there was a speculative bubble, he had now concluded that what was happening on Wall Street did indeed, represent a bubble, at least in part. But he still didn't accept that it was the Fed's duty to burst the bubble, and his concerns about Asia reinforced this reluctance.

At the height of the *dot.com* boom, several Nobel-prize-winning economists heeded and hewed as to whether there was a bubble, and if there was a bubble, how serious it was.

Some of Greenspan's colleagues in the Fed urged greater monetary restraint in 1998. Two members of the Federal Open Market Committee (FOMC) voted to raise interest rates immediately. In the end, the FOMC backed Greenspan's decision not to raise rates by a 10–2 vote, but several members had misgivings.

In his public statements, Greenspan was (as usual) obscure—perhaps purposely, or more likely his thinking was muddled. He argued on the one hand that the markets would likely stabilize of their own accord; on the other hand, "firming actions on the part of the Federal Reserve may be necessary to ensure



a track of expansion that is capable of being sustained.” As Cassidy said: “This was typical Greenspan: hinting at higher interest rates, but hedging his bets.” As we pointed out earlier, President Truman wanted a one-handed economist.

In the late summer of 1998, Wall Street interpreted the ambiguity of Greenspan’s remarks to imply that higher interest rates were finally on the way. Believing in the supreme power of the Fed, the stock markets slumped sharply. The next meeting of the FOMC was scheduled for late August 1998. Cassidy believed that had the FOMC raised interest rates then,

It is conceivable that the Internet stock boom would have come to an end then and there. More likely, several interest rate hikes would have been necessary to burst the bubble. Either way, the next two years would have looked very different.

As it turned out, international events prompted Greenspan to hold off from raising interest rates, and the parade of Internet IPOs continued. The Russian government devalued the ruble and reneged on some of its debts. The Russian devaluation sparked an international financial crisis. As Cassidy described it,

All around the world, financial markets shuddered, stabilized, then shuddered again. On Monday, August 31, 1998 the Dow fell by 513 points—its second-biggest points drop. The NASDAQ dropped 140.43 points—its biggest points fall. Internet stocks were particularly hard hit. Excite and Amazon.com both fell by more than 20% Yahoo! and America Online by about 15 percent.... At the week’s end, Time published a cover showing investors falling off a cliff-shaped stock chart, with the headline: “IS THE BOOM OVER?” With Asia already in a slump, Russia in turmoil,—and Latin America teetering, there were widespread fears of a global depression.

The biggest victims were hedge funds. Cassidy cites George Soros’ Quantum Fund, which lost US\$ 2 billion in a few weeks, and Long-Term Capital Management (LTCM), which lost a similar amount (see Sect. 2.10.6).

After being pressed for months to raise interest rates, Greenspan now found himself being urged to cut them in order to calm the markets. On September 4, 1998, Greenspan hinted at a future rate cut. But financial markets remained in chaos. On September 20, 1998, LTCM indicated that it was facing bankruptcy “and might have to unwind tens of billions of dollars’ worth of investments.” At the end of September 1998, the FOMC reduced the federal funds rate by 0.25%. But Wall Street had hoped for a bigger cut, and the markets remained in turmoil. Internet stocks slumped. By the second week of October, Amazon.com and America Online were both 40% off their highs. In mid-October, in a highly unusual move, Greenspan decided, on his own,

to cut the rate another 0.25%. This time the markets reacted favorably. Without actually saying so explicitly, Greenspan had indicated his determination to prop up the stock markets.

Cassidy pointed out that the financial troubles of billionaires' hedge funds had little to do with ordinary Americans. Although the losses in the US stock market were more widely shared, the market averages were still far above where they had been a few years ago. In easing policy in such circumstances, Greenspan seemed to indicate that his policy was to prevent falling asset markets. Cassidy's assessment was,

*His reversal added to the growing belief that the Fed would always be there to bail out investors if anything went wrong, and this made investors even more willing to take risks.*

Greenspan, however inadvertently, ended up further inflating the Internet bubble. The two interest rate reductions confirmed to many people on Wall Street that in a crisis the Fed chairman could be relied upon to take prompt and dramatic action to protect their interests. Bill Dudley, the chief economist at Goldman Sachs, commented after the second rate cut: "This is a way of telling everyone, the lifeguard is back on duty; you can go back in the pool."

And so, the stock markets took off in even greater euphoria than before. As Figs. 2.9 and 2.10 show, the Internet stock index rose by almost a factor of 10 from October 1998 to early spring of 2000. In 1999, there were 546 IPOs that raised over US\$ 69 billion. The average first-day gains of IPOs in 1999 were 68% compared to 23% in 1998.

As Cassidy pointed out,

Low interest rates weren't Greenspan's only contribution to the stock market boom. His frequent references to the benefits of new technology, and his refusal to criticize excessive speculation, also played an important role. In August 1999, Greenspan said stock prices reflected "Judgments, of millions of investors, many of whom are highly knowledgeable about the prospects for the specific companies that make up our broad stock price indexes." Instead of second-guessing these educated judgments, the Fed ought to stick to monitoring inflation pressures in the economy, he concluded.

Evidently, Greenspan was espousing the *intelligent market* doctrine, but history shows that markets are often ruled by greed and herd behavior, not intelligence. Cassidy argued that it is the Fed's responsibility to restrain such behavior to avoid the boom–bust cycles that existed so often before the Fed was created. Cassidy also pointed out that the Fed had other tools at its disposal such as raising the margin rate, but Greenspan refused to do this.

Cassidy asserted, however, that Greenspan became increasingly worried about the stock market in late 1999. Since his upbeat Congressional testimony in August 1999, the NASDAQ had risen another 1000 points, and speculative trading was rife. Cassidy suggested that, privately, Greenspan “joked that he would like to introduce a law prohibiting day traders from buying a company’s stock unless they could identify the product it produced.” Nevertheless, according to Cassidy, as 1999 waned, it slowly began to dawn on Greenspan that a bubble had formed.

According to Cassidy,

Greenspan had been proceeding on the assumption that the Fed could concentrate on the real economy—inflation, unemployment, and productivity growth—and ignore the ups and downs of the stock market.

The “wealth effect” whereby people who made a good deal of money in the stock market felt wealthier and became free spenders thus created demand which, in turn, heated the economy. Hence, the stock market was not insulated from the economy, but became its principal driver. Industry began to expand capacity to meet the increased demand. However, Greenspan’s belief was that this increase in capacity took time to come on-line, whereas the rise in stock prices and the resultant increase in consumer spending were immediate. Consequently, Greenspan was concerned that as overall demand in the economy rose faster than overall supply, inflationary pressures would build. While demand had been met temporarily by increasing the workforce and increasing imported goods, these buffers were used up and price increases would result next.

Cassidy said,

This was a convoluted argument, which attracted criticism from academic economists...but its internal logic mattered less than its practical consequences. Greenspan had finally come up with an economic rationale for interfering with the stock market. To reduce the risk of inflation, the wealth effect would have to be attenuated. This “does not mean that prices of assets cannot keep rising,” Greenspan explained,<sup>63</sup> “only that they rise no more than income.” With personal income growing at about 6% a year this implied that stock prices could grow by 6% too. In the current environment, such an annual return was piddling. The NASDAQ had just returned almost 90%—in 1999 [and the Internet index was up 300%]. Investors weren’t [necessarily] expecting a repeat performance in 2000, but they were looking for lot more than 6%.

---

<sup>63</sup> In a speech on January 13, 2000, in New York.

If Greenspan was serious about disappointing them, which he seemed to be, it could only mean one thing: higher interest rates were on the way.

On February 2, 2000, the FOMC announced a 0.25% rise in the federal funds rate. Cassidy pointed out that the language used to justify this rate increase was nearly the same as that used previously to justify no increase. Three weeks later, Greenspan appeared before the Senate Banking Committee, where he took a good deal of heat. The problem was that he was protecting against a putative inflation that had not yet shown up. This, in itself, is amazing and seems to defy Economics 101. With all the excess money generated by huge profits in the stock market, why was there no significant inflation? It seems as if wealth could be created out of nothing by simply bidding up the price of paper (actually, stock certificates) and there was no penalty to be paid in rising inflation. Perhaps the answer to this conundrum is that during this period, America was busily transferring almost all its manufacturing capabilities to China and other Asiatic countries, so they could send us cheap goods and thus keep a lid on inflation. Such a scenario would not last forever, but it seemed to apply during the 1998–2000 period.

Senator Gramm was not noted for his intellect or clarity of thought. But he did distinguish himself by getting rich through support of the S&L bubble (see Sect. 2.5).

Greenspan repeated his argument from his January talk about the growing disparity between demand and supply but the senators were not convinced. One senator called the rate rise misguided and said the Fed's decision to raise interest rates was "more of a threat to our economy than inflation will ever be." As the NASDAQ approached 5000, Senator Phil Gramm suggested that equities were "not only not overvalued but may still be undervalued." It appears that the prevailing view in the Senate was that wealth not only could but should be created by bidding up paper assets, and that it was right, natural, and appropriate for stock market indices to double, double again, double again, and keep on doubling until almost every investor was rich. The last thing they wanted in an election year was a stock market crash.

For the moment, technology investors continued to ignore the Fed and Internet stocks plowed higher ground, although "old economy" stocks weakened and the Dow-Jones average slipped.

### 2.8.3 Bursting of the Bubble

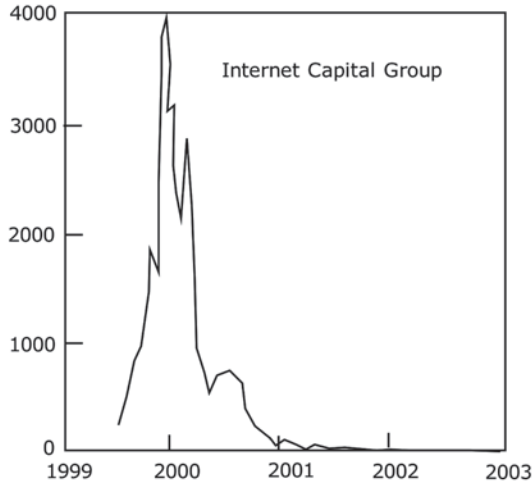
By early March 2000, the stock markets had split. The "old economy" stocks in the Dow-Jones average were down but the NASDAQ, and especially the Internet stocks, were still going strong. Since the start of 2000, more than

80% of the stocks comprising the S&P 500 Index were down 20% or more. But the technology sector was hitting new highs. The NASDAQ reached the astounding figure of 5000 on March 10, 2000.

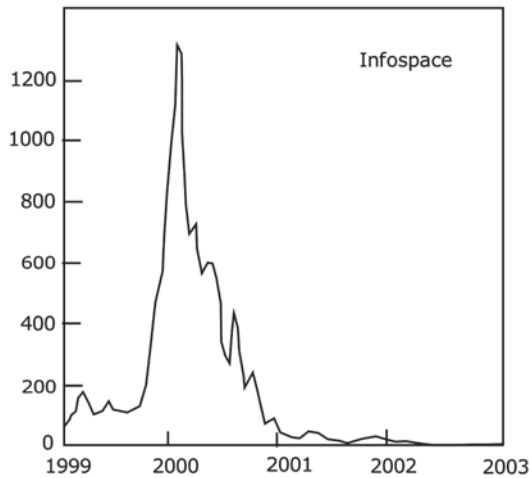
One disturbing aspect was that there was a very large increase in the volatility of the stock markets in 2000, with some very big days, both up and down. The Dow gained 819 points on one of the up days. By early March, there had been 15 days with daily changes of 3% or more in the NASDAQ (9 down and 6 up). Cassidy described trading on March 13 when the NASDAQ was down about 10% during the morning before it recovered in the afternoon.

Many of the fledgling Internet companies were short of cash. Companies raised cash with IPOs at a moderate price, and the great increases in stock price that took place afterward produced profits for investors and speculators, but not the companies themselves. For example, “The Globe” raised US\$ 27 million in its IPO, but subsequent stock price increases raised the market valuation to US\$ 300 million. But that additional US\$ 273 million in capital gains was not available to the company coffers. Since most of these new Internet companies were essentially starting from scratch with almost no initial endowment, their needs for cash were great. Furthermore, many of the originators of these companies were young, inexperienced, and often replete with nonperforming relatives and hangers-on. The “burn rate” at which they were spending money for start-up was alarming. A Barron’s article in mid-March 2000 compared the cash burn rate with cash available for a large number of Internet companies, and the result showed that many of them would run out of cash very soon. While they could theoretically raise more money via another offering of stock, the public did not seem to be in a mood to support such offerings from companies they had previously bought with enthusiasm, that were now floundering. On March 20, 2000, many of the stocks listed in the Barron’s article tanked.

On March 21, 2000, Greenspan and the FOMC raised the federal funds rate by 1/4 point. Despite that, the Internet stocks rallied once more. This was the last gasp of the Internet stocks. Cisco Systems passed Microsoft to become the highest valued corporation at US\$ 555 billion. Following this, several negative commentaries on Internet companies were published—there had always been such reviews—but this time for some reason, people seemed to pay attention. Between March 28, 2000, and April 3, 2000, the Internet stock index dropped 13.5% and now stood 35% below its value on March 10, 2000. Margin calls began to add to the selling exodus. The NASDAQ went through wild gyrations—up and down—in early April, but around April 10, 2000, serious selling resumed. From April 10 to April 13, 2000, the NASDAQ dropped 19% and the Internet index dropped 32%.



**Fig. 2.11** Stock price history of Internet Capital Group. (Adapted from Cassidy 2002; today, you can buy a facsimile stock certificate (suitable for framing) for US\$ 69.95)



**Fig. 2.12** Stock price history of Infospace.com. (Adapted from Cassidy 2002)

The debacle continued through 2000 and 2001. Many Internet stocks collapsed and never recovered. Two stock histories of Internet darlings are shown in Figs. 2.11 and 2.12. There are many similar examples that could be shown. *Yet Mr. Greenspan and top economists were not sure if there was a bubble, or if there was a bubble, how serious it was!*

### 2.8.4 Merrill-Lynch is Bullish on America

Merrill-Lynch had lagged behind other investment firms that had wildly and enthusiastically advocated *dot.com* stocks.<sup>64</sup> Toward the end of the *dot.com* boom, Merrill-Lynch was playing “catch-up” using their “expert” Henry Blodgett as “point man.”<sup>65</sup>

As the *dot.com* craze was reaching a feverish high in 2000, Merrill-Lynch launched the *Internet Strategies Fund*, raising US\$ 1.1 billion in an IPO on March 27, 2000, just before the crash of the *dot.com* bubble. As the markets crashed, so did the Fund:

On October 5, 2001, the Internet Strategies Fund ceased to exist. From the much-hyped beginning in the spring of 2000 to the quiet demise in the fall of 2001, investors accrued losses of 81 % representing nearly \$ 900 million. For the disservice provided to investors, Merrill Lynch collected fees of approximately \$ 45 million.<sup>66</sup>

This led to several lawsuits brought against Merrill-Lynch in 2002. The main complaint alleged that the defendants engaged in a scheme that was intended to use Mr. Blodgett’s strong reputation and bullish ratings on Internet stocks to market the Internet Strategies Fund to unsuspecting investors. Over one billion dollars was invested in the Internet Strategies Fund by investors. The complaint alleged that defendants failed to disclose that: (1) at the same time, Blodgett was recommending Internet stocks he held unpublished negative views regarding those same stocks, (2) considerable conflicts of interest existed within Merrill Lynch which compromised the objectivity of Merrill Lynch Internet analysts, and (3) Blodgett’s favorable ratings on Internet companies were influenced by Merrill Lynch’s desire to generate investment banking fees.

In one filing in 2003, the judge said,

This case is yet another of the class actions following the long boom and eventual bust of the Internet sector of the securities markets. After years of unrestrained speculation in volatile and highly untested common stocks, the Internet bubble burst in the spring of 2000, dragging the prices of common stocks down with it, and generating a wave of litigation.<sup>67</sup>

---

<sup>64</sup> Mahar (2003).

<sup>65</sup> Maggie Mahar shows that Blodgett had severe doubts about the staying power of the *dot.com* craze but his career depended on not voicing these views. In fact, Mr. Blodgett received death threats for every hint that the *dot.com* stocks were overpriced (Mahar 2003, p. xxi).

<sup>66</sup> Swensen (2005).

<sup>67</sup> United States District Court, Southern District of New York, Master File No. 02 MDL 1484, Judge Milton Pollack.

Note that this judge was totally unsympathetic to the plaintiffs. The judge said,

Plaintiffs' Amended Complaint here alleges nothing new, and their Opposition merely attempts to reargue the grounds for this Court's decisions in the Global Technology Fund,.... Absent any change in the applicable law—that is, absent the creation of any SEC regulation or other legal authority that would require a mutual fund to disclose the information Plaintiffs demand—the reasoning in these earlier decisions applies to the claims here.

*Unbelievably—or believably if you are cynical—the judge ruled that Merrill-Lynch had no legal requirement to disclose the fact that they sold a billion dollars worth of securities with which to purchase stocks on which they privately held negative views.*

Apparently, the various lawsuits were combined and they dragged out until 2007 when they were finally settled on February 1, 2007:

Merrill Lynch & Co. won approval Wednesday of a \$ 40.3-million settlement of three lawsuits over claims it provided misleading analyst research about Internet companies. US District Judge John Keenan in New York approved the deal reached after investors appealed the 2003 dismissal of two of the cases. Keenan also awarded \$ 9 million to lawyers who represented almost 400,000 investors who sued. Investors won 6.25% of the \$ 645 million in damages they sought, which Keenan said was “at the higher end” of the percentage of recoveries in class—action securities suits. The lawsuits were brought on behalf of shareholders in three Merrill mutual funds: the Internet Strategies Fund, the Global Technology Fund and the Focus Twenty Fund. The firm issued falsely optimistic research reports, and fund prospectuses failed to disclose investments in companies with which Merrill sought banking business, the investors claimed. Merrill was named in dozens of investor lawsuits in 2002 after the firm issued what the investors said were misleading research reports about Internet companies. US District Judge Milton Pollack, who died in 2004, dismissed many of the actions, saying the individuals who sued were “high-risk speculators” who wanted to “twist the securities laws into a scheme of cost-free speculators’ insurance.” An appeals court upheld most of the dismissals. In February 2006, Merrill paid \$ 164 million to settle 12 cases pending in the trial court and 11 on appeal.<sup>68</sup>

This case is remarkable because it seems evident that Merrill Lynch did not reveal to 400,000 investors their internal beliefs about *dot.com* stocks, spent many millions in legal fees to oppose plaintiffs' claims, and with the aid, sup-

<sup>68</sup> <http://securities.stanford.edu/1024/MER02-01/index.html>.



port, and endorsement of the courts, succeeded in limiting their responsibility to a pittance.

## 2.9 The Debt-Driven Asset Bubble Era of 1982–2013

The era from 1982 to 2013 was a period in which real wages faltered and debt-driven asset bubbles seemingly created wealth. Total household wealth was about 320 % of the gross domestic product (GDP) in 1982 and rose to over 450 % in two asset peaks in 2000 and 2007. We have already mentioned in several places in this book that Sornette and Woodward<sup>69</sup> claimed,

In the same way that the *perpetual motion machine* is an impossible dream violating the fundamental laws of physics, it is impossible for an economy which expands at a real growth rate of 2–3 per cent per year to provide a universal profit of 10–15 per cent per year, as many investors have dreamed of (and obtained on mostly unrealized market gains in the last decade). The overall wealth growth rate has to equate to the growth rate of the economy.

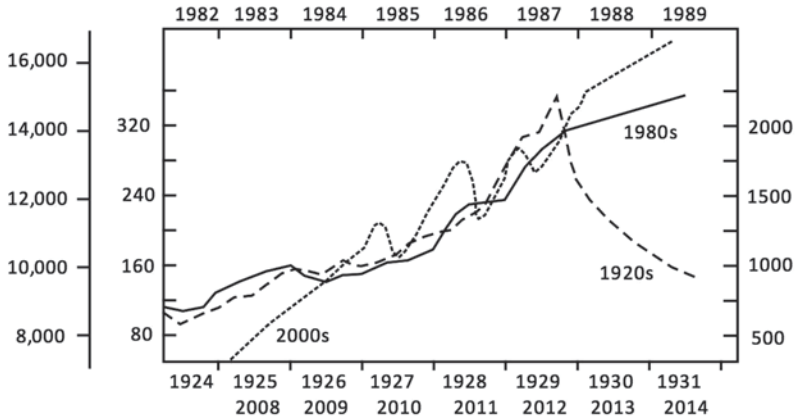
Figure 1.5 compares the time evolution of private consumption in the USA, European Union, and Japan expressed in percentage of the GDP to the total wages. Prior to 1981, wages funded consumption. After 1984, the gap between consumption and wages grew dramatically. This requires that consumption had to be funded by other sources of income than just wages, i.e., financial bubbles. As Sornette and Woodward emphasized, Fig. 1.6

...suggests that this other source of income is nothing but the increasing profits from investments, while the diminishing level of savings only partially covered the increased consumption propensity....

Sornette and Woodward presented the classical economics view. The evidence from 1982 to 2013 shows that it might not be correct. Apparently, wealth can be created out of thin air, simply by bidding up paper assets. Yes, there will be hiccups along the way, but recovery seems to end up at a higher level than the expected long-term trend (see Fig. 1.10). Even Sornette and Woodward pointed out,

The impact of financial profits on the wealth of households is well-illustrated by [Figs. 1.4 and 1.7]. This graph demonstrates the very strong correlation

<sup>69</sup> Sornette and Woodward, <http://www.thic-apfa7.com/en/htm/index.html>.



**Fig. 2.13** Comparison of DJIA in three eras. (By permission from Sornette and Woodward 2009)

between U.S. household wealth and the level of the stock market proxied by the Dow Jones Industrial Average. This supports the concept that financial profits have played a crucial role in the increase of household consumption discussed above. The component of wealth due to real estate appreciation during the housing bubble may have actually played an even bigger role, as it is well documented that the so-called wealth effect of house value is about twice that of the financial markets.

Figure 2.13 demonstrates the repetitive nature of the rise in the DJIA over three eras. Unlike the 1930s, there is no evidence that the gains of the 1980s and 2000s will be lost. There seems to be a permanent gain in wealth from bidding up paper assets.

Yet Sornette and Cauwels<sup>70</sup> pointed out that the trend in Fig. 1.4 from about 1976 to 2012 is in line with 2% annual growth in the GDP, while the vertical excursions of the dot.com bubble and the 2002–2007 bubble ended up retreating to the long-term trend when they collapsed.

## 2.10 Other Bubbles and Swindles of the late 1990s and 2000s

According to K&A, the major impact on the USA in the 1990s was the “revolution in information technology and new and lower-cost forms of communication and control that involved the computer, wireless communication

<sup>70</sup> The Illusion of the Perpetual Money Machine by Didier Sornette and Peter Cauwels, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2191509](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2191509).

and e-mail.” We have already seen in Sect. 2.8 that the *dot.com* bubble was of gigantic proportions and the levels of mass insanity reached in early 2000 far exceeded anything experienced in 1929.

In the first part of this section, we review a few specific instances of bubble mania and swindles from that era in greater detail: Adelphia, rogue traders at banks, and Enron. We also review LTCM, which was not a swindle, but it provides insights into the bubble mentality that prevailed, as well as the attitude of the Federal Reserve toward propping up markets. The Ponzi schemes of Albania provide an example of a rather incredible bubble in our time.

In the second part of this section, we note the widespread collusion that took place in the 1990s between corporations and the major accounting firms in misrepresenting data to enhance stock prices. Here, we provide capsule coverage of a selection of company-accountants conspiracies that were heavily fined for illegal actions. Cheating, misrepresentation, stealing, and fraud have been rampant in American corporations and the major accountancy firms have played a major role in these frauds. In an environment of interpreting “deregulation” as “no regulation” with laxity from all government regulating agencies, such behavior was bound to expand. It is noteworthy that there is a weekly program on TV called “American Greed” that documents frauds based on greed based on actual occurrences. There is sufficient grist for this mill to continue for a long time. If you punch in to Google “American Greed TV Show,” you get ten million responses. If you punch in to Google “American Greed,” you get 25 million responses.<sup>71</sup> This program provides a “dissection of the dark side of the American Dream, a survey of how far some people go to become rich, no matter the cost to themselves and those around them. Real-life cases are reviewed and involve such criminal activity as credit card scams, identity theft, counterfeiting and Ponzi schemes.”

### 2.10.1 Adelphia

Adelphia was a rather average dot.com bubble company that achieved its main notoriety through fraud. Its stock peaked at US\$ 84/share in 1999, and became worthless when it declared bankruptcy in mid-2002. From 1998 through March 2002, Adelphia, the nation’s sixth largest cable-television company, systematically and fraudulently excluded billions of dollars in liabilities from its consolidated financial statements by hiding them on the books of off-balance sheet affiliates. It also inflated earnings to meet Wall Street’s expectations, falsified operations statistics, and concealed blatant self-dealing by the Rigas family that founded and controlled Adelphia.

---

<sup>71</sup> <http://tv.msn.com/tv/series/american-greed/>.

A footnote to an earnings release in 2002 revealed that US\$ 2.3 billion of off-balance-sheet debt had been incurred through co-borrowings by the Rigases. The loans and other related-party transactions became the object of Securities and Exchange Commission (SEC) scrutiny and grand-jury investigations. Later in 2002, a federal grand jury in Manhattan indicted five former Adelphia executives on 24 counts of securities fraud, wire fraud, and bank fraud. Their actions were described by a US attorney as “one of the most elaborate and extensive corporate frauds in history.”<sup>72</sup>

As CFO magazine described it,

It was a shocking end to the ruling family’s hold on an empire that was built over 50 years with the purchase of a tiny cable franchise for \$ 300 and a \$ 40,000 loan.... Rigas never wavered from his extremely centralized management style. It was still being run as if it were a small family business.... The Rigases seemingly ran the company as if it were their own private cash machine. The family has been accused of commingling the accounts of Adelphia with their other businesses, borrowing—and at times allegedly stealing—to pay for lavish homes and other personal expenses, including a private jet and construction of a golf course.

The cases were prosecuted in the courts for several years and in June 2005, John Rigas was sentenced to 15 years in prison, and his son, Timothy Rigas, was sentenced to 20 years.

During the time the Rigas family ruled (and milked) Adelphia, like Keating in the S&L business, they ran a continual antiporn and antismut campaign. Both the Rigas and Keating apparently wanted nothing improper in the bedroom but did not apply the same scruples to the boardroom. It is ironic that the residual Adelphia Company that derived from the outcome of the bankruptcy proceedings became the nation’s only leading cable operator to offer the most explicit category of hard-core porn.

## 2.10.2 Rogue Traders at Banks

At various intervals, rogue traders in comparatively low positions at major banks invest large sums of money in speculative schemes that end up in financial disaster at a large scale. While, technically, these are frauds rather than bubbles, it is the bubble atmosphere in markets that provides the environment for these rogue traders to go undetected until they have lost billions.

---

<sup>72</sup> CFO Magazine, Adelphia Comes Clean, [http://www.cfo.com/article.cfm/3011051/c\\_3046603?f=in\\_sidecfo](http://www.cfo.com/article.cfm/3011051/c_3046603?f=in_sidecfo).

Three highly publicized cases of rogue traders losing billions for banks in illicit speculative trades were:

- Nick Leeson lost US\$ 827 million causing the collapse of *Barings Bank* in England in 1995.
- John Rusnak lost US\$ 691 million in 2001 at *Allied Irish Banks*—Ireland's second-biggest bank.
- Jerome Kerviel lost over US\$ 7 billion at *Societe Generale* in France in 2007.

There seems to be a several-year period between such scandals. In late 2008, it was revealed that Bernard Madoff's hedge fund was actually a Ponzi scheme to the tune of perhaps US\$ 50 billion, dwarfing previous frauds.

A website commented on motivations of these rogue traders and provided data on specific traders that I have used in this section of the book.<sup>73</sup> There is pressure on these traders to perform. Their bonuses are tied to earnings produced by investments. In addition, they get caught up in the “game.” The motivation to amass assets becomes a driving force in the mentality of these institutions. There is a great deal of personal ego involved in securities trading. The website suggests that a testosterone pulse leading to aggressive behavior is “the cocaine-snorted drug of the rogue trader.” Perhaps most important of all, “if things take a turn for the worse, the rogue trader has just a few options to him to get himself out of trouble. Either he admits and comes clean. But, that will...start a chain of events that will no longer be under his control.... The second option is he can use more money and try to right the situation.... But, there is a fifty-fifty chance of losing and winning if he places more money on his losses. At least, that's what he thinks. So, he chooses the second option; instead of calling it quits, he doubles and loses again.”

### 2.10.2.1 Barings Bank

Nick Leeson was a Londoner who worked for Barings in their Singapore office. Leeson and his traders were authorized to transact futures and options orders for clients and arbitrage price differences between Nikkei futures traded on the SIMEX and Japan's Osaka exchange.

These did not seem like risky investments:

However, Leeson took unauthorized speculative positions primarily in futures linked to the Nikkei 225 and Japanese government bonds (JGB) as well as options on the Nikkei. He hid his trading in an unused account, number 88888.

<sup>73</sup> <http://www.zerohedge.com/contributed/2013-07-04/men-broke-banks-rogue-traders>.

Exactly why Leeson was speculating is unclear. He claimed that he originally used the 88888 account to hide some embarrassing losses resulting from mistakes made by his traders. However, Leeson started actively trading in the 88888 account almost as soon as he arrived in Singapore. The sheer volume of his trading suggests a simple desire to speculate. He lost money from the beginning. Increasing his bets only made him lose more money.... On February 23, 1995, he hopped on a plane to Kuala Lumpur leaving behind a \$ 827 million hole in the Barings balance sheet.<sup>74</sup>

What is amazing about Leeson's activities is the fact that he was able to accumulate such staggering losses without Barings' management noticing.... By falsifying accounts and making various misrepresentations, he was able to secure funding from various companies within the Barings organization and from client accounts.... Leeson was an accomplished liar. He falsified records, fabricated letters and made up elaborate stories.

Some of his methods were amazingly primitive. For example, he cut and pasted old letterheads to create bogus confirmation faxes and used them to reassure the London head office that there was money on its way to balance out the losses he had made. Barings management was blissfully unaware of his shenanigans:

Six days after fleeing Singapore, Leeson was arrested [and] returned to Singapore to stand trial. Convicted of fraud, he was sentenced to six and a half years in Singapore's Changi prison.... For good behavior, he was released from prison early in July 1999.

Leeson wrote two books when he got out of his 6-year stint in prison. One of those books was turned into a film, *Rogue Trader*.

### 2.10.2.2 Allied Irish Banks

John Rusnak worked for *Allied Irish Banks* and had a need to recoup money he had lost betting on a rise in the Japanese yen around 1997. As the Asian crisis deepened, his losses mounted. He faked reports to the bank to cover up his losses and obtained more funds with which he hoped to recoup his losses, but they also went south. This was discovered in 2001 and the total loss from the debacle was estimated to be US\$ 691 million. This wiped out more than half of the bank's 2001 earnings and weakened the financial position of the bank. He served 6 years in prison.<sup>75</sup>

<sup>74</sup> Barings Debacle, Risk Glossary, [http://www.riskglossary.com/link/barings\\_debacle.htm](http://www.riskglossary.com/link/barings_debacle.htm).

<sup>75</sup> Sungard Bancware eRisk, <http://www.erisk.com/Learning/CaseStudies/AlliedIrishBanks.asp>.

### 2.10.2.3 Societe Generale

Jerome Kerviel's case is an odd one in some respects. His motivations are mysterious because it appears that he made no personal gain from the unauthorized trades. It is amazing that this 31-year-old trader was dealing with more than US\$ 73.3 billion—a sum that was greater than the bank's market capitalization of US\$ 52.6 billion. How could the bank not have known about this? According to one Internet source,

Kerviel had been betting throughout 2007 that markets would fall—a winning position. But the trader overstepped his authority and wagered much more money than he should have. So at the beginning of January 2008, Kerviel voluntarily created losing positions to neutralize his earlier gains and cover his tracks. But the steep drop in the markets in 2008 expanded these losses far beyond what he expected. Had he maintained his negative stance, he would be even further ahead. The bottom line seems to be a loss of more than \$ 7 billion.<sup>76</sup>

It appears that thousands of trades were carried out by Kerviel, hidden behind false hedge trades. Kerviel got 3 years in prison and was banned from working in finance for life.

### 2.10.2.4 Other Notable Bank Traders

Toshihide Iguchi was a government bond trader in Japan who made 300,000 unauthorized trades between 1983 and 1995 that brought down the Daiwa Bank of Japan and incurred losses of US\$ 1.1 billion. Iguchi wrote three books when he was released from 4 years in prison.

Kweku Adoboli was a trader at the Swiss UBS bank and was found guilty of fraud and false accounting in November 2012. He was sentenced to 7 years in prison. But Adoboli appealed against the sentence, claiming that he worked within bank policy. “He said that his colleagues knew of his hidden account and that his managers were aware of the losses and had pushed him to make sure that he recouped on them (all five of them were fired immediately).”<sup>77</sup> UBS was fined because “its systems and controls were seriously defective.”

<sup>76</sup> <http://wcbstv.com/national/Societe.Generale.fraud.2.638859.html>.

<sup>77</sup> <http://www.zerohedge.com/contributed/2013-07-04/men-broke-banks-rogue-traders>.

### 2.10.3 Orange County

Robert Citron was the treasurer-tax collector of Orange County, CA, for 24 years. He was considered to be a knowledgeable financial expert. Orange County tax proceeds were running short of expenditures. Starting around 1991, he decided to try to make extra money for the County by leveraging the current funds via borrowing, and investing those funds in risky financial derivative contracts that were inversely related to interest rates. As such, he was betting that interest rates would fall. Citron was motivated to increase interest income for the County when allocations from the state were reduced. However, the Fed raised rates in 1994 and Citron's response was to invest more, on the theory that they would soon turn down. Finally, Orange County declared bankruptcy on December 6, 1994.

Facing 14 years in prison, Citron pled guilty to six felony counts. Charges also included filing a false and misleading financial summary to participants purchasing securities in the Orange County Treasury Investment Pool.

While in bankruptcy, every County program budget was cut, about 3000 public employees were discharged, and all services were reduced. Citron was sentenced to 1 year of work release, 5 years of supervised probation, and performed 1000 hours of community service.

The point here is that Citron was not acting for his own personal gain. In many ways, he was a devoted public servant trying to make more money for the County. But he was immersed in a "go-go" investment culture that led him to act in ways that were misguided.

### 2.10.4 Bernie Madoff

Madoff began with humble beginnings and established a viable business in the financial investment business. It is not exactly clear at what point he shifted from a legal business (though of questionable ethics) to an all-out Ponzi scheme. Madoff claims the Ponzi began in the 1990s whereas others claim it dates back to the 1970s. The basic modus operandi of the scheme was as follows:

- a. Rather than offer high returns to all investors, Madoff offered moderate but steady returns to an exclusive clientele, particularly charities, foundations, and wealthy investors of the Jewish faith with whom he had contacts.
- b. Most of the investors had limited need for current income and were content to see their assets gradually rise year after year with reinvestment of earnings each year.



- c. Madoff was a super salesman who convinced many wealthy people and institutions to invest in his scheme, which was described as too complicated to be understood by the public. In the mode of a high-level “snake oil salesman,” his silver tongue seemed to be able to convince almost anyone.
- d. Instead of promising gigantic returns, which usually cause a Ponzi scheme to run out of funds in a year or two, Madoff provided typically steady returns of about 10–12% per year. Since only a portion of these earnings were withdrawn, Madoff had to pay out only about 5% per year. With new sales bringing funds in continually, he could last for decades escaping detection.
- e. Actually, Madoff bought no stocks and made no trades. He produced fake account records that periodically told each client how their investment grew.
- f. He promptly paid out withdrawals, but as stated above, withdrawals were typically only about 5% of his assets.

Approximately 13,500 accounts were affected but a much smaller number provided the dominant portion of these investments. According to the *New York Times*,<sup>78</sup> some of the larger investors included:

- Access International Advisors, US\$ 1.4 billion
- Ascot Partners, US\$ 1.8 billion
- Banco Santander, US\$ 3.1 billion
- Benbassat & Cie., US\$ 935 million
- Fairfield Greenwich Group, US\$ 7.5 billion
- HSBC, US\$ 1 billion
- Kingate Management, US\$ 2.8 billion
- Union Bancaire Privee, US\$ 850 million

J. P. Morgan Chase & Co agreed to pay \$ 2.6 billion to the U.S. government and Bernard Madoff victims to settle allegations that the bank failed to tell authorities about its suspicions of fraud at Madoff's fund.

Even as the bank cut its exposure to Madoff's fund to minimize its losses it what ended up being a \$ 17.3 billion Ponzi scheme, JPMorgan never shared its doubts with U.S. authorities, government prosecutors said.<sup>79</sup>

There were many conflicting estimates of the losses involved in the Madoff Ponzi scheme and the press reported a wide range of numbers, most of which

<sup>78</sup> [http://www.nytimes.com/packages/html/national/200904\\_CREDITCRISIS/madoff\\_clients.html](http://www.nytimes.com/packages/html/national/200904_CREDITCRISIS/madoff_clients.html).

<sup>79</sup> <http://www.reuters.com/article/2014/01/07/us-jpmorgan-madoff-deal-idUSBREA060JL20140107>.

were inaccurate. According to Barry Ritholtz<sup>80</sup> at the time the scandal was revealed, Madoff had received a cumulative sum of about US\$ 20 billion invested since the 1960s. Only part of that sum remained in the firm; the rest was distributed to family members, employees and friends. However, the claim of compounded growth at about 10–12 % per year led investors to believe they had an additional US\$ 45 billion to US\$ 50 billion, bringing the total to about US\$ 65 billion to US\$ 70 billion. The courts ruled that the additional US\$ 45 billion to US\$ 50 billion did not constitute real trades and therefore were not subject to Securities Investor Protection Corporation (SIPIC) insurance. Thus, investors lost the original US\$ 20 billion they invested plus all the earnings they would have accumulated, had Madoff been on the up and up. Madoff was sentenced to 150 years in prison, others were sent to prison, and Madoff's son committed suicide.

### 2.10.5 Enron

Public utilities have the task of providing power, gas, communications, water, and other needs to the public. In the USA, the regulation of energy utilities dates back to the 1930s, when the Public Utility Holding Company Act of 1935 was passed because the utility holding companies were believed to have been major contributors to the 1929 stock market crash. Since the 1930s, the prevailing view was that utilities must be regulated to (1) assure that the public is properly served at reasonable rates, and (2) the utility is entitled to a fair profit. This system worked very well and there never was any need to change it. The utilities had to be run primarily for the benefit of the public they served, but they also had to be allowed to earn a reasonable profit.

However, starting with the Reagan administration (1980–1988) and continuing to the present day, it became fashionable in Washington and university economics departments to believe that deregulation of utility markets, indeed deregulation of just about everything, would make everything more efficient. The Reagan view was based on an almost religious antagonism to any form of government regulation of business. In this system, the utilities are run for the benefit of their stockholders, or worse still in some cases (e.g., Enron) for the benefit of the management—and often to the detriment of the public.

The Enron story is not unlike the S&L story (see Sect. 2.5) in that once deregulation was legislated, shrewd, amoral market manipulators turned what used to be a public service into an illegal program to build their own personal

---

<sup>80</sup> <http://www.ritholtz.com/blog/2010/03/what-were-the-actual-losses-in-madoffs-fraud/>.

wealth. Once again, deregulation has been shown to be detrimental to the public.

Enron was originally a rather humdrum natural gas utility not worthy of any special attention. With the advent of deregulation under the Reagan administration, it acquired additional utilities, changed its name to Enron, and entered a new phase of its endeavors under leadership of newly appointed CEO, Kenneth Lay. Enron owned a large network of natural gas pipelines across the USA. These provided the cash flow that enabled other ventures and investments. They were the only part of Enron that made significant operating profits. In these other ventures, the approach used by Enron was intended to (1) spend great sums of money to influence regional legislators to pass deregulation policies favorable to Enron, (2) buy up control of suppliers of utilities in these regions where deregulation was in force, and (3) use their control of the regional utility supplies to force up prices paid by suppliers to end users (i.e., the public) and thereby make huge profits at the public's expense.

*California Electric Power* The best example of Enron's operations is their cornering of the electricity market in California in the 1990s.<sup>81</sup> California was the first state to deregulate its energy markets. Until then, three investor-owned utilities (IOUs) served the state. The prevailing belief in the California Public Utility Commission was that if California opened up its electricity market to competition, the state's utility bills would drop significantly. This belief had no basis in fact, and was merely a reflection of the current fad.

In June 1994, Enron vice president Jeffrey Skilling (also a snake oil salesman like Madoff) testified to the California State Commission that the state could save US\$ 8.9 billion a year by deregulating. In September 1995, Enron and several other companies submitted their deregulation plan to California policy makers. The California utilities lobbied in favor of this plan, and were so incredibly stupid that they could not foresee that it would bring about their own downfall. In the fall of 1996, the California Legislature essentially was conned into using that plan as the basis for its energy deregulation bill. While the California legislature has a long history of poor judgment, adoption of the power deregulation plan stands out as one of the worst decisions of all time.

Incredibly, the deregulation plan called for the IOUs—primarily Pacific Gas and Electric, Southern California Edison, and San Diego Gas and Electric—to sell off a significant part of their power generation to wholly private, unregulated companies such as AES, Reliant, and Enron. The buyers of those power plants then became the wholesalers from which the IOUs needed to buy the electricity that they formerly produced themselves. While the selling

---

<sup>81</sup> Sharp (2002).

of power plants to private companies was part of “deregulation,” the California legislature naively expected that there would be regulation by the Federal Energy Regulation Commission (FERC) that would prevent market manipulation. The job of the FERC, in theory, is to regulate and enforce Federal law, preventing market manipulation and price manipulation of energy markets. When called upon to regulate the out-of-state privateers that were clearly manipulating the California energy market, the FERC hardly reacted at all and did not take serious action against Enron, Reliant, or any other privateers. The resources of the FERC are in fact quite sparse in comparison to their entrusted task of policing the energy market. In addition, lobbying by private companies clearly slowed down regulation and enforcement.<sup>82</sup>

Sharp’s article<sup>83</sup> provides quotations by some of the architects of California’s deregulation bill in the state legislature:

We didn’t foresee the problems.

Shame on us for not passing a better law.

According to Sharp, one thing that went wrong in California was that the wholesale market was deregulated, but the retail side for consumers was still regulated. As a result, utilities were buying power at very high prices in wholesale markets and selling at low prices to their retail clients.

Another problem was that utilities were forbidden by law to enter into long-term contracts. Instead, they had to buy power on the spot market.

When the spot market became volatile, the utilities had to pay exorbitant prices. A third problem was that energy traders such as Enron cornered the electricity supply market and were withholding supplies, forcing prices to high levels. The wholesale price of electricity had climbed from US\$ 20 per MWH at the start of deregulation to US\$ 250 per MWH in 1999, even though demand had been relatively flat. The state’s utility operator wanted to cap wholesale prices:

But Enron and the other suppliers threatened to take their power elsewhere. By late 1999, wholesale prices exploded to \$ 750 per MWH. California declared that price gouging was widespread and capped prices. This angered the private companies, including Enron chairman Kenneth Lay. He wrote to the FERC, urging it to nullify the price caps. On Nov. 1, 2000, the agency removed the caps. At the height of the state’s power crisis, the price of electricity boomed to \$ 3,000 per MWH. Some household utility bills were \$ 800 a month—more

---

<sup>82</sup> Wikipedia.

<sup>83</sup> Sharp (2002).

than rent. All told, the state's cost rose from \$ 6 billion in 1999 to \$ 27 billion in 2000 and \$ 27 billion in 2001....<sup>84</sup>

As the utilities were finding it more and more difficult to afford to provide electric power to customers in California, rolling blackouts became commonplace. The utilities asked for the right to pass on their higher costs to end users. The Public Utilities Commission was slow to react. The governor of California, Gray Davis, and the legislature waffled and wavered. As blackouts increased and PG&E declared for bankruptcy, the state finally began to act in 2001. The state took over the electrical power business and entered into long-term power contracts that excluded Enron. By late summer of 2001, power costs were down to US\$ 100/MWH.

Ultimately, the cost of the debacle has been estimated to be as high as "\$ 71 billion, reflecting the cost to California consumers in overcharges, bailouts, and other associated costs."

In retrospect, it seems probable that had Enron acted with some restraint, and raised energy prices enough to make a decent profit, but not so high as to bankrupt the utilities and raise the hackles of the public, it might have prospered for a long time in California. But Enron's greed was insatiable and their arrogance was unbounded.<sup>85</sup>

**World Operations** The California electricity market was just one of many schemes that Enron was involved in. Almost all of these schemes involved Enron investing in recently deregulated energy and communications, typically by trading in futures contracts. With no upper limit to prices in these markets, the potential for profits was great. A great deal of press coverage has addressed the financial chicanery, lies, and cover-ups of Enron as if that caused their demise, but in fact, it was their financial failure that led to the misrepresentations and fraud in their reports. The big question is: "If these ventures were so profitable, why then did Enron fail?"

It appears likely that it is not so much that Enron soared and then collapsed, as much as it never succeeded much in the first place and used obfuscation and imaginative accounting to create the false impression of success for a few years.<sup>86</sup> McLean said,

---

<sup>84</sup> Sharp (2002).

<sup>85</sup> The Wikipedia quotes Kenneth Lay as saying: "In the final analysis, it doesn't matter what you crazy people in California do, because I got smart guys who can always figure out how to make money."

<sup>86</sup> McLean (2001).

Start with arrogance. Add greed, deceit, and financial chicanery. What do you get? A company that wasn't what it was cracked up to be.... No one could explain how Enron actually made money.

In retrospect, it appears the Enron was basically a hedge fund trading in energy and communications futures, and was subject to the risks inherent in such operations. Its operating profit was modest and the relationship to cash flow from operations and reported earnings was difficult to perceive. Enron made a number of very bad investments on overseas projects—in India and Brazil, for example. But the truth of their profitability remains difficult to decipher. Many of Enron's claimed assets and profits were inflated, or even wholly fraudulent and nonexistent. Debts and losses were put into entities formed "offshore" that were not included in the firm's financial statements, and other sophisticated and arcane financial transactions between Enron and related companies were used to take unprofitable entities off the company's books. Kenneth Lay seems to have been a great "snake oil salesman" who convinced Wall Street to support his stock with a very high price/earnings ratio based on very little hard evidence.

The following is abstracted from a Public Citizen's Report:<sup>87</sup>

Enron developed mutually beneficial relationships with federal regulators and lawmakers to support policies that significantly curtailed government oversight of their operations. Dr. Wendy Gramm, in her capacity as chairwoman of the Commodity Futures Trading Commission (CFTC), exempted Enron's trading of futures contracts in response to a request for such an action by Enron in 1992. At the time, Enron was a significant source of campaign financing for Wendy Gramm's husband, US Senator Phil Gramm. Six days after she provided Enron the exemption it asked for, Wendy Gramm resigned her position at the CFTC. Five weeks after her resignation, Enron appointed her to its Board of Directors, where she served on the Board's Audit Committee. Her service on the Audit Committee made her responsible for verifying Enron's accounting procedures and other detailed financial information not available to outside analysts or shareholders. Following Wendy Gramm's appointment to Enron's board, the company became a significant source of personal income for the Gramms. Enron paid her between \$ 915,000 and \$ 1.85 million in salary, attendance fees, stock option sales and dividends from 1993 to 2001. The value of Wendy Gramm's Enron stock options swelled...to as much as \$ 500,000 by 2000. Phil Gramm was the second largest recipient in Congress

---

<sup>87</sup> Blind Faith: How Deregulation and Enron's Influence Over Government Looted Billions from Americans – Sen. Gramm, White House Must Be Investigated for Role in Enron's Fraud of Consumers and Shareholders, December 2001, Public Citizen's Critical Mass Energy & Environment Program, <http://www.citizen.org>.

of Enron campaign contributions, receiving \$ 97,350 since 1989.... Enron spent \$ 3.45 million in lobbying expenses in 1999 and 2000 to deregulate the trading of energy futures, among other issues. In December 2000, Phil Gramm helped muscle a bill through Congress without a committee hearing that deregulated energy commodity trading. This act allowed Enron to operate an unregulated power auction that quickly gained control over a significant share of California's electricity and natural gas market. Phil Gramm's legislation was in conflict with the explicit recommendations of the President's Working Group on Financial Markets, which is composed of representatives from the Department of Treasury, the Board of Governors of the Federal Reserve, the Securities and Exchange Commission and the Commodity Futures Trading Commission. The Working group expressly recommended against deregulating energy commodity trading because the traders would be in strong positions to manipulate prices and supply.

Investigations by state and federal officials concluded that power generators and power marketers intentionally withheld electricity, creating artificial shortages in order to increase the cost of power. Enron took advantage of lax oversight following deregulation and formed a complicated web of more than 2,800 subsidiaries—more than 30% (874) of which were located in officially designated offshore tax and bank havens. President Bush's presidential campaign received significant financial support from Enron (\$ 1.14 million).<sup>88</sup> Upon assuming office in 2001, Bush promptly scrapped plans put into place by former President Bill Clinton to significantly limit the effectiveness of these countries as tax and bank regulation havens. This action came at the height of high West Coast energy prices, probably allowing Enron to siphon billions to its offshore accounts. At the same time, the Bush administration and certain members of Congress waged a legislative and public relations campaign against the imposition of federal price controls in the Western electricity market. Such price controls remove the ability of companies exercising significant market share to price-gouge by effectively re-regulating the market. Bush's opposition to price controls unnecessarily extended the California energy crisis and cost the state billions of dollars. When federal regulators finally imposed strict, round-the-clock price controls over the entire Western electricity market on June 19, 2001, companies operating power auctions (like Enron) no longer had the ability to charge excessive prices and no longer had incentive to manipulate supply. While price controls clearly saved California, Enron suffered because it could no longer manipulate the market and price-gouge consumers. With no significant asset ownership to offset its losses, Enron's unregulated power auction quickly accumulated massive debts. At the same time, the curtailed revenue flow made it more difficult for executives and members of the Board to conceal the firm's accounting gimmicks.... Due to Wendy Gramm's position

---

<sup>88</sup> Kenneth Lay was a visitor to the White House where he was a pal of George W. Bush.



on Enron's Audit Committee, she had intimate knowledge of Enron's financial structure and had access to sensitive financial information not available to Wall Street analysts or average shareholders. It is therefore probable that she knew of Enron's possibly fraudulent practices for some time and that her husband would have known as well. Enron's 874 tax haven subsidiaries allowed Enron to funnel billions of dollars to offshore accounts. The Gramms' close involvement with Enron's corporate and legislative activities, the Gramms' possible knowledge and/or connection to criminal misconduct relating to Enron's collapse, and the effects of Enron's layoffs and other economic impacts on Senator Gramm's constituents may have been the leading factor in Gramm's decision on September 4 not to seek re-election to the Senate in 2002.<sup>89</sup> [*It is also possible that by this time, the Gramms had so much money that they decided to quit public "service" and begin spending it.*]

Clearly, deregulation is a policy favored by politicians who usually make profits from connections to companies that engage in deregulated machinations.

### 2.10.6 Long-Term Capital Management

John Meriwether began his career in arbitrage at Salomon Brothers in 1977, running their *Domestic Fixed Income Arbitrage Group*. In 1993, Meriwether decided to begin LTCM with a number of mathematically oriented academics. In addition to his original team from Salomon, Meriwether recruited two reputed financial superstars. He raised US\$ 2.5 billion based on his reputation and connections. He also charged very high management fees and required a 3-year commitment for investments in the fund.

LTCM managed money for about 100 big investors, it had about 200 employees, and it was in business for more than five 5 years. The fund had US\$ 140 billion in assets—all of which except for US\$ 2.5 billion were borrowed. This made it one of the largest investment funds.<sup>90</sup>

In the arbitrage game, the investor sells one security and buys another. If there is a slight advantage to the one that is bought, a profit is made, albeit a small one. However, if one can borrow large sums and leverage one's investment, significant profits can be made. Thus, if one has a leverage ratio

$$\{(\text{amount invested in securities}) / (\text{amount invested by stockholders})\}$$

<sup>89</sup> It is noteworthy that Mr. Gramm surfaced again in July 2008 with his commentary on the financial crisis declaring that we have become "a nation of whiners." The Republican Party hastened to disassociate itself from Mr. Gramm. ("McCain doesn't need enemies. He has friends," *Newsweek*, July 10, 2008).

<sup>90</sup> Lowenstein (2000).



of say, 25 (a typical operating point for LTCM), even a 1% profit on the investments yields a 25% profit for the stockholders. Achieving such a high leverage ratio requires that banks are willing to lend the additional funds. The reputations of Meriwether and his colleagues provided them with the basis to secure these funds.

While LTCM invested in a large number of arbitrage securities, two of their favorite types of investments were (1) arbitrage between government bonds and riskier corporate bonds and (2) arbitrage between currencies from countries paying significantly different interest rates.

Corporate bonds, being riskier, pay a higher interest rate than government bonds. As long as the spread in yields between the two remains stable, going long on corporate bonds and short on government bonds yields a profit. To further increase the leverage, one may invest in corporate “junk bonds” with low rating to increase the yield even more. According to Lowenstein,

The basic idea behind their trades lay in the *Efficient Market Hypothesis*. Over time, markets become more efficient, and the uncertainty associated with riskier assets decreases. Thus spreads between riskier and less risky assets should decrease.

If that were the case, price appreciation of the riskier asset should add to the profit. That is, the price of the riskier investment is initially low because of uncertainty in its future, but as its future becomes clarified, the price will appreciate.<sup>91</sup>

In the case of currency transactions, one of the favorite arbitrage situations in the 1990s was the so-called yen carry trade. Starting in 1995, there was strong economic growth in the USA while Japan was wallowing in the doldrums. Japan lowered its interest rates dramatically to try to stimulate its economy, and its currency weakened. The combination of an appreciating dollar and the large interest rate differential between Japan and the USA created a profitable trading opportunity based on borrowing yen, buying dollar assets, and gaining both on the appreciation of the dollar and the interest rate differential. This “yen carry” trade was widespread among hedge funds, trading desks of investment banks, and even some corporations. Japanese banks also resorted to the yen-carry trade by accumulating foreign assets.

The nature of arbitrage with highly leveraged investments is that profits are unpredictable from month to month, but if the theory is correct, monthly fluctuations should even out and add up to a preponderance of gains, result-

---

<sup>91</sup> Unless this clarification shows the investment to be worse than was initially supposed.

**Table 2.4** Average yearly earnings by LTCM before fees

Year	% Gain
1994	28%
1995	59%
1996	57%
1997	25%
August 1998	-45%

ing in yearly profits. The LTCM fund was immensely successful in its first 4 years of operation as shown in Table 2.4.

However, by 1997, the opportunities for investment in arbitrage had diminished, partly due to external events, and partly due to the entry of more players into the same ball field. Earnings were still good but far less than in previous years. LTCM decided to refund to investors about half of their original investments:

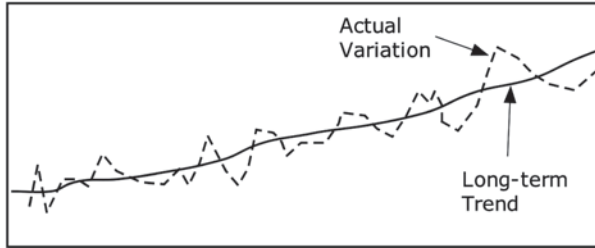
LTCM's very success bred many imitators in the proprietary trading desks of the major investment banks. As more and more players with similar trading strategies crowded into the market, the spreads narrowed on the favored convergence trades, eroding the profit margin for all the players. The relative tranquility of the markets also lulled the players into a false sense of security and spurred them on to increase their leverage, which reduced the spreads further. By the spring of 1998, the convergence funds had to venture into new and uncharted markets in order to find profitable trades. The scene was set for a reversal of some kind.<sup>92</sup>

It was understood that all of these arbitrage operations were subject to risk, and some rather sophisticated mathematical risk-management models were employed. But ultimately, these were based on extrapolations of past relationships into the future using "normal" distributions. A simplistic description follows.

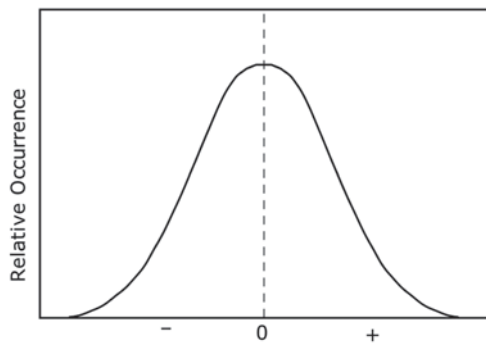
Suppose one has historical data on an economic parameter, as shown in Fig. 2.14. There is an underlying long-term trend, about which random fluctuations occur.

Now, if one plots the differences between the actual values and the long-term trend, one obtains Fig. 2.15. If a so-called normal distribution equation is fitted to these data, it may be concluded that the probability of a deviation from the long-term trend at the far right or far left of this diagram is exponen-

<sup>92</sup> Danielsson and Shin (2002).



**Fig. 2.14** Variation of an economic parameter over time, comparing actual variations with the long-term trend



**Fig. 2.15** Relative occurrence of variations of actual data from the long-term trend

tially small. Hence, the risk of such a large departure from the predicted trend is expected to be extremely small.

According to LTCM models, the probability of a 10% loss in its portfolio was estimated to be an event that would occur once in a thousand (or so) trading periods. The probability of a loss of 50% in its portfolio was thought to be one-in-a-billion.<sup>93</sup> The problem with this argument is that there may be other critical factors, perhaps not obvious, that by luck or by policy were constant during the period covered by Figs. 2.14 and 2.15. If one or more of these factors were to change significantly in the future, a wide departure from this picture of stability could result.

Taleb wrote a detailed book explaining how this occurs in real life.<sup>94</sup> He provided a number of excellent examples of how extrapolation from the past can lead to an incorrect prediction of the future. One example is the growth of bacteria in a closed container with fixed amount of nutrients. Initially, the growth is exponential; however, eventually it maximizes and finally decreases

<sup>93</sup> Kolman (1999).

<sup>94</sup> Taleb (2007).

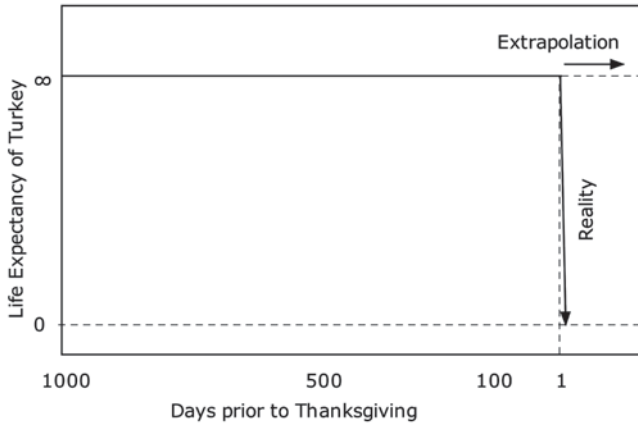


Fig. 2.16 Life expectancy of a turkey (turkey’s point of view)

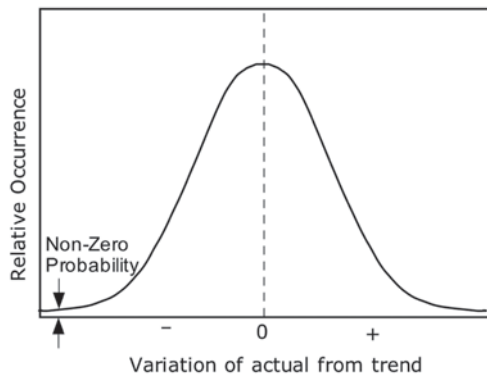


Fig. 2.17 Relative occurrence of variations of actual data from the long-term trend with extended “tails”

sharply as nutrients are used up. Taleb also expounded at length on the example of a Thanksgiving turkey being groomed for Thanksgiving dinner in a few years. For a 1000 days, all is well; the turkey is well fed and well taken care of. As far as the turkey knows, his life expectancy is infinite. Yet, his life is suddenly and unpredictably (from the turkey’s point of view) terminated (see Fig. 2.16).

Taleb showed that Fig. 2.15 does not provide an accurate description of reality in most economic situations, and there are typically long “tails” that permit extremely large deviations with small, but nonnegligible probability. Thus, Fig. 2.15 should be replaced by Fig. 2.17. These improbable cataclysmic events exert major forces on economic trends at various intervals. In Taleb’s earlier book, “Fooled by Randomness,” he emphasized the role of luck in investing. He provided many examples of commodity traders who had runs of

luck making them wealthy in a short time, who believed their luck was skill. When bad luck and unpredictable events subsequently occurred, it wiped them out.

The summer of 1998 was a particularly turbulent episode for the financial markets of the USA and Europe. The following factors contributed to the reversal of fortune for the LTCM:

**Salomon departs the field** The disbanding of the Salomon Brothers bond arbitrage desk on July 6th set in motion an internally reinforcing feedback process (see Sect. 1.17). As long positions were sold, and short positions were bought back, other traders with similar positions were subjected to adverse price shocks. For traders with high leverage, this would trigger margin calls on their losing positions. They would be forced to unwind their trades, thus reinforcing the previous adverse price moves. Danielsson and Shin emphasized that

The unprecedented price moves in the summer of 1998 were not simply the result of extremely bad luck. Given the extensive copycat behavior of other traders and the large implicit leverage involved, it was only a matter of time before the system would be hit by a small outside shock that would send it into reverse. Once the system began to go into reverse, the internal dynamics of the feedback loop would take hold with a vengeance, and send it into a tailspin. The probability of this collapse is far from zero. Under the right conditions, it is a near certainty.<sup>95</sup>

**Russia defaults** On August 17, 1998, Russia announced it was restructuring its bond payments—a de facto default. The losses forced many investment banks, hedge funds, and other institutional investors to reduce their positions en masse. The resultant flight to higher-quality investments boosted prices for Treasury bonds and sunk prices for lower quality bonds in an unprecedented fashion. Credit spreads had never moved so far so fast. LTCM's losses were huge because they were long on bonds and short on treasuries. On August 21 alone, the firm lost US\$ 550 million. In late August, the fund found itself down 44% for the year. The models had judged that kind of loss to be something that occurs once in several billion times the life of the universe.<sup>96</sup> Another point is that Table 2.4 shows that at the end of 1997, the fund had grown by  $1.28 \times 1.59 \times 1.57 \times 1.25 = 400\%$ . A 44% drop in this inflated price wiped out nearly half of the previous 400% gain.

<sup>95</sup> Danielsson and Shin (2007).

<sup>96</sup> Kolman (1999).

**Fall of the dollar against the yen** Danielsson and Shin emphasized that the dollar had been strong against the yen for several years, reaching a high of 147 yen per dollar on August 11, 1998. Many commentators were predicting that the yen/dollar ratio would reach 150 or perhaps 200 by the end of the year. However, in the aftermath of shocks to the international financial systems, the dollar fell to less than 120 yen by October 8, 1998. For those in the “yen carry” trade who were long the dollar and short the yen, the result was disastrous. The effect of stop-loss orders contributed to the acceleration of decline of the dollar.

As losses mounted, LTCM had increasing difficulty meeting margin calls and needed more collateral to meet its obligations. The fund had great difficulty liquidating its positions and was now in very serious difficulty. On September 2, 1998, the partners sent a letter to investors acknowledging the fund’s problems and seeking an injection of new capital to sustain it. That information soon leaked out and the fund’s problems became common knowledge. LTCM’s situation continued to deteriorate in September 1998, and the fund’s management spent the next 3 weeks looking for assistance in an increasingly desperate effort to keep the fund afloat. However, no immediate help was forthcoming, and by September 19, 1998, the fund’s capital was down to only US\$ 600 million, with an asset base of US\$ 80 billion so its leverage ratio was about 130 to 1—an indication of impending doom. It did not appear that LTCM could make it through the next week without outside assistance.<sup>97</sup>

Kevin Dowd’s article dealt at length with the intervention of the Federal Reserve in the failing LTCM and whether such intervention was appropriate and needed:

Wall Street and the Federal Reserve had observed LTCM’s deterioration with mounting concern. Many Wall Street firms had large stakes in LTCM, and there was also widespread concern about the potential impact on financial markets if LTCM were to fail....

The LTCM fund partners persuaded a delegation from the New York Federal Reserve and the US Treasury that LTCM’s situation was “much worse than market participants imagined.” The Fed decided that some form of support operation should be prepared very rapidly to prevent LTCM’s failure and thereby avoid what the Fed claimed they feared might otherwise be “disastrous effects on financial markets.”

---

<sup>97</sup> Dowd (1999).

Accordingly, the New York Federal Reserve began to arrange a consortium of private companies to prepare a rescue package if no one else took over the fund in the meantime. In the interim,

...a group consisting of Warren Buffett's firm, Berkshire Hathaway, along with Goldman Sachs and American International Group, offered to buy out the shareholders for \$ 250 million and put \$ 3.75 billion into the fund as new capital. That offer would have put the fund on a much firmer financial basis and staved off failure. However, the existing shareholders would have lost everything except for the \$ 250 million takeover payment, and the fund's managers would have been fired. The motivation behind this offer was strictly commercial; it had nothing to do with saving world financial markets.<sup>98</sup>

This group apparently felt that it could make a profit out of the corpse of LTCM if they could buy it cheap enough. The management of LTCM rejected this offer, presumably "because they were confident of getting a better deal from the Federal Reserve's consortium." The Fed therefore worked with its consortium to create an alternate rescue package:

...which was promptly accepted by LTCM and immediately made public. Under the terms of the deal, 14 prominent banks and brokerage houses—including UBS, Goldman Sachs, and Merrill Lynch but not the Federal Reserve—agreed to invest \$ 3.65 billion of equity capital in LTCM in exchange for 90% of the firm's equity. Existing shareholders would therefore retain a 10% holding, valued at about \$ 400 million. This offer was clearly better for the existing shareholders than was Buffett's offer. It was also better for the managers of LTCM, who would retain their jobs for the time being and earn management fees they would have lost had Buffett taken over. Control of the fund passed to a new steering committee made up of representatives from the consortium, and the announcement of the rescue ended concerns about LTCM's immediate future. By the end of the year, the fund was making profits again.<sup>99</sup>

Dowd then went on to ask: "Was the Federal Reserve justified?" The House Committee on Banking and Financial Services ran a hearing on the issue. Among those testifying were the president of the New York Federal Reserve, William McDonough, and the chairman of the Federal Reserve Board, Alan Greenspan. Both McDonough and Greenspan defended their solution as

...a private sector solution to a private-sector problem, involving an investment of new equity by Long-Term Capital's creditors and counterparties.

---

<sup>98</sup> Dowd (1999).

<sup>99</sup> Dowd (1999).

While some have claimed that the Federal Reserve had “bailed out” LTCM, they insisted that

No Federal Reserve official pressured anyone, and no promises were made. Not one penny of public money was spent or committed.

Dowd attacked these positions, arguing that there was no need for the US government to be involved at all, and the Buffet team had found a solution without government interference. Dowd has a point here, but from a practical point of view, no harm was done by government action, and the end result seems to have made more sense than the Buffet proposal.

Greenspan also claimed that a failure (bankruptcy without bailout) could have had severe repercussions on markets and

...substantial damage could have been inflicted on many market participants, including some not directly involved with the firm, and could have potentially impaired the economies of many nations, including our own.

Dowd opposed this claim on the ground that a private group made an offer to LTCM that, had the Fed not been waiting in the wings, must have been accepted by LTCM as better than nothing. Thus, the issue was not one of failure of LTCM versus bailout arranged by the Fed; the issue was actually bailout independent of the Fed versus bailout as arranged by the Fed. Dowd admits that the terms of the Buffet team were harsh, but private business is often harsh and in that sense, the Fed should have kept out of it. It is hard to disagree with this viewpoint.

Would the damage to the economy (due to LTCM failing) have been as severe as Greenspan said? Dowd doubted that it would for the following reasons:

- The amount of money in the currency and bond markets was far more than that controlled by LTCM. In the words of Dowd: “The markets might have sneezed, and perhaps even caught a cold, but they would hardly have caught pneumonia.”
- There would undoubtedly be a buyer for LTCM at some price. It never was going to go under.
- Even if LTCM did go into bankruptcy, it would only affect derivatives markets, and there is no evidence that it would have caused a global liquidity crisis.
- Even after a major shock, history shows that trading resumes not long thereafter.



- Most firms in the LTCM types of markets have a variety of protection mechanisms that would have reduced their exposure below what they might otherwise appear to be.

Dowd believed that

The Federal Reserve's nightmare scenario—a mass unwinding of positions with widespread freezing of markets—is thus farfetched, even in the fragile market conditions of the time.

A point not raised by Dowd is this. If the LTCM fund had reached the proportion where its failure could have a nightmare impact on the economy, and funds like the LTCM are subject to risk, why was not the Fed in there regulating the LTCM in the first place?

In summary, the only effect of the actions of the Fed was to find better terms for the managers and stockholders of LTCM—a role manifestly unsuited for the federal government. The grounds for this intervention appear to be baseless, and probably represent cronyism between the management of the Fed and management of LTCM. Furthermore, as we noted earlier, LTCM only had about 100 investors, and it now seems likely that the Fed was mainly interested in protecting these wealthy people.

### 2.10.7 Albania's Ponzi Schemes

Bezemer provided a detailed analysis of the 1997 collapse of the Albanian economy caused by the collapse of economy-wide Ponzi schemes.<sup>100</sup> This contrasted sharply with its successful transition to a post-socialist transition country in the years 1992–1996. In that period, “inflation was contained, GDP increased, and unemployment decreased considerably.” Bezemer referred to this stark contrast as the “Albanian Paradox”:

Albania, the smallest and least developed of the Eastern European transition countries, is located by the Adriatic Sea, bordering on Greece to the south, Macedonia to the East and rump Yugoslavia to the north. It has a 3.2 million population, 56% of which is employed in agriculture.

Bezemer analyzed the causes of the mania. Only a very brief summary is given here. The schemes prospered through a combination of “restrictive monetary policies, large capital inflows, and financial market policies that were very strict for official banks but extremely lenient for informal financial interme-

---

<sup>100</sup> Bezemer (2001).

diaries.” There were few official banks because of the strict requirements for the founding of banks in Albania. These banks operated under significant constraints. Monetary and budgetary policies limited the official supply of money to the economy, so that official savings interest rates were less than the rate of inflation:

In the absence of well-developed stock and real estate markets, this induced people and firms to revert to transactions on informal markets. The demand for financial intermediaries was especially large because of a considerable cash flow to the population in the transition years.... These circumstances drove first business people, later many more non-entrepreneur citizens to the informal markets, where Ponzi-like firms and foundations had started to operate.... The striking contrast is that, while the authorities imposed very strict conditions on growth of the official financial sector, there were no regulatory impediments for those “banking” with Ponzi methods.

The Ponzi schemes offered savers high interest rates. Toward the end, monthly interest rates on savings in informal markets reached as high as 50%:

Ponzi firms employed effective marketing and advertising strategies with full use of the state television, extracting much of Albanian household money from under the proverbial mattress.... The absence of warnings from the government, the frequent appearance of pyramid managers and government officials side by side at public meetings and on television, and the association of pyramid managers with the Democratic Party lent state credibility to the schemes. Not only were much of the population’s savings and (domestic and external) income “invested,” but many people took loans and mortgages on their houses or land in the expectation of quick gains. As a result,...by early 1997, the total value of received deposits reached US \$ 1.2 billion, or 50% of GDP.<sup>101</sup>

These gains were so large compared to wages that many people just stopped working:

The end to large-scale Ponzi operations came in January-February 1997. In the last quarter of 1996, interest rates had risen from 30 to 50% monthly, with some foundations offering 100% monthly.... In February they collapsed, swallowing a large share of the population’s savings. Social unrest spread rapidly as masses of demonstrating Albanians demanded compensation from the government and strong suspicions existed about its involvement in the schemes. These protests, six weeks of looting, the plundering of army arms depots and

---

<sup>101</sup> Bezemer (2001).

the emergence of irregular, armed bands caused the government to lose control over the larger part of Albanian territory.

Bezemer's analysis of Albania was thorough and credible. But he left out one factor: greed.

The longevity of a Ponzi scheme depends upon the ratio of the rate of payout to all participants versus the rate of intake of new funds from new investors. The Albanian Ponzi lasted only a few months because this ratio approached 0.3–0.5 toward the end. Bernard Madoff's Ponzi lasted for years because he held payments to about 1 % per month, and most investors reinvested their (virtual) dividends.

### 2.10.8 Corporate and Accounting Scandals

For the past several decades, the major accounting firms—long known as the “Big Eight” and later consolidated into the “Big Five”<sup>102</sup>—“have been embroiled in a series of scandals involving their failure to detect and disclose financial irregularities at companies they audited.”<sup>103</sup> In some cases, it seems likely that they not only “failed to discover or disclose,” but actively participated in fraud.

During the 1970s, accountancy firms were criticized for failing to alert shareholders to the problems that led to the collapse of the Penn Central Railroad and for not reporting about the widespread payment of bribes by US-based multinationals to secure foreign business:

In the 1980s Peat Marwick gave Penn Square Bank a clean bill of health just before it collapsed under the weight of bad energy loans. Various accounting firms found themselves being sued by the federal government for their role in auditing the books of crooked savings and loan associations. This led to a series of settlements, the largest of which was the agreement by Ernst & Young in 1992 to pay a record \$ 400 million in connection with about a dozen failed S&Ls. The following year Arthur Andersen agreed to pay the feds \$ 82 million to settle charges in connection with the collapse of Charles Keating's Lincoln Savings and Loan Association.<sup>104</sup>

According to tradition, an accounting firm must maintain a distance between itself and the client corporation, in order that it may act independently to

---

<sup>102</sup> Price Waterhouse Coopers, Deloitte Touche Tohmatsu, KPMG International, Ernst & Young, and Arthur Andersen, each with revenues in 2001 that exceeded US\$ 10 billion.

<sup>103</sup> Mattera (2002).

<sup>104</sup> Mattera (2002).

adhere to accepted accounting principles without being swayed into malfeasance by an undue loyalty to corporate management manipulations. However, this constraint limited the revenues of the big accounting firms. In order to increase their revenues, the large accounting firms expanded their business from mundane auditing into management consulting, which for many of the firms became a multibillion-dollar business:

The problem was that consulting put the firms in the role of quasi-insiders and flew in the face of the accounting profession's independence rules. For decades the SEC and Congress periodically raised concerns about the dangers of the industry's increasing involvement in consulting. The most serious reform effort was mounted in 2000 by SEC Chairman Arthur Leavitt, but the industry used its lobbying muscle to defeat Leavitt and later breathed a sigh of relief when Harvey Pitt, a corporate lawyer who had represented the industry, was named by President Bush to head the Commission.<sup>105</sup>

Mattera described the evolution of the new attitude of major accounting firms with examples of failure to disclose financial problems of Penn Central prior to its collapse in the 1970s, and various accounting firms were sued by the federal government for their role in auditing the books of crooked S&L associations in the 1980s. A number of accounting firms made settlements with the government, the largest of which was by Ernst and Young, who paid a record US\$ 400 million in 1992, in connection with about a dozen failed S&Ls. The accounting firms also had to respond to lawsuits brought by disgruntled shareholders of companies whose problems were not revealed by auditors. From 1980 to 1985, Arthur Andersen, paid out over US\$ 137 million to plaintiffs.<sup>106</sup> It has been reported that in the 1990s, the chicanery of accounting firms in collusion with corporations in the *dot.com* bubble reached unprecedented proportions.

As Forbes Magazine said: "With the avalanche of corporate accounting scandals that have rocked the markets recently, it's getting hard to keep track of them all."

Table 2.5 presents a brief glimpse at a small fraction of the corporate accounting scandals of the 1990s. This is just the tip of the iceberg.

The WorldCom scandal provides a good example.<sup>107</sup>

---

<sup>105</sup> Mattera (2002).

<sup>106</sup> It seems probable that the large accounting firms were willing to pay fines and damages that were far less than their profits. This seems to be analogous to automobile companies that would rather pay damages from suits, than pay the cost of making their cars safe.

<sup>107</sup> The WorldCom scandal, A Look Back at One of the Biggest Corporate Scandals in U.S. History, <http://voices.yahoo.com/worldcom-scandal-look-back-one-biggest-225686.html>.

**Table 2.5** Brief summary of a few of the many corporate scandals of the 1990s. (All data in this table were taken from news reports from legitimate news agencies, but no guarantees are made as to accuracy)

Company	Accountants	Issue
Adelphia Communications	Deloitte & Touche	Five former Adelphia executives indicted on 24 counts of securities fraud, wire fraud, and bank fraud. Their actions, were described by a US Attorney as "one of the most elaborate and extensive corporate frauds in history" (see Sect. 2.9.1) John J. Rigas, founder, guilty verdict, 15 years Timothy Rigas, former CFO, guilty verdict, 20 years James R. Brown, former vice president, pleaded guilty, awaiting sentencing
AOL-Time Warner	Ernst & Young	Several class-action lawsuits were brought against AOL-Time Warner in 2002 for allegations that it made material misrepresentations to the market, thereby artificially inflating the price of AOL Time Warner securities. The complaints alleged that they failed to disclose: (1) that the Merger was not generating the claimed synergies, (2) that the Company was experiencing declining advertising revenues, and (3) that the Company had failed to properly write down more than US\$ 50 billion of goodwill. These suits were consolidated into one, and in the final settlement, AOL-Time Warner was ordered to pay US\$ 2.65 billion and Ernst and Young had to pay US\$ 100 million into a settlement fund
Bristol-Myers Squibb	Price-Waterhouse Coopers	Bristol-Myers Squibb agreed to pay US\$ 150 million to settle SEC accusations that the company improperly inflated its sales and earnings in a series of accounting frauds. In addition, Bristol-Myers agreed to pay US\$ 300 million to settle a shareholder class-action lawsuit over similar claims. The SEC said in addition, it would still pursue an inquiry that could result in civil fraud charges against individuals. Nor does the settlement resolve a Justice Department criminal investigation into the same accounting practices that could bring criminal charges against Bristol-Myers or its employees. The SEC assistant regional director who led the investigation said the substantial penalty was appropriate for the severity of the company's missteps: "This is extremely egregious accounting fraud.... There was a US\$ 1.5 billion revenue recognition problem, which puts it second only to WorldCom." Bristol-Myers used several earnings management techniques to distort the company's true performance from early 2000 until the end of 2001. Regulators say that Bristol-Myers inflated its revenues by more than US\$ 1 billion, going back at least to 1991

Table 2.5 (Continued)

Cendant Corp.	Ernst & Young	<p>Cendant agreed to pay US\$ 2.83 billion to settle a shareholder lawsuit accusing it of fraud. Cendant had issued false and misleading statements and allowed former company directors and officers to sell Cendant shares prior to the disclosures of the accounting problems</p> <p>Ernst &amp; Young LLP settled for nearly US\$ 300 million a lawsuit brought against it by Cendant Corp., according to a securities filing late last year by a former Cendant subsidiary. In its suit, Cendant alleged that Ernst negligently failed to detect a massive fraud during its audits of a unit of the company</p> <p>Ernst had already, in 2000, paid out US\$ 335 million to Cendant shareholders as a result of the fraud. That is believed to be the largest-ever settlement by an auditor related to work for a single client</p>
CMS Energy	Arthur Andersen	<p>CMS was charged with: (1) deceiving the investing public regarding its business, operations, and management; (2) offering securities to the investing public at artificially inflated prices which incorporated false and misleading statements; (3) engaged in illegal insider trading; and (4) overstating revenue by nearly US\$ 5.2 billion in 2000 and 2001 by using artificial "round trip" energy trades. CMS agreed to a US\$ 200 million settlement of shareholder suits</p>
Computer Associates International	KPMG	<p>Computer Associates was charged with "falsely reporting to investors and regulators during numerous fiscal quarters..., improperly recognizing and falsely reporting hundreds of millions of dollars of revenues..., as well as "obstruction of justice and perjury." The former chief executive of Computer Associates International, Sanjay Kumar, was sentenced to 12 years in prison for orchestrating a US\$ 2.2 billion accounting fraud at the software company. He was also fined US\$ 8 million</p>
Dollar General Corp.	Ernst & Young	<p>Dollar General overstated its earnings US\$ 200 million from 1998 to 2000. Dollar General paid US\$ 162 million to settle class-action shareholder lawsuits for the accounting missteps</p>
Duke Energy	Deloitte & Touche	<p>Duke Energy and some of its team members were prosecuted for various crimes, including conspiring to drive up electricity costs in western energy markets, and various counts of conspiracy and fraud. Several of those charged were acquitted, but Duke reached a settlement agreement in principle with the states of California, Washington and Oregon; federal regulators; California's three largest investor-owned utilities; and other parties to pay US\$ 200 million in restitution</p>

**Table 2.5** (Continued)

Dynergy	Arthur Andersen	<p>Dynergy Inc., is a Houston-based producer of natural gas and electricity that tried to take over a failing Enron but instead went into its own tailspin. It has been the target of several federal probes into alleged sham trades aimed at artificially inflating revenue and volume. Dynergy's longtime chief executive resigned under pressure.</p> <p>The University of California announced a US\$ 474 million settlement on behalf of Dynergy investors in the securities fraud class-action case of which it was lead plaintiff. This settlement includes US\$ 468 million from the company; US\$ 5 million from Citigroup, a bank involved in the fraudulent transactions; and US\$ 1.05 million from Arthur Andersen, Dynergy's auditor in 2002.</p> <p>Jamie Olis, a former midlevel executive at Dynergy, and two former associates at Dynergy were found guilty of devising a secret project to disguise a US\$ 300 million loan as cash flow. Their sentences, however, were modest.</p>
El Paso	Price Waterhouse Coopers	<p>The FERC approved El Paso's US\$ 1.55 billion settlement with the state of California over allegations that El Paso manipulated natural gas prices during the state's electricity crisis. El Paso will pay US\$ 551 million in cash up front, and the remainder with additional payments and rate reductions.</p>
Enron	Arthur Andersen	<p>Enron manipulated the utilities markets by (1) spending great sums of money to influence regional legislators to pass deregulation policies favorable to Enron, (2) buy up control of suppliers of utilities in these regions where deregulation was in force, and (3) use their control of the regional utility supplies to force up prices paid by suppliers to end users (i.e., the public) and thereby make huge profits at the public's expense. They were eventually convicted of various crimes and the company fell apart. See Sect. 2.9.3</p> <p>Kenneth Lay, former chairman, guilty verdict, deceased</p> <p>Jeffrey Skilling, former CEO, guilty verdict, 24 years</p> <p>Andrew Fastow, former CFO, pleaded guilty, 6 years</p> <p>Lea Fastow, former treasurer, pleaded guilty, 1 year</p> <p>Michael Kopper, former managing director, pleaded guilty, 3 years</p>

Table 2.5 (Continued)

Global Crossing	Arthur Andersen	It was claimed that Global Crossing swapped network capacity with carriers to boost sales and falsify earnings while former chairman Gary Winnick made over US\$ 700 million selling stock. After the company filed for Chapter 11, Winnick pledged US\$ 25 million to help the workers who had lost their savings in the collapse while workers actually lost more than ten times that amount, tens of thousands of jobs were lost, and stockholders lost billions. Former VP of finance and whistle-blower Roy Olofson claims that Global Crossing falsified more than US\$ 1 billion in revenue through round-tripping and that its auditor, Arthur Andersen, permitted improper bookkeeping entries. Global Crossing paid US\$ 325 million to settle a class-action suit filed by former stockholders
Halliburton	Arthur Andersen	Halliburton has been accused of numerous scandalous operations, none of which seem to have been resolved judicially, possibly due to influence of VP Cheney
IMClone Systems	KPMG	Former CEO Sam Waksal paid US\$ 800,000 to settle charges that he was involved in US\$ 5 million of stock sales based on insider information; he allegedly dispersed information to family and friends, including Martha Stewart, regarding the FDA's pending rejection of the company's new cancer drug, Erbitux. Waksal also pled guilty to six charges including securities fraud, bank fraud, conspiracy to obstruct justice, and perjury. In his bank fraud plea, he confessed to forging a lawyer's signature for a US\$ 44 million bank loan
Kmart	Price Waterhouse Coopers	Kmart has been involved in so many scandals that it is difficult to keep track of them all. Two former VPs were indicted by the SEC and DOJ for securities fraud. These were considered to be only the first results of investigations into a company (that) collapsed in January 2002 under a team of executives known inside Kmart as the Frat Boys, who misused corporate jets, drove luxury leased cars, and received lavish salaries while steering the company into the largest retail bankruptcy in history" The Securities and Exchange Commission filed charges against two former top Kmart executives for misleading investors about Kmart's financial condition in the months preceding the company's bankruptcy A federal judge approved a settlement in a class-action lawsuit filed against a group of former Kmart Corp. executives, that gives approximately 125,000 employees and retirees of Kmart US\$ 11.75 million to settle their 2002 claims against the company executives. The US Securities and Exchange Commission accused the two men of making "materially false and misleading" disclosures to shareholders before the retailer's 2002 bankruptcy filing



Table 2.5 (Continued)

Merck & Co	Arthur Andersen	Merck recorded US\$ 12.4 billion of income through pharmacy benefits that its subsidiary, Medco, never actually collected. (Chicago Tribune, July 9, 2003) Merck has agreed to pay US\$ 42.5 million to settle class action lawsuits claiming that Medco "pocketed billions of dollars in rebates from manufacturers and other fees that they said should have gone to thousands of health plans and millions of consumers." Lawyers claim that Medco has kept more than US\$ 4.1 billion since 1995
Micro Strategy	Price Waterhouse Coopers	Three Microstrategy executives, CEO Michael Saylor, COO Sanju Bansal, and CFO Mark Lynch, paid US\$ 10 million in an SEC settlement alleging accounting fraud in December 2000. Each of the men were also fined US\$ 350,000, the largest fines in SEC history for cases not involving insider trading. Microstrategy repeatedly delayed or prebooked deals to inflate company earnings. They converted a US\$ 40.3 million loss in 1999 to a US\$ 12.6 million profit using fake accounting. Microstrategy agreed to pay US\$ 97.0 million in a class-action suit in October 2000. The stock had lost US\$ 15.9 billion in value between March and the time the suit was settled
Peregrine Systems	Arthur Andersen	Peregrine reported that it had misstated its income by US\$ 1.5 billion, but later revealed it had misstated by US\$ 4.1 billion. The company used several deceptive accounting techniques, including fictitious sales, mis-booked transactions, and deferral of revenue to invent two-thirds of its income. This information was not released until the week after four members of the board had already quit, including Chairman John Moores who made more than US\$ 611 million in stock sales since the company's initial public offering in 1997. Trials were still proceeding in 2007 but at least eight individuals pleaded guilty. However, the ex-president was sentenced in 2008 to only 3 years probation for lying about what he knew of the fraud that destroyed the software company
PNC Financial Services Group	Ernst & Young	The settlement with the Justice Department required PNC to pay US\$ 115 million in penalties connected with securities fraud charges in July 2002. The charges related to PNC's effort to remove from its books US\$ 762 million in bad corporate loans and investments in 2001, which inflated annual earnings by US\$ 155 million (52 %) The scandal also led to the departure of several key executives, including PNC's former vice chairman Walter Gregg Jr. and Chief Financial Officer Robert Haunschild

Table 2.5 (Continued)

Qwest Communications	Arthur Andersen	<p>Qwest wrongly booked US\$ 1.1 billion in revenues between 1999 and 2001. Qwest used "round-trip" trades to inflate its revenues, which is the swapping of equal amounts of fiber-optic capacity with other companies only to inflate revenues. Eight executives have been charged by the SEC with involvement in booking US\$ 144 million in revenue early to meet earnings projections, and four of those executives have been indicted by the Justice Department for falsifying US\$ 33 million in revenue in 2001 as well as falsifying records for its auditor, Arthur Andersen. Fortune magazine named Qwest the greediest corporation in America because former CEO Joseph Nacchio and former chairman Philip Anschutz made US\$ 2.2 billion in company stock sales just before the stock value fell. Qwest agreed to pay US\$ 400 million to settle a class-action suit, but that suit remained unsettled in early 2008. After telling former Qwest chief executive Joe Nacchio that he committed "crimes of overarching greed," a federal judge ordered him to serve 6 years in prison, pay US\$ 19 million in fines and forfeit US\$ 52 million in ill-gotten gains for illegally selling company stock</p>
Rite Aid	Deloitte & Touche	<p>Rite Aid restated US\$ 1.6 billion of earnings in June 2002, the largest corporate restatement in history at the time. The former CEO, Martin Grass, and two aides were indicted by a federal grand jury on 37 counts of fraud, conspiracy, and lying to shareholders. The SEC has accused the three men of masterminding schemes to overstate income by cheating vendors, falsifying documents, and ordering executives to inflate numbers. These actions led to a 5533 % profit overstatement in the second quarter of 1999. Former Rite Aid CEO Martin Grass drew an 8-year sentence for accounting fraud. Former Rite Aid chief counsel Franklin Brown is serving a 10-year term for his role in an accounting scandal</p>
Tyco	Price Waterhouse Coopers	<p>Former Tyco executives CEO Dennis Kozlowski and CFO Mark Swartz allegedly stole US\$ 600 million from their company by bribing their board to keep secret US\$ 170 million of unauthorized bonuses and loans and US\$ 430 million of stock sold at inflated value. Kozlowski used company funds to buy a US\$ 30 million apartment, a US\$ 21 million yacht, as well as a US\$ 17,100 traveling toilet box and a US\$ 15,000 dog umbrella stand. Kozlowski has also been indicted on a 14-count charge of US\$ 1 million tax evasion. Tyco has agreed to pay about US\$ 3 billion to settle shareholder claims from one of the largest corporate fraud cases ever</p> <p>Dennis Kozlowski, former CEO, guilty verdict, 8–25 years</p> <p>Mark Swartz, former CFO, guilty verdict, 8–25 years</p>

Table 2.5 (Continued)

Waste Management	Arthur Andersen	<p>Former Waste Management CEO Dean Buntrock and five other executives allegedly made US\$ 29 million dollars from annual bonuses and insider trading while stockholders lost US\$ 6 billion by perpetrating US\$ 1.7 billion of accounting fraud during the 1990s, according to the SEC. The Waste Management executives worked with Arthur Andersen to undertake "massive earnings management fraud" which included hiding debts, overestimating property values, and not writing off the cost of unsuccessful or abandoned landfill projects. Arthur Andersen paid US\$ 7 million to settle a civil suit with the SEC that alleged false and misleading audit reports of Waste Management from 1993 to 1996. In March 2002, former Waste Management Inc. CFO James Koenig and five other former executives were sued by the SEC for their roles in the then-largest accounting scandal in US history. Koenig was sentenced to pay US\$ 4.2 million total in disgorgement, prejudgment interest, and civil penalties, and was prohibited from serving as a director or officer of a public company. A jury found him liable for violating securities laws 60 times between 1992 and 1997 in a scheme that resulted in a US\$ 1.7 billion overstatement in the Houston-based trash collector's profits</p>
WorldCom	Arthur Andersen	<p>WorldCom has restated US\$ 11 billion for costs that it had wrongly booked, which eventually led to a record-setting US\$ 107 billion bankruptcy. Yet, the SEC settled with WorldCom without fining it. Instead, WorldCom agreed not to break laws in the future, despite the claim that WorldCom has committed the largest case of corporate fraud in US history which has cost investors over US\$ 176 billion. Among other things, executives created a scheme to book short-term operating costs in small increments as long-term capital costs so they could meet revenue goals. WorldCom also set a record for the largest single write-off in US history when it restated US\$ 79.8 billion to reestimate the value of its assets. Sentencing:</p> <hr/> <p>Bernard Ebbers, former CEO, guilty verdict, 25 years</p> <hr/> <p>Scott Sullivan, former CFO, pleaded guilty, 5 years</p> <hr/> <p>David Myers, former controller, pleaded guilty, 1 year, 1 day</p> <hr/> <p>Buford Yates, former accounting director, pleaded guilty, 1 year, 1 day</p>

**Table 2.5** (Continued)

Xerox	KPMG	<p>In July 2002, Xerox restated its 5-year revenue by US\$ 6.4 billion and its income by 36 %, or US\$ 1.41 billion. Xerox inflated its revenue by booking deals before they were signed, and by keeping those prebooked deals on the records even if they fell through. KPMG, Xerox's auditor, was sued by the SEC for its involvement in fraudulent accounting practices for Xerox. Xerox paid the SEC US\$ 10 million to settle allegations of accounting fraud in April 2002 for its initial restatement estimate of US\$ 3 billion. The SEC levied record fines against current and former KPMG auditors accused of helping Xerox Corp. overstate revenue by US\$ 3 billion. The two men who directly oversaw Xerox audits, Ronald Safran and Michael Conway, agreed to pay US\$ 150,000 each to settle a lawsuit brought by the SEC. The previous record was US\$ 100,000 that former KPMG partner Joseph Boyle agreed to pay to resolve his role in the Xerox audit</p>
-------	------	--

Beginning in 1999 and continuing through May 2002, WorldCom (under the direction of Scott Sullivan, CFO; David Myers, Controller; and Buford Yates, Director of General Accounting) used shady accounting methods to mask its declining financial condition by falsely professing financial growth and profitability to increase the price of WorldCom's stock.

The fraud was accomplished in two main ways. First, WorldCom's accounting department underreported "line costs" (interconnection expenses with other telecommunication companies) by capitalizing these costs on the balance sheet rather than properly expensing them. Second, the company inflated revenues with bogus accounting entries from "corporate unallocated revenue accounts."

The first discovery of possible illegal activity was by WorldCom's own internal audit department who uncovered approximately US\$ 3.8 billion of the fraud in June 2002.... By the end of 2003, it was estimated that the company's total assets had been inflated by around US\$ 11 billion.

On July 21, 2002, WorldCom filed for Chapter 11 bankruptcy protection, the largest such filing in US history. The company emerged from Chapter 11 bankruptcy in 2004 with about US\$ 5.7 billion in debt....

On March 15, 2005, Bernard Ebbers was found guilty of all charges and convicted on fraud, conspiracy, and filing false documents with regulators. He was sentenced to 25 years in prison. Other former WorldCom officials charged with criminal penalties in relation to the company's financial misstatements include former CFO Scott Sullivan (entered a guilty plea on March 2, 2004,

to one count each of securities fraud, conspiracy to commit securities fraud, and filing false statements), former controller David Myers (pleaded guilty to securities fraud, conspiracy to commit securities fraud, and filing false statements on September 27, 2002), former accounting director Buford Yates (pleaded guilty to conspiracy and fraud charges on October 7, 2002), and former accounting managers Betty Vinson and Troy Normand (both pleading guilty to conspiracy and securities fraud on October 10, 2002). Ebbers reported to prison on September 26, 2006, to begin serving his sentence.

It is difficult to perceive a pattern in the punishments meted out to financial culprits, and they do not seem to be proportional to the crime. While some financial criminals were sentenced to substantial terms (Adelphia, Enron, Rite Aid, DBL, Tyco, WorldCom), many others received unusually light sentences. In 2008, the ex-president of Peregrine Systems was sentenced to only 3 years probation for lying about what he knew of the fraud that destroyed the software company. A website<sup>108</sup> lists several cases where the punishment seems incredibly mild compared to the crime, and faults the SEC for tolerating corporate crime. One case in point provided by the “Skeptical CPA” was Broadcom, which

agreed to pay \$ 12 million to settle SEC charges it falsified its reported income by backdating stock-option grants over a five-year period. The company restated its financial results in January 2007 and reported more than \$ 2 billion in additional compensation expenses....

The amazing thing here is that Linda Thomsen, the SEC’s enforcement-division director, was quoted as saying that “the significant penalty imposed on the company” was warranted by the “scope and magnitude of the fraud.” The “Skeptical CPA” responded with sarcasm:

Is Thomsen joking? A \$ 12 million penalty for a \$ 2 billion restatement! Wow, that’s .006 of the restatement. I’m sure this will deter future corporate miscreants.

A *New York Times* article “points to an ideological sea change on the Supreme Court” who in the past “viewed big business with skepticism—or even outright prejudice” but now is “more receptive to business concerns”:

In a case in 1964, the court ruled that aggrieved investors and consumers could file private lawsuits to enforce the securities laws, even in cases in which Congress hadn’t explicitly created a right to sue. In the mid-1990s, however,

<sup>108</sup> Skeptical CPA, <http://skepticaltexascpa.blogspot.com/>.

Congress substantially cut back on these citizen suits, and the court today has shown little patience for them.

This term, the Supreme Court has continued to cut back on consumer suits. In a ruling in January, the court refused to allow a shareholder suit against the suppliers to Charter Communications, one of the country's largest cable companies. The suppliers were alleged to have "aided and abetted" Charter's efforts to inflate its earnings, but the court held that Charter's investors had to show that they had relied on the deceptive acts committed by the suppliers before the suit could proceed. A week later, the court invoked the same principle when it refused to hear an appeal in a case related to Enron, in which investors are trying to recover \$ 40 billion from Wall Street banks that they claim aided and abetted Enron's fraud. As a result, the shareholder suit against the banks may be dead.<sup>109</sup>

For a number of years, Lloyd's Bank of London ran an advertisement that said: "At Lloyd's Bank, we know whom we work for." However, it was never clear whether this implied that they worked for the clients, the shareholders, or the management. Fortunately, we have no uncertainty as to whom the Supreme Court works for—"we hold these truths to be self-evident."

It is abundantly clear that the Supreme Court, the Federal Reserve, and the Department of the Treasury are run for the benefit of the rich, and, ultimately, we have a government of the rich, by the rich, and for the rich.

One of the biggest, most publicized scandals involved a number of players in the 1980s with names like Levine, Boesky, Milken, and others. The story is long and involved.<sup>110</sup> One key player was Dennis Levine, who is described by Stewart as a rather incompetent investment banker with a big ego and ambitions to match. Levine promoted and nurtured personal connections to several colleagues in other investment banking companies during the 1980s when corporate takeovers were rampant, and big profits could be made by buying stock in the company to be taken over prior to the takeover event. Using inside information, he bought stocks via secret overseas accounts in Swiss banks, and parlayed a rather meager starting position into considerable wealth. Not only did Levine acquire information from conversations, he actually used a connection to steal into a rival investment house and repeatedly rifle through their files. He also worked closely with Ivan Boesky, who ran an arbitrageur business, to take positions in stocks ripe for takeover in order to force the hands of the companies to bend to their demands. What is interesting about Levine is that the several investment banks that he worked for thought him to

<sup>109</sup> Supreme Court Inc., *New York Times Magazine*, March 16, 2008.

<sup>110</sup> James B. Stewart required almost 600 pages to tell the whole story in his book: *Den of Thieves*, Simon and Schuster, 1991.

be technically incompetent, but he seemed to have an uncanny ability to identify takeover situations before they became public. As a result, he made a good deal of money for his investment banks and he was highly valued even though he did not seem to be very smart. But Levine claimed to have an almost prescient sense of the market and demanded high pay and exalted positions from the investment banks based on his performance—which was mainly based on illegally acquired inside information. Levine lived high on the hog with an extravagant lifestyle until he was caught. He arrogantly sneered at the SEC, which during the Reagan years, was underfunded and not encouraged to take any initiative. What ultimately did him in was that his operations became too conspicuous; the investigators found 28 clear instances of his insider trades prior to a takeover, and all his profits went into one overseas account.<sup>111</sup> After Levine was arrested, he told authorities of the relationship to Boesky, who in turn was arrested. Along with Milken, the triumvirate was guilty of insider trading, false public disclosures, tax fraud, parking violations,<sup>112</sup> market manipulation, and other assorted technical crimes. Both Levine and Boesky pleaded guilty; Boesky received a US\$ 100 million fine and both received prison sentences. It has been the experience of this writer that insider trading has always been present and even rampant on Wall Street. It is clear that stocks move early in anticipation of news releases, events, and takeover bids. Some of this is legitimate anticipation by astute investment gurus, but a good deal of it is undoubtedly based on illegally obtained inside information that inevitably leaks out. Separating one from the other is difficult. If a given trader uses inside information only once, or rarely, it is almost impossible to catch him. It is only in the case of extreme arrogance where a trader carries out illegal trades repeatedly that a pattern emerges that allows him to be caught. That is what happened to Levine and his network of conspirators.

In the mid-1970s, standards for bonds were high, and most corporate bonds were rated as investment grade. The few bonds with low ratings that existed were mostly from companies that once flourished but had fallen on hard times (“fallen angels”). These bonds were discounted and thereby paid much higher current interest than investment-grade bonds, because of the perceived risk inherent in what we now call “junk bonds.” Michael Milken was influenced by studies of low-grade bonds that indicated that the risk inherent in these bonds was not so much greater than for investment grade bonds, and the additional interest could prove to be very rewarding. Milken went to work for Drexel, Burnham and Lambert (DBL) and by 1977 controlled a signifi-

---

<sup>111</sup> There is a saying on Wall Street that “The bulls make money; the bears make money; and the pigs get eaten.”

<sup>112</sup> In this context, “parking violations” has nothing to do with vehicles. It refers to using surreptitious ownership of a stock through an intermediary to hide the true ownership.



cant percentage of the then rather thin market in junk bonds. It is claimed that through careful research and selection, a diversified bond portfolio made up of junk bonds paid sufficiently high interest rates to more than make up for the slightly higher risk.

An innovation that Milken introduced was to actually underwrite new issues of junk bonds by companies in poor financial condition. As we stated, prior to Milken, such companies would not have had the temerity to offer junk bonds as a new issue—junk bonds had previously been mainly remnants of “fallen angels.” But it was necessary to create funds to carry out Milken’s ultimate plan, which was to use *funny money* obtained from a *junko* company selling junk bonds to the public, as a means of taking over legitimate companies with real assets, worth much more than the junk bonds that financed the takeover. As companies with poor credit found they could raise capital without having to offer equity shares, the junk bond boom took off. DBL created a market for first-issue junk bonds. In 1983, DBL underwrote its first US\$ 1 billion junk bond issue, for MCI Communications. DBL’s share of the junk bond market peaked at about 75 % in 1983 and 1984.

Milken, like Levine and Boesky, had contempt for rules and regulations, and engaged in activities that may be viewed as unethical or in some cases illegal. When Boesky confessed, he implicated Milken in several illegal transactions, including insider trading, stock manipulation, fraud, and stock parking. This led to an SEC probe of DBL. The probe went on for 2 years, during which Milken and DBL parried and obfuscated the investigations. In 1989, Milken was indicted on 98 counts of racketeering and fraud. In an effort to end what he viewed as government harassment, Milken finally pled guilty to six felony counts, including illegal insider trading, and filing false tax returns. Milken received a 10-year sentence but only served 22 months in prison. He remains a very wealthy man despite paying about a billion dollars in fines.

## 2.11 The Subprime Real Estate Boom 1998–2007

### 2.11.1 Historical Background

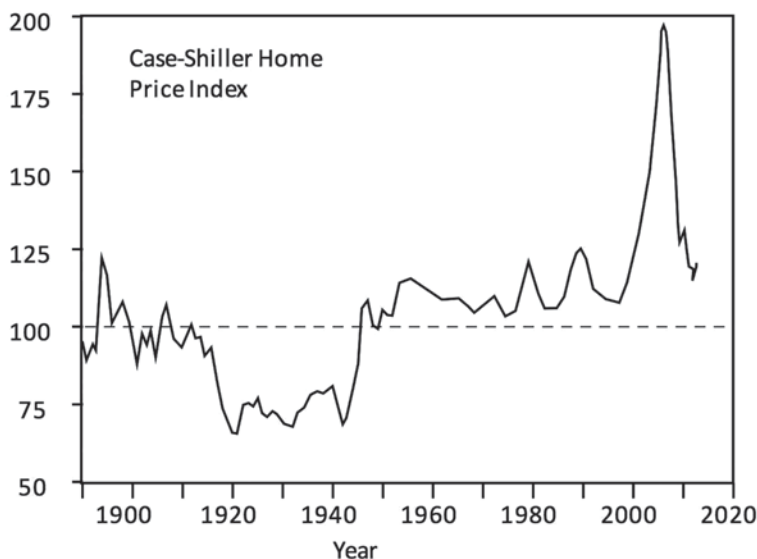
Robert Shiller estimated national average inflation adjusted house prices dating back to 1895 as shown in Fig. 2.18.

Except for the Great Depression of the 1930s, real estate prices adjusted for inflation were essentially flat until the 1990s.

As Dean Baker said,

[From 1995 to] 2002, house prices [rose] by nearly 30 % after adjusting for inflation. Given the long history of stable house prices shown in the government





**Fig. 2.18** Estimated national average inflation-adjusted house prices dating back to 1895. (Adapted from: [http://en.wikipedia.org/wiki/Case%E2%80%93Shiller\\_index](http://en.wikipedia.org/wiki/Case%E2%80%93Shiller_index))

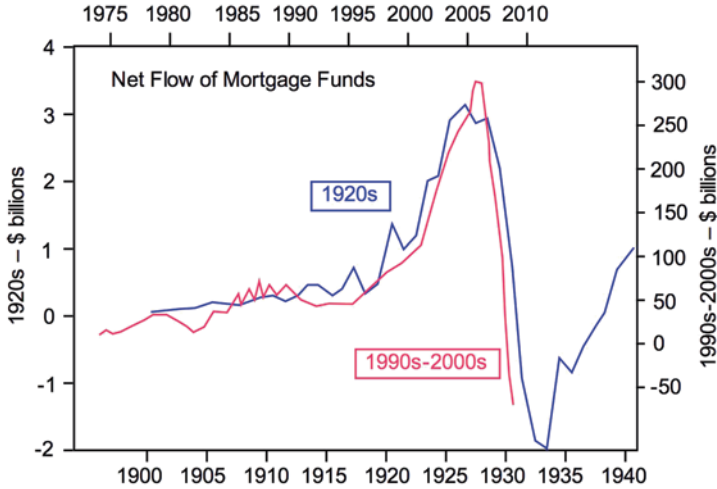
data, and the even longer history in the data series constructed by Shiller, it should have been evident that house prices were being driven by a speculative bubble rather than the fundamentals of the housing market.<sup>113</sup>

There are some parallels between the housing boom of 1997–2007 and the housing boom of the 1920s, except that the scale of the more recent boom was 100 times higher. Allowing for inflation, it was actually about seven times higher. See Fig. 2.19.

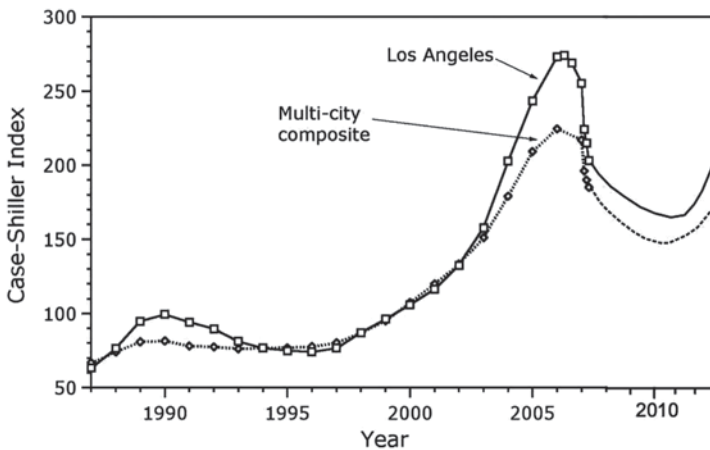
### 2.11.2 House Prices During the Boom

The national average of annual price increases for a representative set of cities over the past 25 years is shown in Fig. 2.20. This figure also shows that for hot markets such as Los Angeles, the annual increases were even greater than the national average. The Case–Shiller index for Los Angeles increased by 18% in 2003, by 30% in 2004, by 20% in 2004, by 20% in 2005, and by 13% in 2006. What started out as a rise in house prices that mirrored the rise in stocks in the late 1990s turned into a stampede to refinance and “trade up” in the 2000s. Somewhere around 2003–2004, the character of this rising market evolved into a bubble that went out of control. Speculators began to

<sup>113</sup> Baker, Dean, The housing bubble and the financial crisis, [paecon.net/PAEReview/issue46/Baker46.pdf](http://paecon.net/PAEReview/issue46/Baker46.pdf).



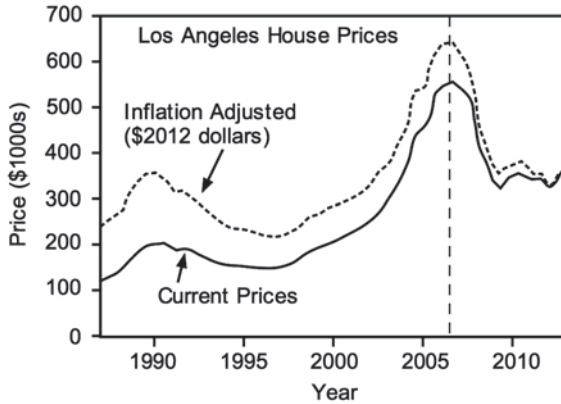
**Fig. 2.19** Comparison of real estate bubbles of the 1920s and 1997–2007. (Adapted from Baker, Dean, *The housing bubble and the financial crisis*, [paecon.net/PAEReview/issue46/Baker46.pdf](http://paecon.net/PAEReview/issue46/Baker46.pdf))



**Fig. 2.20** Case-Shiller real estate indices for a composite of ten cities and for Los Angeles. (Adapted from: <http://ebookbrowse.net/sa-cshomeprice-history-102706-xls-d148113978>)

outnumber those who bought homes to live in as their principal residences. Speculators bought homes with the intention of turning them over to a later-arriving speculator perhaps within a year or two. With low or even zero down payments, they had little to lose.

The quickest, easiest, most leveraged way to earn profits in this era was to buy a house and sell it a year or two later. In the speculative stage, the original reason for purchasing a residence is forgotten, and one invests only to turn



**Fig. 2.21** Case–Shiller real estate indices for Los Angeles, with adjustment for inflation. (Adapted from: <http://ebookbrowse.net/sa-cshomeprice-history-102706-xls-d148113978>)

over the investment to “a bigger fool.” As the frenzy builds, speculators borrow to increase their leverage, and thus expand the bubble until it eventually pops. That is exactly what happened from 2003 to 2007. Many people bought several houses on little or no money down and sat back to await capital gains. Even more stretched their finances beyond the breaking point, knowing that they could not meet monthly payments for too long, with the expectation that a double-digit-per-year price increase would bail them out.<sup>114</sup>

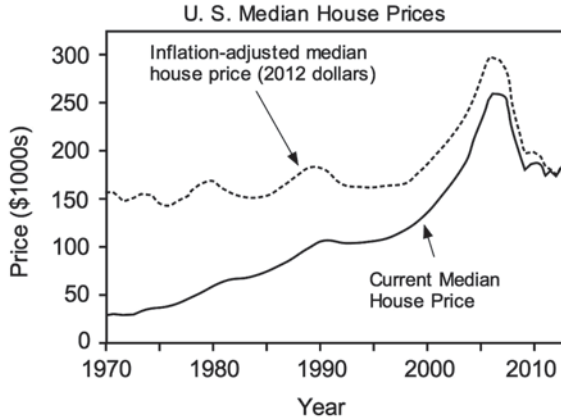
Figure 2.21 shows Los Angeles real estate indices corrected for inflation. Figure 2.22 shows national average real estate indices corrected for inflation. Figures 2.23 and 2.24 show year-to-year changes in house prices in two “hot markets.”

As Dean Baker<sup>115</sup> pointed out,

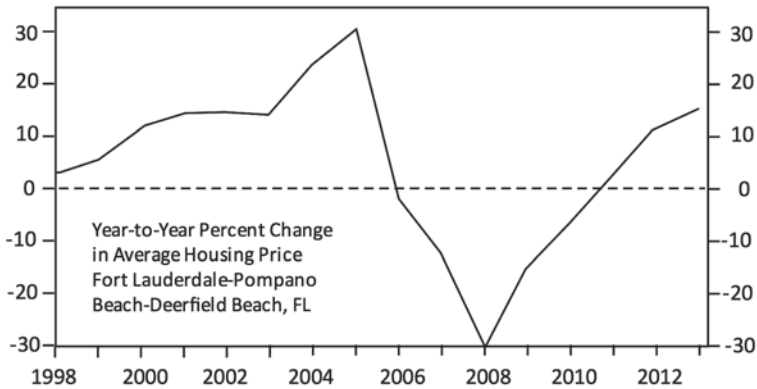
For 100 years, from 1895 to 1995, nationwide house prices in the United States tracked the overall rate of inflation. Some price variation by year was also common. During some years, house prices did rise more rapidly than the overall rate of inflation, sometimes for four or five years in a row. But even in these cases, the cumulative increase in house prices was only slightly greater than the rate of inflation, in the range of 10 to 15 percentage points. Eventually these run-ups would be offset by house prices that rose less rapidly than other prices. The housing market in the United States was a \$ 10 trillion market in 1995, even before the bubble [of 1997–2007] sent prices through the roof.

<sup>114</sup> Note: The 10–20% profit is on the house price. For an investor who puts 5% down on the house, the profit *on his investment* is 200–400%. For an investor who puts no money down, the profit margin is infinite.

<sup>115</sup> Baker (2011).



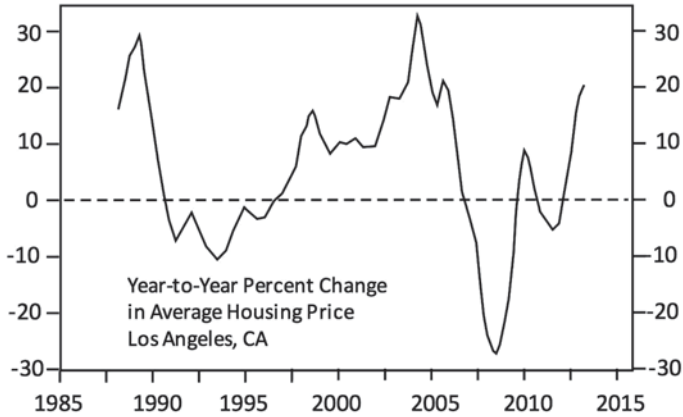
**Fig. 2.22** Case–Shiller real estate indices for the USA, with adjustment for inflation. (Adapted from: <http://ebookbrowse.net/sa-cshomeprice-history-102706-xls-d148113978>)



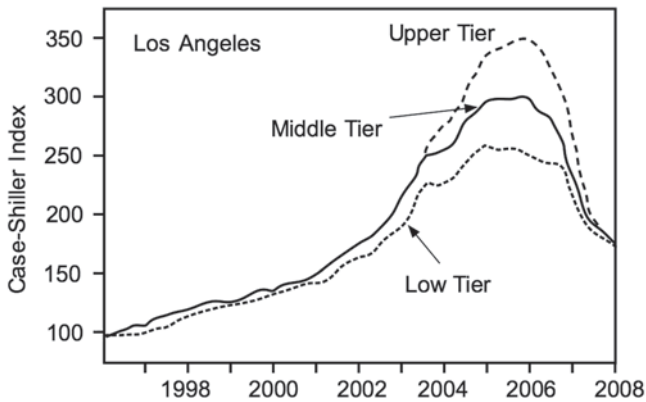
**Fig. 2.23** Year-to-year percent change in house prices for a “hot market” in Florida. (Adapted from: <http://ebookbrowse.net/sa-cshomeprice-history-102706-xls-d148113978>)

In the summer of 2002, house prices had already outpaced the overall rate of inflation by 30% creating more than \$ 3 trillion of housing-bubble wealth. Even by that point it should have been evident that the housing market was in a seriously expanding bubble. Absolutely nothing on either the demand or the supply side of the market—that is, in the fundamentals of the market—could have explained this unprecedented increase in nationwide house prices.

As Fig. 2.25 shows, the more expensive houses rose more rapidly percentage-wise during the boom.



**Fig. 2.24** Year-to-year percent change in house prices for a “hot market” in Los Angeles. (<http://ebookbrowse.net/sa-cshomeprice-history-102706-xls-d148113978>)



**Fig. 2.25** Case-Shiller index for Los Angeles broken down into three tiers of house value. (Baker 2011)

All of this was done with the willing complicity of banks, agents, and appraisers. Mortgages were offered with no money down, with “teaser” low initial interest rates, sometimes with no principal paid off for the first few years, allowing deficits in payments to accrue to increases in principal owed, and with little or no checks on the financial status of the borrower, or the ability of the borrower to make payments. This environment aided and abetted those who saw purchasing a house as a way to make a quick profit. A frenzy of competition developed between banks to sell the greatest number of mortgages, however precarious the terms. Profits from new loan fees were the motivation. These loan fees were treated as current year income, boosting stock prices. As long as house prices kept rising, all excesses of judgment in granting mort-

gages would be forgiven. The Republican government's view was that *deregulation* of banks meant *no regulation*. The Fed, under Alan Greenspan, pumped money into the system as fast as it was demanded.

As the traditional requirements for obtaining a mortgage were relaxed and in many cases, totally ignored, more and more “subprime” mortgages were issued that were extremely precarious, and depended on the expected double-digit annual increase in asset value to bail out over-invested speculators. In addition to these subprime mortgages, Americans as a whole increased their debt via refinancing at higher levels, thus drawing out cash from their inflated homes (i.e., using their homes as ATM machines in which you only withdraw, but never deposit).

### 2.11.3 Contributing Factors Toward the Boom

#### 2.11.3.1 Overview

Stephen Gjerstad and Vernon L. Smith (GS)<sup>116</sup> pointed out that there were previous nationwide housing bubbles with peaks in 1979 and 1989, although these were modest compared to that of 1997–2007. They suggested that “the upward turn in housing prices that began in 1997 was probably sparked by rising household income...combined with a very popular bipartisan political decision in 1997 to eliminate taxes on capital gains of up to a half million dollars for residences.” When the Federal Reserve decided to pursue an exceptionally expansionary monetary policy in 2001 to counteract effects of the burst *dot.com* bubble,

...the money flowed to the fastest expanding sector of the economy. House prices were already rising, and both the Clinton and Bush administrations pursued the goal of expanding homeownership; public policy and private incentives combined to erode mortgage-underwriting standards. Mortgage lenders, the government-sponsored enterprises (Fannie Mae and Freddie Mac), and investment banks that securitized mortgages, used rising home prices to justify loans to buyers with limited assets and income. Rating agencies also accepted the notion of ever-rising home values, so they gave large portions of each securitized package of mortgages an investment grade rating, and investors gobbled them up. Everybody in the chain thought that risk was being reduced by the fact that the asset values underlying loans were growing.

The availability of housing finance and the relaxation of lending standards provided a flow of new buyers into the market that even rapid investment in new housing construction couldn't fully accommodate, so house prices rose

---

<sup>116</sup> By permission from Gjerstad and Smith (2009).

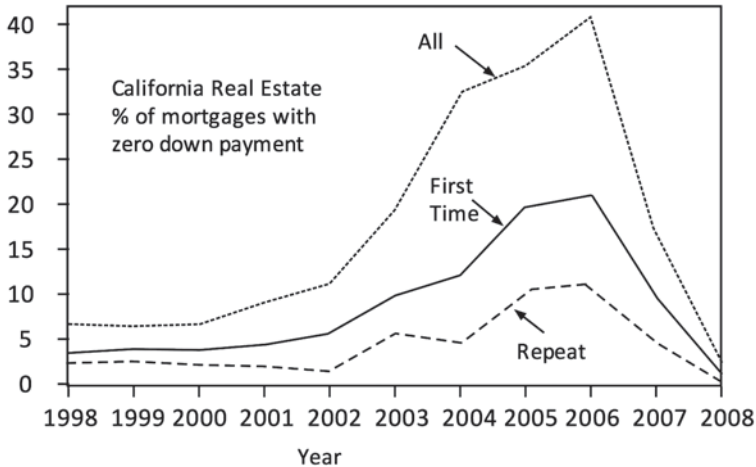
dramatically. When even sub-prime lending couldn't keep new buyers arriving fast enough to sustain the price increases, the financial wizards turned to the interest-only *adjustable rate mortgage* (ARM). When that stopped working, they had one more magic potion: the *negative-equity option ARM*. These innovations were responses to the incentives that arise naturally in an environment of rising home price expectations. But housing expenditures in the United States, and in most of the developed world, have historically accounted for about 30% of household income. If housing prices double in a seven-year period without a commensurate increase in income, eventually something has to give. The price decline started in 2006, and with it all the policies designed to fulfill the American dream turned into unintended nightmares. Trillions of dollars of mortgages had been written to buyers with slender equity, and when delinquencies and defaults started, the borrowers' risk was limited to their small down payments. Hence, the lion's leveraged share of the risk was transmitted directly into the financial system. Uncertainty about which banks holding the securities would fail impaired the credit-intermediation capacity of the financial system, and its subsequent collapse abruptly ended the fine performance of the broader economy. As straightforward as this story is, analyzing each step more closely yields parallels to the Roaring Twenties—and the Great Depression.

### 2.11.3.2 Lower Lending Standards: Subprime Mortgages

The percentage of new lower-quality subprime mortgages rose from the historical 8% or lower range to approximately 20% from 2004 to 2006, with much higher ratios in the hotter markets. A high percentage of these subprime mortgages, over 90% in 2006, for example, were ARMs. These two changes were part of a broader trend of lowered lending standards and higher-risk mortgage products. Further, US households had become increasingly indebted, with the average ratio of debt to disposable personal income rising from 77% in 1990 to 127% at the end of 2007, most of this increase mortgage-related.

In the years leading up to the crisis, the attitudes of lenders changed dramatically. Lenders offered more and more loans to higher-risk borrowers, including undocumented immigrants. Lending standards particularly deteriorated in 2004–2007, as the *government-sponsored enterprises* (GSEs) market share declined and private securitizers accounted for more than half of mortgage securitizations.

In addition to considering higher-risk borrowers, lenders offered increasingly risky loan options and borrowing incentives. In 2005, the median down payment for first-time home buyers was 2%, with 43% of those buyers making no down payment whatsoever. Four out of ten first-time buyers used no-



**Fig. 2.26** Percentage of zero down payment mortgages in California. (Adapted from: California Association of Realtors; <http://www.doctorhousingbubble.com>; also: <http://ivan-realestatesecrets.blogspot.com/2009/07/2008-2009-state-of-california-housing.html>)

down-payment mortgages in 2005 and 2006, according to surveys by the National Association of Realtors. Figure 2.26 shows percentages of zero down payment mortgages in California. By late 2007, such mortgages were no longer available.

Mortgage qualification guidelines began to change. At first, the *Stated-Income-Verified Assets* (SIVA) loans came out. Proof of income was no longer needed. Borrowers just needed to “state” their income and show that they had money in the bank. Then, the *No-Income-Verified Assets* (NIVA) loans came out. The lender no longer required proof of employment. Borrowers just needed to show proof of money in their bank accounts. The qualification guidelines were relaxed more and more in order to generate more mortgages and more securities. This led to the creation of NINA. NINA is an abbreviation of *No Income–No Assets* (sometimes referred to as Ninja loans). Basically, NINA loans are official loan products and let you borrow money without having to prove or even state any owned assets. All that was required for a mortgage was a credit score. Another example is the interest-only ARM, which allows the homeowner to just pay the interest (not principal) during an initial period. Still another is a “payment option” loan, in which the homeowner can pay a variable amount, but any interest not paid is added to the principal. Nearly one in ten mortgage borrowers in 2005 and 2006 took out these “option ARM” loans, which meant they could choose to make payments so low that their mortgage balances rose every month. An estimated one-third of ARMs originated between 2004 and 2006 had “teaser” rates be-



low 4%, which then increased significantly after some initial period, as much as doubling the monthly payment. The proportion of subprime ARM loans made to people with credit scores high enough to qualify for conventional mortgages with better terms increased from 41% in 2000 to 61% by 2006. However, there are many factors other than credit score that affect lending. In addition, mortgage brokers in some cases received incentives from lenders to offer subprime ARMs even to those with credit ratings that merited a conforming (i.e., nonsubprime) loan. Mortgage-underwriting standards declined precipitously during the boom period. The use of automated loan approvals allowed loans to be made without appropriate review and documentation. In 2007, 40% of all subprime loans resulted from automated underwriting. The chairman of the Mortgage Bankers Association claimed that mortgage brokers, while profiting from the home loan boom, did not do enough to examine whether borrowers could repay (a gross understatement). Mortgage fraud by lenders and borrowers increased enormously. The Financial Crisis Inquiry Commission reported in January 2011 that many mortgage lenders took eager borrowers' qualifications on faith, often with a "willful disregard" for a borrower's ability to pay. Nearly 25% of all mortgages made in the first half of 2005 were "interest-only" loans. During the same year, 68% of "option ARM" loans originated by Countrywide Financial and Washington Mutual had low or no documentation requirements.

So why did lending standards decline? At least one study has suggested that the decline in standards was driven by a shift of mortgage securitization from a tightly controlled duopoly to a competitive market in which mortgage originators held the most sway. The worst mortgage vintage years coincided with the periods during which GSEs were at their weakest, and mortgage originators and private label securitizers were at their strongest. This is one more indication that the Republican mantra "Leave it to private industry" and the shift away from government regulation do not improve efficiency but merely provide license for greedy entrepreneurs to spoil otherwise well-behaved markets:

The boom in mortgage lending, including subprime lending, was also driven by a fast expansion of non-bank independent mortgage originators which despite their smaller share (around 25% in 2002) in the market have contributed to around 50% of the increase in mortgage credit between 2003 and 2005.<sup>117</sup>

Why was there a market for these low-quality private label securitizations? In a Peabody Award-winning program, NPR correspondents argued that a "Giant

<sup>117</sup> <http://www.stat.unc.edu/faculty/cji/fys/2012/Subprime%20mortgage%20crisis.pdf>.

Pool of Money” (represented by US\$ 70 trillion in worldwide fixed-income investments) sought higher yields than those offered by US Treasury bonds early in the decade. Further, this pool of money had roughly doubled in size from 2000 to 2007, yet the supply of relatively safe, income-generating investments had not grown as fast. Investment banks on Wall Street answered this demand with financial innovation such as the *mortgage-backed security* (MBS) and *collateralized debt obligation* (CDO), which were assigned safe ratings by the credit rating agencies. In effect, Wall Street connected this pool of money to the mortgage market in the USA, with enormous fees accruing to those throughout the mortgage supply chain, from the mortgage broker selling the loans to small banks that funded the brokers, to the giant investment banks behind them. By approximately 2003, the supply of mortgages originated at traditional lending standards had been exhausted. However, continued strong demand for MBS and CDO began to drive down lending standards, as long as mortgages could still be sold along the supply chain. Eventually, this speculative bubble proved unsustainable. NPR described it this way: The problem was that even though housing prices were going through the roof, people were not making any more money. From 2000 to 2007, the median household income stayed flat. And so the more prices rose, the more tenuous the whole thing became. No matter how lax lending standards got, no matter how many exotic mortgage products were created to shoehorn people into homes they could not possibly afford, no matter what the mortgage machine tried, the people just could not swing it. By late 2006, the average home cost nearly four times what the average family made. Historically, it was between two and three times. And mortgage lenders noticed something that they had almost never seen before. People would close on a house, sign all the mortgage papers, and then default on their very first payment. No loss of a job, no medical emergency, they were underwater before they even started. And although no one could really hear it, that was probably the moment when one of the biggest speculative bubbles in American history popped.

What this illustrates once again is that low interest rates drive money out of savings and fixed investments, and that money (like water under pressure) has to flow somewhere. The only two reservoirs that can hold this gushing money supply are stocks and real estate. While the conventional wisdom is that low interest rates spur economic development, this is not true. Low interest rates primarily just produce bubbles.

### 2.11.3.3 Home Sales for Investment: Not Occupancy

Speculative borrowing in residential real estate has been cited as a contributing factor to the subprime mortgage crisis. During 2006, 22 % of homes pur-

chased (1.65 million units) were for investment purposes, with an additional 14% (1.07 million units) purchased as vacation homes. During 2005, these figures were 28 and 12%, respectively. In other words, a record level of nearly 40% of homes purchased were not intended as primary residences. David Lereah, NAR's chief economist at the time, stated that the 2006 decline in investment buying was expected: "Speculators left the market in 2006, which caused investment sales to fall much faster than the primary market."

Housing prices nearly doubled between 2000 and 2006, a vastly different trend from the historical appreciation at roughly the rate of inflation. While homes had not traditionally been treated as investments subject to speculation, this behavior changed during the housing boom. Media widely reported condominiums being purchased while under construction, then being "flipped" (sold) for a profit without the seller ever having lived in them.

#### 2.11.3.4 Securitization of Mortgages

In the twentieth century, defaults on mortgages were rare, mainly because banks required a significant down payment, and house prices were relatively stable:

Federally chartered financial institutions such as Fannie Mae had been selling mortgage-backed securities to investors for decades. Those securities gave buyers higher yields than they could get on US Treasuries but also proved to be relatively secure investments. Even if one or two homeowners defaulted on their mortgages they represented a small fraction of the total mortgages packaged in such securities. And with ever-rising real estate values the chances were good that the full value of a defaulted loan could be recovered.<sup>118</sup>

Prior to the 1980s, the typical householder would take out a mortgage with his local bank and if a temporary problem developed in making payments, he could go down to his local bank branch and work out a solution with them on a person-to-person basis. Since the 1990s, the more common thing has been that the local bank branch will transmit your mortgage to the bank's central office, where they package up your mortgage with many others, and sell them to a much larger bank or mortgage investor. When you want to discuss this mortgage with the new owner of the mortgage, you can call them on the telephone and talk to a computer via a multitude of successive "press one" and "press two" actions, but it is difficult to gain access to talk to a human being, and it is impossible to talk to a local person—in person. As time went

---

<sup>118</sup> Lilly (2007).

by in the 1990s and particularly in the 2000s, these packages of mortgages were converted into investment securities for trading, since they had some of the vestiges of bonds, generating interest income, and they seemed to be safe because they were backed by collateral in the form of housing. As the refinance mania expanded in the 2000s, a huge number of mortgages were created and most of these ended up in these packaged pseudo-bonds. The quality of these securities in many cases was not very good for a number of reasons, including (1) the increasing number of precarious subprime mortgages that were involved, (2) the susceptibility of payments on many mortgages to any downturn in house prices, and (3) the difficulty in dealing with homeowners scattered across the country who became delinquent in payments or who defaulted.

The traditional mortgage model involved a bank originating a loan to the borrower/homeowner and retaining the credit (default) risk. Securitization is a process whereby loans or other income-generating assets are bundled to create bonds that can be sold to investors. The modern version of US mortgage securitization started in the 1980s, as GSEs began to pool relatively safe conventional conforming mortgages, sell bonds to investors, and guarantee those bonds against default on the underlying mortgages. A riskier version of securitization also developed in which private banks pooled nonconforming mortgages and generally did not guarantee the bonds against default of the underlying mortgages. In other words, GSE securitization transferred only interest rate risk to investors, whereas private label (investment bank or commercial bank) securitization transferred both interest rate risk and default risk. With the advent of securitization, the traditional model gave way to the “originate to distribute” model, in which banks essentially sell the mortgages and distribute credit risk to investors through MBSs and CDOs. The sale of default risk to investors created a moral hazard in which an increased focus on processing mortgage transactions was incentivized but ensuring their credit quality was not.

In the mid-2000s, GSE securitization declined dramatically as a share of overall securitization, while private label securitization dramatically increased. Most of the growth in private label securitization was through high-risk subprime and Alt-A mortgages. As private securitization gained market share and the GSEs retreated, mortgage quality declined dramatically. The worst performing mortgages were securitized by the private banks, whereas GSE mortgages continued to perform better than the rest of the market, including mortgages that were not securitized and were instead held in portfolio. In other words, when the government packaged mortgages into securities, they did it in a more responsible manner, but when private companies did it, they did it in an irresponsible manner. Since they transferred the risk to investors

who bought securities based on mortgages, they had no incentive to assure that the mortgages were sound.

Many financial institutions, investment banks in particular, issued large amounts of debt during 2004–2007, and invested the proceeds in MBSs, essentially betting that house prices would continue to rise, and that households would continue to make their mortgage payments. Borrowing at a lower interest rate and investing the proceeds at a higher interest rate is a form of financial leverage. This is analogous to an individual taking out a second mortgage on his residence to invest in the stock market. This strategy proved profitable during the housing boom, but resulted in large losses when house prices began to decline and mortgages began to default. Beginning in 2007, financial institutions and individual investors holding MBS also suffered significant losses from mortgage payment defaults and the resulting decline in the value of MBS.

It was then proposed to “offer investors an even higher rate of return by packaging the mortgages of less creditworthy homebuyers who could not qualify for a standard mortgage but were willing to pay a higher interest rate to become homeowners.”<sup>119</sup> Thus, the biggest financial institutions in the USA began to purchase, package, and sell *structured investment vehicles* (SIVs).

These investment vehicles were offered at a time when real estate prices had risen very sharply and there was a serious risk of a bubble-bursting decline in home prices. Such instruments added fuel to the fire of seemingly ever-rising home valuations. In addition, as Lilly said, *diligence* was ignored in evaluating mortgage applications, and

...loan originators had little or no stake in whether applicants had the financial capacity to repay the mortgages for which they were applying. The more applications they approved the more money they were able to make (via loan fees).

After the Federal Reserve cut interest rates in a desperate attempt to stem the stock market collapse of 2000–2001:

...millions of homeowners refinanced and millions more found that low rates permitted them to enter the housing market for the first time. There was a huge expansion in the mortgage origination business but by 2004 the flow of new applications began to subside. Mortgage originators needed to find new markets if they were to continue to collect the fees that kept them in business. The only real option was to expand the market by turning to the so-called sub-

---

<sup>119</sup> Lilly (2007).

prime borrower—people whose financial history and current economic situation would have previously not permitted them to get a mortgage.<sup>120</sup>

Lilly asserted that even though it was known that

...the mortgage originators had no incentive to insure the creditworthiness of the new borrowers, it was less well understood that at least some of the Wall Street firms that packaged the sub-prime loans and sold them to unwitting investors were in much the same position.

Lilly quoted Allan Sloan, of *Fortune* magazine, who reviewed the evolution of a package of 8274 second-mortgage loans in the spring of 2006 by Goldman, Sachs & Co. This represented about 1% of the total value of the 916 residential mortgage-backed issues sold in 2006. However, it was, as Lilly said,

...clearly one of the worst. The average equity held by the homeowners<sup>121</sup> in this mortgage package was less than 1%. About 58% of the loans had no documentation or minimal documentation. No one knows whether these borrowers actually occupied the residences they were using as collateral, whether they were employed or whether they had any of the assets they told the loan originators they possessed.

Goldman Sachs purchased these mortgages and packaged them into something called Goldman Sachs Alternative Mortgage Product (GSAMP) Trust 2006-S3. They then divided the \$ 496 million in mortgages into 13 separate securities; three containing the “best quality” but lowest yield loans; seven containing the intermediate loans and the three containing the lowest quality but highest yielding loans. They then sold at least 12 and perhaps all of the 13 securities, which Sloan refers to as “financial toxic waste.” The default rate on these loans has been so high that all three of the lowest quality securities are totally worthless, four of the seven mid-level securities are worthless and one other is deteriorating rapidly. The ratings on the top-level securities have been reduced from AAA to BBB and as a result their value has declined markedly. To date, the losses to Goldman Sachs customers are probably in excess of \$ 300 million. But the real bombshell in Sloan’s story was not the shockingly poor quality of the products that were sold or the massive losses that were absorbed by hapless buyers. The real surprise is that Goldman Sachs not only absorbed none of the losses, but in fact profited handsomely from the demise of the securities that they were telling clients to invest in. How? Because another part of Goldman Sachs was heavily shorting these securities in their own portfolio at the same time they were recommending them for the portfolios of other institutions.

<sup>120</sup> Lilly (2007).

<sup>121</sup> Lilly put the word “homeowners” in quotes, possibly because their equity was so small that they could hardly be called owners, or possibly because many of them were speculators and did not live in the home.

### 2.11.3.5 Role of Derivatives in the Housing Collapse

GS argued that

...derivatives—specifically, credit-default swaps—were the linchpin of the housing-finance market. The collapse [of] AAA-rated securities in July 2007 led soon afterward to the collapse in the market for the loans written by many subprime lenders, and also to a collapse in the market for the structured securities into which these loans were gathered by investment banks. The vast regulation-exempt and publicly unregistered market for these derivatives was at the core of the mortgage-market expansion and its collapse.

A *credit default swap* (CDS) is a financial agreement whereby the seller of the CDS will compensate the buyer in the event of a loan default on a specific loan security. The buyer of the CDS pays a fee to the seller and, in exchange, receives a payoff if the loan defaults (usually the face value of the loan), and the seller of the CDS takes possession of the defaulted loan. However, anyone can purchase a CDS, even buyers who do not hold the loan instrument and who have no direct insurable interest in the loan. If there are more CDS contracts outstanding than bonds in existence, a protocol exists to hold a credit event auction; the payment received is usually substantially less than the face value of the loan:<sup>122</sup>

The credit-default-swap (CDS) market grew from \$ 631.5 billion in notional value in the first half of 2001 to over \$ 62.1 trillion in notional value in the second half of 2007. How did such a large market, with so much risk accumulated in it, remain so opaque? If these securities had been registered and summary exposures had been disclosed, the Fed and investors might have been able to better assess the risks from the mortgage market bubble. Summary disclosures of the exposures that A.I.G., Ambac, and MBIA had accumulated on credit default swaps would have alerted informed investors to the risks that these firms had undertaken.

Ten years before the crisis reached a critical stage, the Treasury, the Federal Reserve, and the S.E.C. had gone to great lengths to make sure that neither they nor the one federal agency that considered revisiting the exempt unregistered status of the CDS market—the *Commodity Futures Trading Commission* (C.F.T.C.)—would have the information that they needed to assess the risks of derivatives. On May 7, 1998, the C.F.T.C. issued a Concept Release to solicit input regarding potential prospective regulatory oversight of the derivatives markets, including markets for credit-default swaps.

---

<sup>122</sup> Stiglitz (2012).



GS pointed out that, remarkably, Treasury Secretary Robert Rubin, S.E.C. Chairman Arthur Levitt, Federal Reserve Board Chairman Alan Greenspan, and Deputy Secretary of the Treasury Lawrence Summers opposed this proposal because “the parties to these kinds of contract are largely sophisticated financial institutions that would appear to be eminently capable of protecting themselves from fraud and counterparty insolvencies.” As it turned out, many of the issues raised in the concept release ultimately proved to be at the heart of the problems with the derivatives market, which contributed to the spread of the riskiest subprime and ARM lending practices.

### 2.11.3.6 Credit Rating Agencies

Credit rating agencies have been under scrutiny for having given investment-grade ratings to MBSs based on risky subprime mortgage loans. These high ratings enabled these MBSs to be sold to investors, thereby financing the housing boom. Critics allege that the rating agencies suffered from conflicts of interest, since they were paid by investment banks and other firms that organize and sell structured securities to investors. After the collapse of the housing bubble, on December 3, 2008, the SEC approved measures to strengthen oversight of credit rating agencies, following a 10-month investigation that found “significant weaknesses in ratings practices,” including conflicts of interest. Between Q3 2007 and Q2 2008, rating agencies lowered the credit ratings on US\$ 1.9 trillion in MBSs. Financial institutions felt they had to lower the value of their MBSs and acquire additional capital so as to maintain capital ratios. If this involved the sale of new shares of stock, the value of the existing shares was reduced. Thus, ratings downgrades lowered the stock prices of many financial firms. The Financial Crisis Inquiry Commission reported in January 2011 that

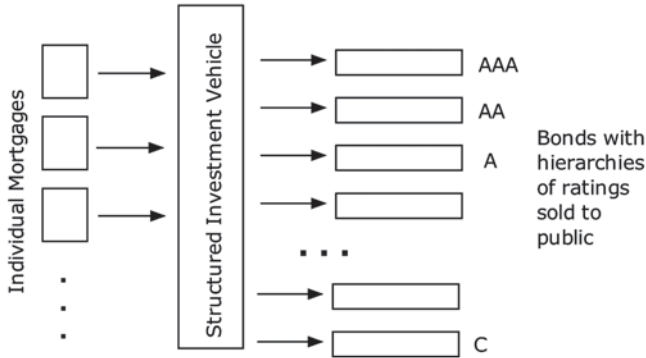
The three credit rating agencies were key enablers of the financial meltdown. The mortgage-related securities at the heart of the crisis could not have been marketed and sold without their seal of approval. Investors relied on them, often blindly. In some cases, they were obligated to use them, or regulatory capital standards were hinged on them. This crisis could not have happened without the rating agencies. Their ratings helped the market soar and their downgrades through 2007 and 2008 wreaked havoc across markets and firms.<sup>123</sup>

The report further stated that ratings were incorrect because of

---

<sup>123</sup> <http://fcic.law.stanford.edu/report/c>.





**Fig. 2.27** Mortgages packaged into a SIV that issues a hierarchy of bonds over a range of financial ratings

...flawed computer models, the pressure from financial firms that paid for the ratings, the relentless drive for market share, the lack of resources to do the job despite record profits, and the absence of meaningful public oversight.

Roger Lowenstein<sup>124</sup> provided a detailed review of the role of the ratings agencies in assigning financial ratings to the securities backed by mortgages. Almost all of the subprime mortgages ended up being pooled into mortgage-backed securities. The mortgages were sold to a “dummy” investment vehicle that received all the payments made by mortgages that it held, as shown in Fig. 2.27. The bonds with the highest ratings had first call on assets if enough mortgages defaulted that the SIV could not pay of bondholders with income from mortgage payments; these paid the lowest interest. The bonds at the bottom of the ratings ladder would be the first to lose value in such an event (these paid the highest interest) and as more mortgages failed, the level of failing bonds would propagate upward.

The ratings assigned to the bonds by the ratings agencies were extremely optimistic for several reasons:

1. The rating agencies were making huge profits from the high volume of SIVs and were motivated to maintain the flow of SIVs, which depended on good ratings to be successful.
2. If one rating agency did not provide sufficient ratings, the organizers of the SIV could “shop around” to seek a better rating from a competitor.
3. The ratings agencies seem to have had their heads in the sand and were blissfully unaware of the level of speculation going on, the lack of veracity

<sup>124</sup> Lowenstein (2008).

of data on borrowers, and the inadequate reviews of borrowers made by lending institutions. As a result, they used formulas and standards more appropriate to the pre-2000 era when house prices were more stable, and borrowers had to demonstrate to lenders their ability to make payments.

One major piece of stupidity was that the agencies tended to look only at the size of the first mortgage, but most borrowers also took out a second mortgage, so in effect they had no equity in the house.

As Lowenstein pointed out, the end result was that Moody's rating service had to downgrade more than 5000 SIVs in 2007, resulting in huge losses to investors.

Wall Street icon Henry Kaufman warned that the subprime problem is only part of a far larger problem in which giant financial conglomerates contribute to opaqueness in our financial markets. Kaufman argued that the Federal Reserve and US Treasury Department have failed to keep pace "with a series of fundamental structural changes that have transformed markets in recent decades."

As early 2008 wore on, the number of beleaguered institutions and the extent of their losses continued to grow. When Bear Stearns became insolvent, the Federal Reserve moved in to arrange a rescue. After all, the Fed is nothing if not loyal to its financial cronies.

### 2.11.3.7 Deregulation of Banks

It is abundantly clear that deregulation of banks was a prime cause of the real estate bubble and collapse, and furthermore, deregulation has been a major contributor to all the financial bubbles of the past few decades.

In 1982, Congress passed the Alternative Mortgage Transactions Parity Act (AMTPA), which allowed nonfederally chartered housing creditors to write ARMs. Among the new mortgage loan types created and gaining in popularity in the early 1980s were adjustable-rate, option adjustable-rate, balloon-payment, and interest-only mortgages. These new loan types are credited with replacing the long-standing practice of banks making conventional fixed-rate, amortizing mortgages. Among the criticisms of banking industry deregulation that contributed to the S&L crisis was that Congress failed to enact regulations that would have prevented exploitations by these loan types. Subsequent widespread abuses of predatory lending occurred with the use of ARMs. Approximately 90% of subprime mortgages issued in 2006 were ARMs.

The Glass-Steagall Act was enacted after the Great Depression. It separated commercial banks and investment banks, in part to avoid potential conflicts of interest between the lending activities of the former and rating activities of

the latter. Economist Joseph Stiglitz criticized the repeal of the Act. He called its repeal the “culmination of a \$ 300 million lobbying effort by the banking and financial services industries...spearheaded in Congress by Senator Phil Gramm.” He believes it contributed to this crisis because the risk-taking culture of investment banking dominated the more conservative commercial banking culture, leading to increased levels of risk-taking and leverage during the boom period. We have seen in several instances in this book that Phil Gramm was one of the worst senators that ever served in the US Senate, at least in recent times.

### 2.11.3.8 Government Policies to Promote Affordable Housing

A number of politicians, pundits, and financial industry-funded think tanks have claimed that government policies designed to promote affordable housing (AH) were an important cause of the financial crisis. One example is the American Enterprise Institute.<sup>125</sup> The fact that mortgage interest is deductible (as opposed to ordinary interest paid on personal loans) implies that during housing booms, homeowners can borrow against the inflated equity in their homes, deduct the interest on these loans (unlike with any other personal loans), and spend the money freely—until the boom collapses, and then they are underwater.

More importantly, the AH goals enacted in Title XIII of the Housing and Community Development Act of 1992 and its subsequent enforcement by the US Department of Housing and Urban Development (HUD) required Fannie Mae and Freddie Mac to meet percentage quotas of mortgages issued to low- and moderate-income (LMI) borrowers. Initially, the quotas were set at 30%,

but during the Clinton administration, HUD increased this quota to 42% in 1995 and 50% in 2000. HUD’s tightening continued in the George W. Bush administration so that by 2008 the main LMI goal was 56% and a special affordable sub-goal had been added requiring that 27% of the loans that GSEs acquired, be made to borrowers who were at or below 80% (and, in some cases, 60% of the median income in their communities.

The FCIC claimed,<sup>126</sup>

<sup>125</sup> <http://www.aei.org/outlook/economics/financial-services/housing-finance/free-fall-how-government-policies-brought-down-the-housing-market/>.

<sup>126</sup> Financial Crisis Inquiry Commission Report, <http://fcic.law.stanford.edu/report>.

We also studied at length how the Department of Housing and Urban Development's (HUD's) affordable housing goals for the GSEs affected their investment in risky mortgages. Based on the evidence and interviews with dozens of individuals involved in this subject area, we determined these goals only contributed marginally to Fannie's and Freddie's participation in those mortgages.

This claim seems hardly credible.

Jeff Holt claimed that relaxed standards for mortgage loans contributed to the bubble.<sup>127</sup> His views included:

Standards for mortgage loans were relaxed as a result of the following factors: new governmental policies aimed at fostering an increase in home-ownership rates among lower-income households, greater competition in the mortgage loan market, the increasing securitization of home mortgage debt, and the irrational exuberance that engulfed all parties involved in the mortgage lending process.

Standards for mortgage loans were fairly consistent in the decades prior to the development of the housing bubble. Most mortgages were 30-year fixed rate loans requiring a down payment of at least 20% or mortgage insurance if the 20% down payment requirement were not met. The borrowers also had to prove that their income was sufficient to ensure that the monthly mortgage payments would be manageable. Governmental policies have long encouraged home ownership, e.g., the tax deductibility of mortgage interest and real estate taxes. In 1997 the tax law was changed to permit homeowners to exclude from taxation a gain of up to \$ 500,000 from the sale of a home.

... In 1995 the Community Reinvestment Act was modified to compel banks to increase their mortgage lending to lower-income households. To meet the new requirements of the Community Reinvestment Act, many banks relaxed their mortgage lending standards.... Beginning in 1996 the Department of Housing and Urban Development began to increase the percentage of mortgage loans to lower-income households that Fannie and Freddie were required to hold in their portfolios. This caused Fannie and Freddie to relax the standards that mortgages had to meet to be classified as "conforming".... Down payment requirements and income requirements were reduced.

With the Internet came greater competition in the mortgage loan market. Home buyers were no longer limited to borrowing locally but could search the Internet for the mortgage provider who would offer the most favorable terms. The increased competition in the mortgage loan market is exemplified by the drop in mortgage fees. For example,...the average fee on a mortgage loan fell from around 1% of the amount of the loan in 1997 to less than.5% from 2002 to 2005.

---

<sup>127</sup> Holt (2009, pp. 120–129).

The greater competition in the mortgage industry contributed to relaxed mortgage standards.... The more conservative mortgage lenders either had to lower their standards or lose market share.

The increased securitization of home mortgage debt also contributed to relaxed mortgage standards.... The loan originator, who is now pursuing a practice of “originate to sell” as opposed to the traditional practice of “originate to hold,” has little incentive to worry about the quality of any single mortgage since the mortgage will soon be sold.... The credit rating agencies evaluated an issuance of mortgage-backed securities not based on the quality of each individual mortgage but based on historical mortgage default rates for similar mortgage pools. These historical default rates would become irrelevant in the event of an unprecedented increase in defaults. As irrational exuberance caused the housing market to overheat, lenders relaxed their mortgage standards even further.

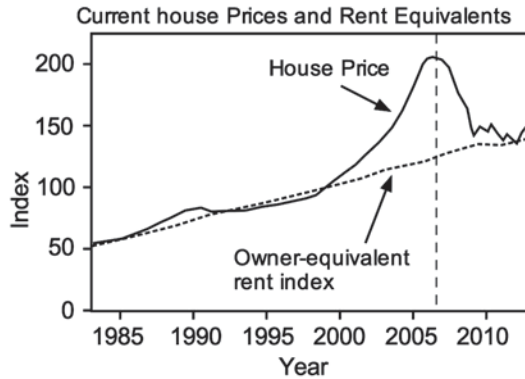
Stephen Gjerstad and Vernon L. Smith (GS)<sup>128</sup> commented on the housing bubble. GS argued that the Taxpayer Relief Act of 1997, “which for the first time exempted housing assets (up to \$ 500,000) from the capital-gains tax” the 1997 tax law, “favored houses over all other investments.” This “would have naturally led more capital to flow into the housing market, causing an increase in demand—and a takeoff in expectations of further increases in house prices.” While “the Taxpayer Relief Act helped to trigger the run-up in housing prices, a significant and sustained change in monetary policy, beginning in 2001, appears to have dramatically strengthened it.” It may not be widely recognized that from 1997 to 2001, the Case–Shiller ten-city composite index rose a rather incredible average rate of 7.2% per year. After the demise of the *dot.com* bubble,

...the Federal Reserve started to ratchet down the federal funds rate and by December 2001, the federal funds rate had been reduced to its lowest level since 1962. The average federal funds rates in 2003 and 2004 were lower than in any of the years since the Fed began reporting this rate in 1955.

The combined effect of the Taxpayer Relief Act and loose monetary policy as inflators of the housing bubble is revealed in the fact that the path of house prices from 1997 through 2005 is convex: House prices were increasing at an increasing rate. We find equally persuasive the fact that, during the expansion phases of the two earlier housing bubbles (1976–79 and 1986–89), the Fed was increasing the federal-funds rate, and those two bubbles were much milder than the current one. In short, when the Federal Reserve was “leaning against the wind,” the bubbles were far smaller than when, at the beginning of this century, monetary policy pumped credit into the economy.

---

<sup>128</sup> By permission from Gjerstad and Smith (2009).



**Fig. 2.28** Comparison of house prices with rental index (By permission from Gjerstad and Smith 2009, pp. 269–300)

GS discussed the reasons why the huge run-up in housing prices from 2001 to 2006 did not significantly affect the *Consumer Price Index* (CPI). “Starting in 1983, the Bureau of Labor Statistics began to use the price of rentals in estimating the housing portion of the CPI for homeowner-occupied units.” Between 1983 and 1996, the ratio of house prices to rental equivalents remained within a limited range, so the CPI provided a reasonable allowance for the contribution of housing to overall inflation during this 14-year period. Between 1999 and 2006, however, the ratio of house prices to equivalent rentals increased by about 60%, so that home asset price increases were effectively excluded from the CPI (see Fig. 2.28). While the Case–Shiller ten-city index increased by 151% between January 1999 and June 2006, the CPI measured an accumulated increase of a mere 25%. GS claimed that the Federal Reserve missed the bubble at least partly, because home price increases were not visible in the CPI.

In this case, the argument given by GS in defense of the Fed seems very weak, because one need not be a slave to indices when common sense dictates that a seemingly *perpetual money-making machine* stares one in the face.

GS went on to point out,

Even after the Fed began to raise the federal-funds rate in May 2004, the housing bubble grew for two more years, due, we would argue, to self-reinforcing expectations of rising resale prices and to overgenerous mortgage financing in the form of low down payments, interest-only loans, negative-equity loans, and adjustable-rate mortgages (ARMs), enabled by the Fed’s loose-money policy. Surely such financing unintentionally encouraged momentum buying. But the liquidity that sustained subprime and ARM lending was about to evaporate.

### 2.11.3.9 Mortgage Fraud

It has been claimed<sup>129</sup> that in many cases, speculators lied on loan applications, saying they intended to live in the homes in order to obtain more favorable loan terms, and that roughly 20% of mortgage fraud involved “occupancy fraud,” or borrowers falsely claiming they intended to live in a property. Borrowers who planned to live in a home could often purchase with no money down. These borrowers are much more likely to walk away from a mortgage and default if property values decrease, than homeowners who live in a house. Thus, many mortgages were more risky than agencies thought, and defaults piled up faster than expected when property values turned down in 2007. The article claimed that much of the occupancy fraud was concentrated in markets such as Florida, Nevada, and Arizona, where prices were appreciating by double-digit percentages annually, and in Las Vegas, as many as 60% of the foreclosures in 2007 involved nonowner-occupied homes.

An article on mortgage fraud at AFG Financial<sup>130</sup> provided the following:

Property locators were paid to find suitable properties for their scams, usually homes owned by people in financial distress. Other paid recruiters found what have become known as “straw buyers” with good credit ratings to stand in for the real buyers. They were told that they would be well paid, often receiving a small upfront fee, and that they would not have to make any mortgage payments.

Forgeries and fraudulent documents were used to enhance the straw buyer’s creditworthiness. Forged W-2 s and bank statements were created to inflate the straw buyer’s income and assets so the maximum amount of money could be borrowed. Corrupt appraisers provided inflated appraisals for the property, much higher than its market value. Bank employees who were part of the conspiracy verified that the bank statements were accurate. Co-conspirators employed at lenders such as Countrywide and New Century Mortgage made sure that loan applications were processed quickly without any due diligence. At the sale closing, lawyers were brought in to make sure that everything went smoothly, that no one asked any questions, and that the bulk of the sale proceeds went to the AFG principals. Title company principals made sure that funds that were supposed to go to the sellers ended up in a shell account controlled by the AFG owners. The conspirators were so brazen that in one transaction, they created a sham appraisal with a stated value of over \$ 500,000 for a 2-family home that was, in reality, only a vacant lot.

---

<sup>129</sup> Wall Street Journal (February 6, 2008) [http://online.wsj.com/article/SB120225852189145889.html?mod=todays\\_us\\_marketplace](http://online.wsj.com/article/SB120225852189145889.html?mod=todays_us_marketplace).

<sup>130</sup> Jurov, Keith Here’s How Widespread Mortgage Fraud Created The Housing Bubble. <http://www.businessinsider.com/how-widespread-mortgage-fraud-toppled-the-housing-bubble-2010-5>

The net result of their fraudulent schemes was that the AFG principals walked away with most of the cash that was supposed to go to the sellers, nearly \$ 12 million. Since they made only a few loan payments at most, the houses went quickly into default and then foreclosure leaving the straw buyers with ruined credit and the banks with worthless mortgages. Similar fraudulent rings could be found in nearly every state during the bubble years.

In September 2005, a firm named the Prieston Group which insured against mortgage fraud announced that in the first half of that year, the most prevalent type of mortgage fraud—53 % of all claims—was something called “occupancy fraud.” This fraud involved an investor who falsely claimed on the mortgage application that he/she intended to occupy the property as a primary residence.

Speculators had good reason to lie about intending to occupy a purchased property. Because owner-occupied houses had lower rates of default than investor-owned properties, lenders would give owner occupants an interest rate that could be as much as 40 % lower than what they gave an investor. They would also require a smaller down payment as well as lower cash reserves. With stated income loans that did not require documentation of a borrower’s income having become so widespread by 2005, the temptation of a speculator to lie on the application to obtain mortgages for one or more properties became irresistible.

The Prieston report claimed that based on its experience, as much as 10 % of all mortgage applications involved fraud and that 25 % of all foreclosures involved some kind of application misrepresentation. It turns out that these estimates may be much too low.

### 2.11.3.10 Role of the Federal Reserve

There is considerable evidence that the head of the Federal Reserve, Alan Greenspan, actually believed that financial bubbles were good for the economy, and that fueling bubbles was an important role of the Fed. It seems that he believed that wealth could be (and should be) created by bidding up paper assets, and the Federal Reserve was chartered to encourage this process. In any event, even if he had doubts, it is clear that he thought it was politically dangerous to interfere with expanding bubbles.

When the *dot.com* stock market bubble deflated in the spring of 2000, there was a short hiatus in the price rise of housing. Then the Federal Reserve rushed in to try to preserve the stock market bubble, or at least mitigate the depth of the ensuing debacle. It seems likely that the Federal Reserve had a primary goal to prop up ballooning stock markets, and was alarmed at the steep drop in the stock indices, particularly the NASDAQ in 2000–2001. The Federal Reserve believed that it had to act. The federal funds rate, which



had wavered between 5 and 6% from 1994 to March 2001, was successively reduced to 4% in May 2001, to 3% in September 2001, to 2% in November 2001, and as low as 1.25% and even 1.0% in 2002 and 2003. While the federal funds rate was later raised back to the 5% range by 2006, interest rates were extremely low from 2001 through 2004, and fairly low in 2005.

Almost every action of the Federal Reserve has had unintended consequences. It seems unlikely that the Fed desired to create a real estate bubble in America, but in case that was their aim, they succeeded handsomely. With the preponderance of existing mortgages at higher interest rates than the rates that prevailed for new mortgages in banks in the aftermath of interest rate reductions of 2001–2003, millions of households refinanced their mortgages during this period. In doing this, many took advantage of the fact that their monthly payments would not increase if they raised the principal amount on their mortgages at the lower interest rate. Others raised the principal amount even more, using now fashionable ARMs with their “teaser” low initial interest rates.

While classical economists may think that lowering interest rates directly stimulates the economy, it seems likely that what actually happened in the early 2000s was that the lowered interest rates stimulated expansion of a real estate bubble, which allowed households to take cash out of their refinanced mortgages, and that was the stimulus for the economy from 2001 onward. Many households were willing to pay higher prices for residential housing because the monthly payments were manageable with the lower interest rates (although the piper would one day have to be paid on ARMs).

In this culture, where runout cost is immaterial and only monthly payments seem to be relevant, as interest rates dropped, more people were able to afford the monthly payments on more expensive houses. The demand for houses grew, and as a consequence, prices began to rise with gathering momentum.

In 2002, economist Paul Krugman (who would go on to win a Nobel Prize in 2008) advised that the Fed was “creating a housing bubble to replace the Nasdaq bubble.” In his view, this would allow “soaring household spending to offset moribund business investment.” Apparently, he believed that a housing bubble would be a good thing! (However, in 2005, Krugman began warning that the housing bubble was dangerous.)<sup>131</sup>

During the heyday of the *dot.com* stock market bubble, from about 1997 to early 2000, there was a pervasive feeling (and an induced actuality) of wealth among those who invested in the stock market. This led investors to be willing to invest in more elaborate housing, and this likely contributed to

<sup>131</sup> [http://www.huffingtonpost.com/2013/04/19/paul-krugman\\_0\\_n\\_3118069.html](http://www.huffingtonpost.com/2013/04/19/paul-krugman_0_n_3118069.html).

rising house prices each year from 1997 to 2001. The Case–Shiller composite housing index increased from 78 in January 1997 to 115 in January, 2001—an increase of 47% in four years. However, 1997 house prices were slightly depressed.

McDonald and Stokes (2011)<sup>132</sup> concluded “the housing bubble was primarily caused by the interest rate policy of the Federal Reserve in the period 2002–2007 that pushed down the federal funds rate and kept it artificially low.”

In a rather incredible piece of convoluted reasoning, the *Wall Street Journal*, that bastion of reactionary thinking, published an article: “Don’t Blame Greenspan.”<sup>133</sup> Citing a previous article by Greenspan: “The Fed Didn’t Cause the Housing Bubble (3/11/9)” the argument went that an increase in saving, not an increase in the money supply, caused interest rates to fall. This argument is exactly contrary to reality. As interest rates came down, money in fixed income accounts migrated into housing. Period; end of argument. See Fig. 1.28.

Holt (2009)<sup>134</sup> discussed the primary causes of the housing bubble and the resulting credit crisis. He argued that there were “four primary causes of the housing bubble—low mortgage interest rates, low short-term interest rates, relaxed standards for mortgage loans, and irrational exuberance.” He concluded: “the combination of these factors caused the housing bubble to be more extreme and the resulting credit crisis to be more severe.” Holt elaborated on actions of the Fed:

*Low mortgage interest rates.*

Mortgage interest rates in the U.S. peaked at 18% in 1982, as the Federal Reserve drove interest rates skyward in a successful attempt to squeeze inflation out of the economy. Mortgage interest rates generally fell over the next twenty years, with the rate on a 30-year fixed mortgage falling below 6% late in 2002. The rate stayed below 6% most of the time through 2005.... Mortgage interest rates were falling despite the low savings rate in the U.S. because of an influx of saving entering the U.S. from other countries.

What is interesting is that subsequent to the bust of the housing bubble, the Fed pushed mortgage rates down to even lower levels in the 3–4% range, and it seems likely that a new housing bubble is therefore emerging in 2014.

*Low short-term interest rates.*

<sup>132</sup> McDonald and Stokes (2011).

<sup>133</sup> <http://online.wsj.com/article/SB123811225716453243.html>.

<sup>134</sup> Holt (2009).

From 2002 to 2004, the Federal Reserve pushed the federal funds rate down to historically low levels in an attempt to strengthen the recovery from the 2001 recession.... Over the course of 2001, the Federal Reserve lowered the federal funds rate eleven times, from 6.50 % to 1.75 percent.... The Fed continued its low interest rate policy, lowering the federal funds rate to 1.25 % in November of 2002 and to 1.00 % in June of 2003. The Fed began gradually increasing the rate in June of 2004, but the rate remained at 2.00 % or lower for more than three years.

The low short-term interest rates contributed to the housing bubble in two primary ways. First, the low short-term interest rates encouraged the use of adjustable rate mortgages (ARMs).... As the housing market heated up, mortgage lenders became more creative.... With an “option” ARM, the borrower could choose to make payments of interest only,...or could choose to make payments of only a portion of the interest due (thus increasing the balance outstanding on the loan each month). The second way that low short-term interest rates contributed to the housing bubble was by encouraging leveraging (investing with borrowed money). With short term interest rates extremely low, investors could increase their returns by borrowing at low short-term interest rates and investing in higher yielding long-term investments, such as mortgage-backed securities.... The practice of leveraging increased the financing available for mortgage lending and thus contributed to rising home prices. When the housing bubble eventually burst and home prices fell, the impact of the bursting of the housing bubble was increased by the degree of leverage in the economy.

The Federal Reserve also encouraged the bubble by virtue of the “Greenspan Put”—“The promise that the central bank will prevent a financial crisis.... This phrase was coined after the 1998 collapse of LTCM when it was believed that the then chairman of the Federal Reserve Board, Alan Greenspan would lower interest rates whenever necessary to preserve stability capital markets forgoing price stability. Because this appeared to guarantee an ‘orderly’ exit of sellers, he was criticized because the moral hazard of such a policy would encourage excessive risk taking, thereby contributing to a boom.”<sup>135</sup>

### 2.11.3.11 Irrational Exuberance

According to Jeff Holt,<sup>136</sup>

irrational exuberance played a key role in the housing bubble.... All the participants who contributed to the housing bubble (government regulators,

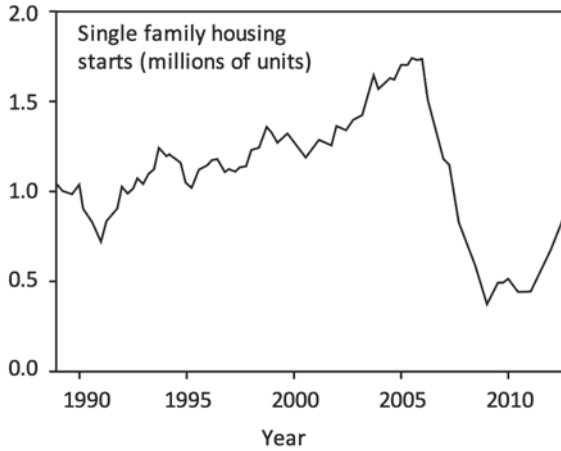
---

<sup>135</sup> White (2014).

<sup>136</sup> Holt (2009).

mortgage lenders, investment bankers, credit rating agencies, foreign investors, insurance companies, and home buyers) acted on the assumption that home prices would continue to rise. For example, the chief economist of Freddie Mac, was quoted as saying, “I don’t foresee any national decline in home price values. Freddie Mac’s analysis of single family houses over the last half century hasn’t shown a single year when the national average housing price has gone down.” Since home prices had not fallen nationwide in any single year since the Great Depression, most people assumed that they would not fall. This almost universal assumption of rising home prices led the participants who contributed to the housing bubble to make the decisions that created the bubble. Government regulators felt no need to try to control rising home prices, which they did not recognize [or did not choose to recognize] as a bubble. Mortgage lenders continued to make increasing numbers of subprime mortgages and adjustable-rate mortgages. These mortgages would continue to have low default rates if home prices kept rising. Investment bankers continued to issue highly leveraged mortgage-backed securities. These securities would continue to perform well if home prices kept rising. Credit rating agencies continued to give AAA ratings to securities backed by subprime, adjustable-rate mortgages. These ratings, again, would prove to be accurate if home prices kept rising. Foreign investors continued to pour billions of dollars into highly rated mortgage-backed securities. These securities also would prove to be deserving of their high ratings [ONLY] if home prices kept rising. Insurance companies continued to sell credit default swaps (a type of insurance contract) to investors in mortgage-backed securities. The insurance companies would face little liability on these contracts if home prices kept rising. Home buyers continued to purchase homes (often for speculative purposes) even though the monthly payments would eventually prove unmanageable. They assumed that they would be able to “flip” the home for a profit or refinance the loan when the adjustable rate increased. This too would work if home prices kept rising.

Actually, home prices kept rising for a long time. Warnings of a housing bubble were issued as early as 2002. By the 1st quarter of 2003, home prices had risen by about 59 % from the 1st quarter of 1997. Yet it would not have been wise for the average homeowner to bail out of the housing market at this point to avoid being caught up in the housing bubble. For example, if the average homeowner had sold his or her home in the 1st quarter of 2003, for fear of the housing bubble bursting, he or she would have sold it for 28 % less than he or she could have received in the 2nd quarter of 2007, one year after home prices peaked. The S&P/Case-Shiller Index was at 130.48 in the 1st quarter of 2003 and was at 183.03 in the 2nd quarter of 2007. [*This discussion provides a good example of why bubbles power up so high. Long after asset prices seem to have risen beyond reasonable expectations, where “reasonable” people bail out, the bubble keeps expanding at an ever more rapid rate and those who sold out at “reasonable” levels get left way behind. The more rapidly a bubble is rising, the more likely the bubble is near the end of its expansion.*]



**Fig. 2.29** Single family housing starts in the USA. (National Assn. of Homebuilders, <http://www.nahb.org/generic.aspx?genericContentID=45409>)

Holt went on to say,

The irrational exuberance that occurs during price bubbles is hard to recognize, hard to avoid, and not necessarily advantageous to avoid. [*I do not think the existence of the bubble is hard to recognize. It is the timing of the bubble that is difficult to discern. How are we from the top?*] Housing was a good investment up until just before the peak of the housing bubble. Likewise, stocks were a good investment up until just before the *dot.com* bubble burst in 2000. For example, at the time Alan Greenspan made his “irrational exuberance” comment, the Dow Jones Industrial Average had risen by an incredible 364% over the previous nine years and stood at 6437.10. However, this would not have been a good time for an investor to bail out of the stock market. The DJIA would increase by another 75% over the next three years.

The number of real estate licenses in California grew from 305,000 in early 2002 to 526,000 in early 2007.<sup>137</sup> By 2007, 1 out of every 50 adults in California had a real estate license!

Builders responded to this frenzy in the real estate market by building many more homes—often to be sold via shaky mortgages. Figure 2.29 shows the number of new housing units built in the USA starting in 2000. A great proportion of the increase was concentrated into “hot” areas.

The impact of the real estate bubble on the economy in the period 2002–2006 was significant. Whereas the contribution of the housing industry to job creation was typically about 10% from 1970 through 2000 (about 10% of

<sup>137</sup> Dr. Housing Bubble, <http://www.doctorhousingbubble.com>.

new jobs), the contribution of the housing industry to job creation jumped up to 30% for the period 2000–2006.<sup>138</sup>

### 2.11.3.12 Residences as ATMs

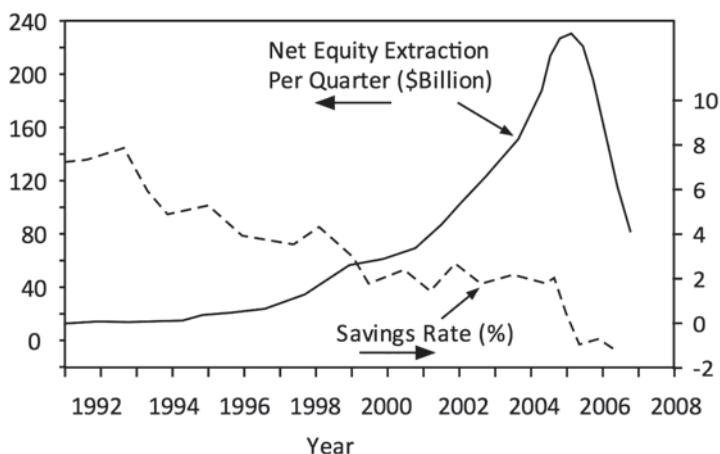
As house prices inflated, households withdrew cash from their houses in three ways: (1) by selling their houses at inflated prices, (2) by refinancing their mortgages at higher levels of principal, and (3) by acquiring “line of credit” loans in addition to their mortgage(s) using their houses as collateral. The cash that they took out of refinancing was plowed back into the economy, typically in the form of home improvements, personal consumption expenditures (PCE)—such as spending on vehicles, other consumer goods, vacations, education, and medical services—and also to pay off other forms of debt that had nontax-deductible interest. This provided a significant stimulus to the economy. The data on just how much of this took place are somewhat contradictory, but it is clear that the economy was greatly enhanced by this influx of cash.

Greenspan and Kennedy (2007)<sup>139</sup> discussed extraction of funds by refinancing a mortgage at a higher level as house prices increase. From the vantage point of year 2014, looking backwards, we can regard large-scale extraction of funds by refinancing in the pre-2007 era as merely part of a bubble mania that was bound to end in catastrophe. However, Greenspan, who clearly believed that permanent wealth could be created by simply bidding up paper assets (stocks and real estate), seems to have discussed extraction of wealth by refinance during the housing bubble as a good thing for the economy. He called this the “traditional wealth effect.” While Greenspan and Kennedy made no overt value judgments, the tone of the paper seems to echo Greenspan’s philosophy that deriving wealth from rapidly rising housing prices is both a legitimate and important part of wealth creation in our economy. Some of the data reported by Greenspan and Kennedy are shown in Fig. 2.30. At the peak in 2005, almost a trillion dollars per year was extracted from home sales and refinancing. The accumulated equity extraction from 1997 through 2007 according to Fig. 2.30 was roughly four trillion dollars. As funds were drawn out of residences, personal savings plummeted and actually went negative.

The average American’s savings rate (as percentage of disposable income) averaged about 10% from 1950 to 1985. However, as the stock market bubble expanded in the 1980s and 1990s, the perceived need to save was reduced

<sup>138</sup> Dr. Housing Bubble, loc cit.

<sup>139</sup> Greenspan and Kennedy (2007).



**Fig. 2.30** Extraction of equity from residence and personal savings (*smoothed curves*). (Greenspan and Kennedy 2007)

and the savings rate plummeted, dropping to about 5% in 1993, 2% between 2000 and 2004, and turning negative in 2005.<sup>140</sup>

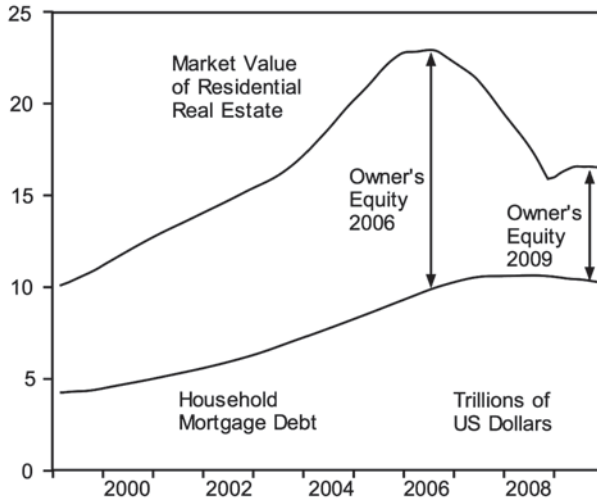
By the end of 2006, household real estate assets totaled about US\$ 20.6 trillion dollars, and with mortgage liabilities totaling about US\$ 9.8 trillion, household net real estate wealth totaled a little less than US\$ 11 trillion. This US\$ 11 trillion of net wealth represented about a 50% increase from 2000.

Thus, about US\$ 5.5 trillion of wealth was created out of thin air in 6 years—merely by bidding up the price of housing.<sup>141</sup>

The rise and fall of the paper value of US residential real estate is traced out in Fig. 2.31. The value of US residential real estate on paper increased from about US\$ 10 trillion in 1999 to about US\$ 23 trillion in 2006, an increase in paper wealth of US\$ 13 trillion created out of thin air. By 2006, owner's equity had risen from US\$ 6 trillion in 1999 to around US\$ 13 trillion. After the collapse of the market, the paper value of US residential real estate dropped to about US\$ 16 trillion in 2009, and owner's equity dropped to back about US\$ 6 trillion.

<sup>140</sup> Steindel (2007).

<sup>141</sup> Poole (2007).



**Fig. 2.31** The rise and fall of the paper value of US residential real estate during and after the housing boom of 2002–2007. (Adapted from Poole 2007)

#### 2.11.4 The Punctured Bubble

GS described how rapidly the housing bubble popped. Figure 2.23 illustrates this effect for Los Angeles:

By the end of 2008, 1.9 million mortgages in California—29.5 % of that state’s outstanding mortgages—had negative equity; it was even worse in Arizona (31.8 %), Florida (30.3 %), Michigan (40 %), and Nevada (55.1 %). When housing prices turned down, many borrowers with low income and few assets other than their home—which was often purchased with an adjustable-rate mortgage and no down payment—lost their occupancy rights. These were the households that public policies encouraging subprime lending had been intended most specifically to help.

As we have shown, house prices topped out in late 2006 and early 2007, and accelerated downward in late 2007 and 2008. The drop from the 2007 peak was 24 % in less than a year. This was the inevitable beginning of the end of the bubble. As house prices began to accelerate downward, we were treated to the usual reassuring comments by real estate organizations and banks. However, there was too much air in the balloon, and that air had to be released.

As we pointed out earlier in this book, a property of mathematics is that when a commodity’s price increases by 100 %, it needs only to drop by 50 % to return to its original price. Thus, if a house starts off at, say, US\$ 300,000 and increases by 100 % to US\$ 600,000, it only needs to drop by 50 % to



return to US\$ 300,000. A house that goes up 200 % in price only needs to drop by 67 % to return to its starting price.

During the expansionary period of the bubble (2002–2007):

- A frenzy seems to have gripped the banking industry to market the greatest number of mortgages regardless of the generosity of the terms or the ability of the borrower to make future payments. Many of these mortgages were “subprime” to a greater or lesser degree.
- With the passage of time, as more and more of those with good credit had already purchased or refinanced, the banking and mortgage industry and builders turned to those with lesser credit ratings.
- While these mortgages were being marketed, profits to banks soared. Almost all attention was on short-term profits from up-front loan fees, while longer-term liabilities were ignored. Bank stocks rose.
- There was a huge expansion in MBSs that were purchased by many leading banks and investment institutions.
- Some of these securities were insured by firms that insure bonds. It is not clear whether these insurance firms understood what they were insuring. Furthermore, in many cases, the insurers did not have sufficient assets to deal with a widespread debacle.
- Homebuilders responded to increased house prices by significantly increasing the number of homes built per year. Many of these new homes were concentrated in “hot” areas where the rate of home building was much greater than for the national average.
- “Flipping” became the modus operandi for buying houses. It is estimated that 20 % of house purchases in California from 2002 to 2007 were by people who did not live in the houses, and this percentage increased significantly from 2005 to 2007. In some markets, flipping amounted to up to 35 % of activity.<sup>142</sup>

After the bubble popped in late 2007:

- House prices began to fall. The rate of fall was highest in those regions where the bubble expanded the most. Florida, Nevada, Texas, and California were epicenters for price reductions and gluts of unsold houses.
- The interest rates on ARMs with their “teaser” introductory rates began to increase at an accelerating pace.
- Marginal borrowers, depending on future double-digit price increases to cover their fundamental inability to meet payments, found themselves less

---

<sup>142</sup> David Stockman, loc cit.

able to meet commitments. The number of borrowers falling behind in payments soared, as did the foreclosure rate.

- The precarious nature of subprime mortgages and the lack of underpinning of MBSs became widely known.
- The value of MBSs plummeted, but it was difficult to appraise the true value of MBSs, and trading in these securities was halted.
- The ability of insurance firms to bail out deficient MBSs was questioned and became a major issue.
- As house prices decreased, buyers fled the market, leaving unsold existing and new home inventories at very high levels, which, in turn, put a further drag on the housing market. Foreclosures added to the glut.
- One by one, major banks and securities firms reluctantly disclosed multi-billion-dollar losses from holding MBSs. Liquidity of the banking system came under question.
- The stock market, particularly the financial sector, after hitting highs in September 2007, dropped significantly (but probably not nearly enough).
- Simultaneous puncture of real estate and stock bubbles boded poorly for the financial future.

It is noteworthy that a prescient prediction appeared on the Internet in February 2007.<sup>143</sup> Mr. Yones said,

On January 31st, 2007, the president of the United States gave his speech on “State of the Economy” citing strong economic growth, record Dow Jones performance and low unemployment rate. This report finds a different picture than the one announced. A deeper look into the economy reveals that the painted rosy picture is based on selective facts instead of a neutral assessment of all relevant numbers and economic trends. It is true that the US economy grew at 3.5 % rate in 4th quarter of 2006, but the economic real growth is much less than advertised. Since 2001, economic growth has been largely fueled by rapid increases in asset prices (housing bubble) and expanding consumer debt rather than development projects, which results in non-sustainable and unhealthy (debt-driven) growth.

Yones went on to say,

Any economy that is built on uncontrolled debt will eventually crash.... Many Americans refinanced their homes during the real-estate boom to pay for living expenses. With the expected housing bubble bust (declining housing values), Americans could lose a significant part of their savings.

<sup>143</sup> Yones, Med, U.S. Economy Risks and Strategies for 2007–2017, <http://iim-edu.org/u.s.economyrisks/>.

A *Wall Street Journal* article<sup>144</sup> emphasized the willingness of borrowers to walk away from mortgage debt, contributing to extraordinary high levels of early default on loans issued during the 18 months before the mortgage bubble burst. As the article pointed out, “a decade ago, most people started off with enough equity in their homes to make foreclosure irrational from a financial standpoint.” With a 20% down payment on a properly appraised house, prices would have to fall incredibly before a homeowner lost all his money and had any incentive to walk away. Furthermore, as time went by, equity in the house increased, making foreclosure remote except in the case of an unexpected severe personal financial crisis.

However, this spate of foreclosures does not necessarily indicate that homebuyers were stupid. For a homebuyer who obtained interest-only mortgages for 5% down (or 0% down) in the expectation (or at least the hope) that a rise in house prices would bail them out, when house prices turned down, they had to consider walking away because they had more to lose than to gain by remaining with the mortgage. As the *Wall Street Journal* observed,

Borrowers acted rationally in response to market forces and incentives during the bubble: Buy a house because “prices always go up; you can’t lose.” Many are acting rationally now: Mail the keys back and un-borrow the money, because prices are sinking fast while the debt isn’t. When the house was purchased not as a first home but as a rental investment, the decision is even easier.

It is evident that in those regions where house prices went up the most in the era 2000–2006, they would come crashing down the fastest in 2007–2008. Southern California provides a good example. The Case–Shiller index for Southern California increased from 100 to about 270 at its peak in early 2007. This was one of the greatest percentage increases in America. The average price of houses sold in Southern California rose from US\$ 415,000 in 2005 to a peak of US\$ 505,000 in February 2007.<sup>145</sup> Since then, it dropped to US\$ 332,000 in December 2008—a drop of 34% from the peak. The number of homes sold in January 2008 was 45% lower than a year prior. Low interest rates, falling prices, and promises of government relief were not enough to slow the pace of Southern California’s housing downturn. Nearly one out of four homes sold had been foreclosed, which put additional downward pressure on home values. The number of residences in the final state of foreclosure in Southern California zoomed up from 337 in 2005 to 33,689 in

<sup>144</sup> [http://online.wsj.com/article\\_print/SB120243369715152501.html](http://online.wsj.com/article_print/SB120243369715152501.html).

<sup>145</sup> Los Angeles Times, February 14, 2008.

the second quarter of 2008.<sup>146</sup> By September 2008, half the houses sold were in foreclosure.

Double-digit price drops were recorded from early 2007 to mid-2008 in most major markets.

While many explanations are offered on business websites, few seem to emphasize excessive speculation as the cause. Once again, irrational asset price increases were treated as normal and only asset price decreases were considered to be abnormal.

The impact of boom and bust in residential real estate on financial institutions was dramatic. Almost every investment bank or mortgage seller revealed multibillion-dollar losses. Initial estimates of losses were around US\$ 150 billion, but with the passage of time, Goldman-Sachs raised the estimate to US\$ 460 billion in March 2008. Bill Gross, manager of the world's biggest bond fund, estimated that falling US home prices would force financial firms to write down US\$ 1 trillion from their balance sheets.<sup>147</sup> John Paulson, founder of a major hedge fund, said global write-downs and losses from the credit crisis could reach US\$ 1.3 trillion, exceeding the IMF's US\$ 945 billion estimate.<sup>148</sup> Many details of the debacle are provided on the Internet.

A particularly good site provides a running record of events relevant to the debacles of major financial institutions in 2007 and 2008 with several hundred detailed entries and links to reports.<sup>149</sup> Only a few brief examples are mentioned here. Countrywide Financial, a major issuer of mortgages saw its stock drop from the 40s to under 5 and faced default until the Bank of America agreed to buy them out. Bear-Stearns, a major investment bank, saw its stock drop from nearly 200 to 10, and was bailed out by intervention by the Federal Reserve. Lehman Brothers went into bankruptcy. IndyMac, a major bank for mortgages collapsed and was taken over by the FDIC. Wachovia's stock dropped from the 50s to as low as 8 and Washington Mutual's stock dropped from the 40s to as low as 1.7. The stock prices of both Citigroup and Bank of America dropped from the 50s to as low as 15. Downey Savings and Loan stock dropped from 70 to as low as 1.3. First Fed Financial dropped from 60 to as low as 4. The stock prices of the two giant government-sponsored mortgage providers "Fannie Mae" and "Freddie Mac" dropped from 82 and 67 to single digits, respectively, and eventually were taken over by the government. Merrill Lynch and AIG were rescued by Bank of America. When homeowners could no longer use their homes as ATM machines, and could no longer depend on stock-based retirement plans for their futures,

---

<sup>146</sup> Los Angeles Times, July 23, 2008.

<sup>147</sup> Bloomberg.com.

<sup>148</sup> Bloomberg.com.

<sup>149</sup> e.g., <http://www.creditwritedowns.com/2008/05/credit-crisis-timeline.html>.

they stopped buying products in the marketplace. Automobile sales dropped more than 30%. Oddly enough, the situation had parallels with 1988 when Eliot Janeway said: “By 1988, affluent Americans were sharing an unfamiliar insecurity with indigent Americans. The affluent were bracing for an onset of hard times, while the indigent were digging in to lower their standards of subsistence and to raise their tolerance of anxiety.”

Stephen Gjerstad and Vernon L. Smith (GS) said,<sup>150</sup>

Moreover, as common as they are, most bubbles do not bring down an entire economy when they pop. Something more than “irrational exuberance,” and something in addition to momentum trading, must have been responsible for the financial crisis and the great recession of 2008. Thus, beyond asking what triggered the recent bubble and what sustained it, we want to address another crucial question. Why does one large asset bubble—such as the *dot.com* bubble—do no damage to the financial system, while another bubble leads to its collapse?

When housing prices began to plummet, many homeowners with low income and few assets became delinquent on their mortgage payments or defaulted entirely. This sparked fear among banks as to the creditworthiness of their peer institutions, which were very often heavily invested in structured securities containing subprime mortgages. Consequently, banks became unwilling to lend to each other....

Banks, unable to get loans from other banks—and, by the same token, banks holding their own fearsome subprime [mortgage securities] began hoarding cash to protect themselves from further exposure to declining asset values. Lending quickly contracted. [There was a] rapid decline in net mortgage flow....

As credit became more difficult to obtain, durable-goods sectors unrelated to housing began to suffer collateral damage. Lending for automobile purchases, for instance, contracted sharply: Auto sales fell 36% between December 2007 and December 2008. Ultimately, the broader economy and the labor market became victims of the collapse of the subprime mortgage market.

GS raised the question of how the *dot.com* crash that wiped out US\$ 10 trillion in assets caused less damage to the financial system than the ensuing housing crash that caused US\$ 3 trillion in losses, which undermined the financial system worldwide. They indicated that the difference (as illustrated in Table 2.6) was that the US\$ 10 trillion loss during the *dot.com* debacle was borne

---

<sup>150</sup> By permission from Gjerstad and Smith (2009).

**Table 2.6** Comparison of equity lost and impact on financial firms in bursts of *dot.com* and housing bubbles. (Gjerstad and Smith 2009)

Bubble that crashed	Period of crash	Equity lost (US\$ trillion)	Drop in BKX Index: (health of financial firms)	Who lost equity?
<i>dot.com</i>	2000–2002	10	6 %	Institutional and individual investors, pension funds, and retirement funds
Housing	2007–2008	3	45 %	Lending institutions, investment banks, investors in mortgage-backed securities, sellers of credit-default swaps, and the US Treasury and Federal Reserve

by institutional and individual investors, pension funds, and retirement funds that [mainly] owned the assets outright.... The losses on these assets were immediately absorbed by their owners, and did not cascade into the foundation of the financial system.

Another critical aspect of the *dot.com* collapse is that the paper profits in the buildup of the *dot.com* bubble were mainly unrealized. Relatively little money was taken out of the wildly bid-up stocks, nor could these stocks yield high prices if they were sold off at high volume. The *dot.com* bubble merely piled paper profit on top of paper profit while relatively less cash flow took place. An investor who bought a *dot.com* stock at 5, rode it up to 500, and then rode it down to zero merely lost US\$ 5/share. The US\$ 500 figure was for practical purposes, a temporary figure that was a paper entry. GS did not allude to this but it is probably even more important than their explanation.

GS argued,

...in the housing crisis, declining housing assets in many cases were, in effect, purchased by households between 90 % and 100 % on margin.... As housing prices [fell] more and more homes became worth less than the loans on them, and more and more losses [were] transmitted to lending institutions, investment banks, investors in mortgage-backed securities, sellers of credit-default swaps, and the insurers of last resort, the U.S. Treasury and the Federal Reserve system.

In the case of mortgages to purchase homes, the banks had lent out more money than the houses were worth and when owners walked away, banks

were left with ownership of houses worth far less than the banks had invested in them. In the cases where homeowners refinanced (and many refinanced more than once, raising the amount of the mortgage each time), the money was handed out by the banks and spent by the homeowner; the money was gone. This was not a paper entry of the theoretical worth of a paper asset. This was real money lent by banks that went down the drain.

White<sup>151</sup> discussed the bursting of the tech bubble between year-end 1999 and year-end 2002 that led to approximately US\$ 7 trillion in aggregate US stock market losses. Although this massive loss of wealth caused the economy to enter a recession 2001, the recession was considered to be relatively shallow. “In essence, the loss of wealth was absorbed, the economy slowed and dipped, and then the economy moved on.” The bursting of the housing bubble in 2007 also led to losses of about US\$ 7 trillion in aggregate housing market losses, but its impact on the economy was much more severe. As White pointed out, “unemployment in the United States rose from a low of 4.5% in May 2007 to a peak of 10.1% in October 2009, and was still 9.4% at year-end 2010.” Even though “there was a collateral slide in the U.S. stock market that generated an additional \$ 12.7 trillion in loss in aggregate stock market value between the end of the third quarter of 2007 and the end of the first quarter of 2009,” White still raised the question: “Why were the severities of the consequences of these two recent asset bubble deflations so different?”

White answered this question as follows:

A straightforward answer can be provided by examining who was holding the assets that shrunk in value.

In the case of the deflating of the tech bubble, the stock market losses were mostly absorbed directly by households: through their direct holdings of equities, through their holdings of equities-based mutual funds, and through their pension funds’ holdings of equities.... In essence, these were unleveraged holdings of the equities: the losses were borne, households were poorer and adjusted their spending, there were macroeconomic consequences, and the economy moved on.

In the case of the deflating of the housing bubble, households again [were] the first-absorbers of the losses. And, again, by causing home-owning households to be poorer, the housing bust would cause these households to adjust their spending downward, with consequent macroeconomic effects. Thus far, the effects should have been similar.

However, to the extent that the losses in housing (and the consequent downturn in the economy) caused households to default on their mortgages, some of those losses [were] transferred to the financial sector. Consequently, the finan-

---

<sup>151</sup> By permission from Cato Journal: White (2011).



cial institutions that held the residential mortgages, and the mortgage-backed securities for which the mortgages were the underlying collateral, experienced the losses.... Over \$ 1 trillion of the housing value losses [were] transferred from defaulting households to...financial institutions. These financial institutions were highly leveraged: they had relatively small amounts of equity on their balance sheets relative to the size of their debt obligations. Accordingly, in a legal system of limited liability for equity holders, even modest (in percentage terms) losses by highly leveraged financial institutions can generate [large] prospective losses for the debt holders. Fears of such losses can lead to runs by the debt holders, who hope to get 100 cents on the dollar if they demand repayment (withdraw their funds) before other claimants try to do the same. Moreover, the perceptions of runs at one financial institution may raise similar fears by imperfectly informed creditors at other (similar) financial institutions and thereby start a cascade or contagion of runs.

Prior to 2008, such runs were thought to be largely or wholly the problem of depository institutions, which the creation of federal deposit insurance in 1933 had largely solved. In 2008, however, the financial sector—and then policymakers—came to the realization that runs could occur on large, thinly capitalized investment banks and bank holding companies that were financed with short-term obligations and that had made investments of increasingly uncertain value in residential mortgages and mortgage-backed securities. Table 2.7 illustrates the sizes and categories of the 15 largest financial institutions at the end of 2007 and their (thin) levels of net worth or owners' equity. It is worth recalling that, in the context of financial institutions, their "capital" is (as a first approximation) their net worth or equity, and that leverage is the ratio of assets to equity. To take an example from Table 2.7, Bear Stearns at the end of 2007 had capital that was only 3% of its assets, and (equivalently) its leverage ratio was 33 to 1.

Consequently, having even \$ 1 trillion of the (roughly) \$ 7 trillion in housing losses spill into the highly leveraged domain of commercial banks, investment banks, GSEs, and (to a more limited extent) insurance companies was devastating to those parts of the financial sector. The largest 15 financial institutions in the United States that are portrayed in Table 2.7, with an aggregate of \$ 15.5 trillion in assets, had an aggregate of only \$ 0.9 trillion in capital. The entire U.S. depository system (of which the largest five members are represented in Table 2.7) at year-end 2007 had \$ 13 trillion in assets and only \$ 1.3 trillion in capital.

The uncertainties as to which financial institutions were still solvent—that is, had assets with a true market value that exceeded the value of their liabilities; or equivalently, had positive capital—expanded across the financial system, starting in the summer of 2007 and engulfed the financial system by the late summer of 2008. These uncertainties meant that creditors to these financial



**Table 2.7** Largest US financial institutions by asset size (December 31, 2007). (By permission from Cato Journal: White 2011)

Rank	Financial institution	Category	Assets (US\$ billion)	Equity as % of assets
1	Citigroup	Commercial bank	2182	5.2
2	Bank of America	Commercial bank	1716	8.6
3	JPMorgan Chase	Commercial bank	1562	7.9
4	Goldman Sachs	Investment bank	1120	3.8
5	American Int'l	Insurance	1061	9.0
6	Morgan Stanley	Investment bank	1045	3.0
7	Merrill Lynch	Investment bank	1020	3.1
8	Fannie Mae	GSE	883	5.0
9	Freddie Mac	GSE	794	3.4
10	Wachovia	Commercial bank	783	9.8
11	Lehman Brothers	Investment bank	691	3.3
12	Wells Fargo	Commercial bank	575	8.3
13	MetLife	Insurance	559	6.3
14	Prudential	Insurance	486	4.8
15	Bear Stearns	Investment bank	395	3.0

institutions (often other financial institutions in the United States or overseas) were increasingly reluctant to lend to each other. Insolvency fears morphed into liquidity pressures, and liquidity pressures, which caused some institutions to sell some assets at fire-sale prices, in turn exacerbated insolvency fears. With uncertainties and fears of insolvencies rampant in the latter half of 2008 and persisting into early 2009, the financial system froze.... In turn, the freezing of the financial system exacerbated the stock market decline and the macroeconomic slowdown that would have accompanied the bursting of the housing bubble in any event. In sum, having more than \$ 1 trillion of housing asset losses spill into the thinly capitalized financial sector greatly exacerbated the consequences of the deflating of the housing bubble.

### 2.11.5 Government Response to the Punctured Bubble

The response of the government was fairly predictable. The Democrats expressed strong concern for the homeowners who were losing their homes due to foreclosure. In this respect, they showed incredible naiveté because they ignored (or perhaps were blind to) the degree of speculation that had occurred, or more likely they craftily utilized these speculators as political instruments, describing them as poor homeowners.

The Republicans were concerned for the banks and home construction companies that were suffering large losses; in addition, they did not want the economy to slip into a recession in a major election year. The following actions were taken:

- A good deal of governmental jawboning was addressed to mortgage companies and banks asking them not to impose contractual increases in interest rates on ARMs (thus increasing losses at these companies).
- Press releases claimed that new funds were being made available by the Fed to banks to maintain liquidity.
- The Federal Reserve made a series of dramatic interest rate cuts, in each case immediately after a precipitous 1-day drop in the stock market that was reacting to losses inflicted by the real estate market.
- The Congress, jointly by Democrats and Republicans alike, with the support of President Bush, provided a “relief package” whereby most households would receive a payment from the government of up to US\$ 1200 and would be encouraged to spend that money. This would total up to perhaps US\$ 160 billion (or more). It was not clear where these funds would come from, but it seems likely that it would be borrowed from foreigners. However, the Chinese would get a return on these funds because almost all the products for sale in America are made in China.

A news report<sup>152</sup> said,

Hillary and Bush agree: Government should bail out homeowners. Democratic presidential candidate Hillary Clinton called for a 90-day moratorium on foreclosures for homeowners who default on sub-prime mortgages. The New York senator, is also seeking a five-year freeze on the monthly rate for sub-prime adjustable mortgages....

From early 2008 to July 2008, the Congress debated what to do about the subprime mortgage crisis. Finally, a mortgage relief bill was passed in July 2008 that was reluctantly signed by President Bush. This bill was a desperate (but inadequate) attempt to prevent the housing bubble from descending further. It provided government backing for “Fannie Mae” and “Freddie Mac,” and funneled government money to housing speculators who faced foreclosure.

---

<sup>152</sup> <http://michellemalkin.com/2007/12/03/hillary-and-bush-agree-government-should-bail-out-homeowners/>.

**Table 2.8** US bailout history (2008 dollars). (By permission from <http://www.propublica.org/special/government-bailouts>)

<b>Company or industry</b>	<b>Year</b>	<b>Amount</b>
Penn Central Railroad	1970	US\$ 3.2 billion
Lockheed	1971	US\$ 1.4 billion
Franklin National Bank	1974	US\$ 7.8 billion
New York City	1975	US\$ 9.4 billion
Chrysler	1980	US\$ 4.0 billion
Continental Illinois National Bank	1984	US\$ 9.5 billion
Savings & Loan	1989	US\$ 293.3 billion
Airline Industry	2001	US\$ 18.6 billion
Bear Stearns	2008	US\$ 30 billion
Fannie Mae/Freddie Mac	2008	US\$ 400 billion
American International Group (AIG)	2008	US\$ 180 billion
Auto Industry	2008	US\$ 25 billion
Troubled Asset Relief Program	2008	US\$ 700 billion
Citigroup	2008	US\$ 280 billion
Bank of America	2009	US\$ 142.2 billion

In an ironic twist, Alan Greenspan, the architect and founding father of the subprime crisis, warned on July 31, 2008, that the real estate markets, already down significantly, had a lot further to drop. The stock markets responded by dropping precipitously in the next few minutes.

Despite government efforts to prop up Fannie Mae and Freddy Mac, they finally collapsed in August 2008, and had to be taken over by the government at a cost of several hundred billion dollars. Soon afterward, the government took over AIG Group, the US second largest insurer.

According to the Wikipedia: The five largest US investment banks, with combined liabilities or debts of US\$ 4 trillion, either went bankrupt (Lehman Brothers), were taken over by other companies (Bear Stearns and Merrill Lynch), or were bailed out by the US government (Goldman Sachs and Morgan Stanley) during 2008. GSEs Fannie Mae and Freddie Mac either directly owed or guaranteed nearly US\$ 5 trillion in mortgage obligations, with a similarly weak capital base, when they were placed into receivership in September 2008. For scale, this US\$ 9 trillion in obligations concentrated in seven highly leveraged institutions can be compared to the US\$ 14 trillion size of the US economy (GDP) or to the total national debt of US\$ 10 trillion in September 2008.

The bailout history of the US government since 1970 is shown in Table 2.8.

**Table 2.9** IMF estimates of home-price overvaluation. (Floyd 2008)

Country	Ratio of mortgage debt to GNP in 2006 (%)	Percent home-price overvaluation (%)
Denmark	100	18
Netherlands	98	29
Great Britain	80	28
Australia	80	24
USA	76	11

### 2.11.6 International Mortgage Debt

The great increase in mortgage debt of the 2000s was not limited to the USA. In September 2007, Morgan Stanley warned that the US mortgage crisis may precede a blowout of the entire European mortgage bubble. Belgium, Denmark, Greece, Great Britain, Sweden, and Spain underwent very high growth rates in housing prices since 1997, creating an even more unbalanced situation than in the USA, when compared to population growth, income levels, and cost of money. The situation in Spain was identified as particularly critical.

Average house prices rose from 1996 to 2006 by 114% in Great Britain, by 133% in Spain, by 131% in Sweden, and by 90% in Belgium.<sup>153</sup> See Fig. 2.32.

A report by the IMF<sup>154</sup> warned that home prices in many other industrial countries were even more overvalued than in the USA. The IMF attempted to assess how much house price increases could be justified in terms of economic fundamentals and reached the conclusion that housing is even more overpriced in some countries other than the US. The basis for the IMF study was a comparison of mortgage debt with the GNP for 17 countries. A steep rise in the ratio of mortgage debt to GNP occurred in many countries over the past decade or two. The IMF then analyzed the economies of these countries and attempted to estimate the percentage of overpricing of housing in each country (see Table 2.9).

There are a few countries where ratio of mortgage debt to GNP remains low, such as Austria (20%) and Finland (40%), and housing is even claimed to be underpriced in Austria.

However, it is not clear how the IMF estimated the percentage overpricing in each country, and their results appear to be grossly understated for the USA. They claimed that US housing was 11% overpriced, but the price of

<sup>153</sup> [http://www.foreignpolicy.com/story/cms.php?story\\_id=3976](http://www.foreignpolicy.com/story/cms.php?story_id=3976) (reporting on Morgan-Stanley data).

<sup>154</sup> Floyd (2008).

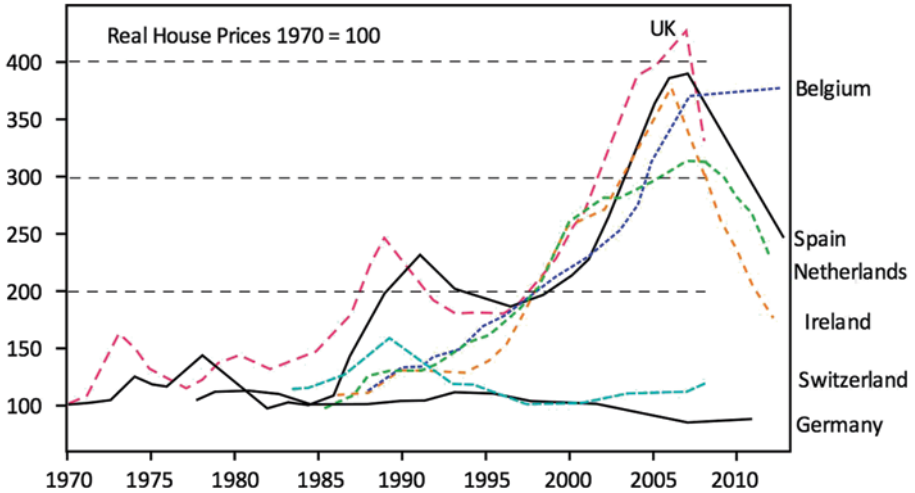


Fig. 2.32 Real house prices in various countries. (By permission from: <http://www.doctorhousingbubble.com/global-housing-bubbles-collapse-canada-bubble-uk-italy-australia-peak-real-estate-debt-mania/> and other sources.)

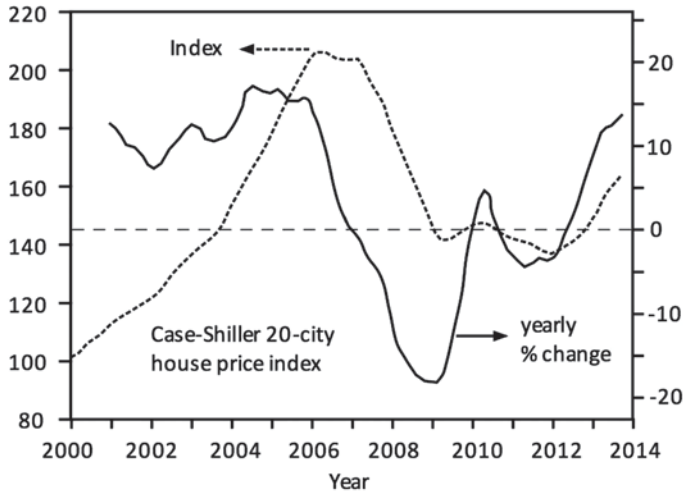
housing in the USA more than doubled from 2000 to 2007. Does that mean that housing was 50% underpriced in 2000? In some localities, such as Los Angeles, housing increased by 170% from 2000 to 2007. Surely, housing in the USA is overpriced by far more than 11%?

The IMF also recommended that central banks should pay close attention to home prices and raise interest rates when prices are rising rapidly. It was stated that

[This] conclusion is directly contrary to the established policy of most central banks, including the Federal Reserve, which ignores home prices when they are expanding. In the current credit crisis, which began with problems in the sub-prime mortgage market, the Fed has moved aggressively to lower interest rates.

But as we have amply demonstrated in this book, the Federal Reserve has a policy of promoting, supporting and sustaining bubbles, and the housing bubble of 2000–2007 is no exception. Evidently, the Fed believes that a doubling of house prices in 7 years is a good thing for America, and the Fed will do all it can to support this bubble.

Figure 2.32 shows how some European countries went through real estate bubbles while others were oblivious.



**Fig. 2.33** Case-Shiller housing index for 20 cities and yearly percent change. (Adapted from: <http://ebookbrowse.net/sa-cshomeprice-history-102706-xls-d148113978>)

## 2.12 The Real Estate Boom of 2013–2014

The increase in housing prices in 2013–2014 is shown in Fig. 2.33.

In a hot market like Los Angeles, the increase in the Case-Shiller index from August 2012 to November 2013 (15 months) was 22%, or about 17% per year. In many areas in and around Los Angeles, many houses sold within a few days of listing, typically for more than the asking price.

Richard Fisher, president of the Federal Reserve Bank of Dallas, said in an interview on Canada's BNN television,<sup>155</sup>

We have a booming housing market.... I don't think it's a bubble yet, but it has corrected enormously, so my personal view would be to slow the rate of acceleration.

Fisher suggested that the Federal Reserve start paring down its US\$ 85-billion-a-month bond-buying program starting by reducing its purchases of MBSs. He said the central bank is buying more than US\$ 40 billion a month in MBSs.

So the question arises: Are we in the early stages of yet another housing bubble? The *New York Times* evidently thinks so.<sup>156</sup>

<sup>155</sup> <http://bizbeatblog.dallasnews.com/2013/06/dallas-feds-richard-fisher-sees-no-u-s-housing-bubble-yet.html/>.

<sup>156</sup> [http://www.nytimes.com/2014/01/06/opinion/the-bubble-is-back.html?\\_r=0](http://www.nytimes.com/2014/01/06/opinion/the-bubble-is-back.html?_r=0).

The *Times* pointed out that in November 2013, housing starts were up 23%. They measured the magnitude of a housing bubble by comparing current house prices to the costs of renting a residence. Other things being equal, rentals should track the inflation rate. Home prices should do the same. If house prices increase much above the rental rate, families theoretically would begin to rent, not buy. Thus, according to the *Times*, “housing bubbles can legitimately be called bubbles when housing prices diverge significantly from rents.” They pointed out that this divergence took place in the previous housing bubble of 1997–2007. They said,

Today, after the financial crisis, the recession and the slow recovery, the bubble is beginning to grow again. Between 2011 and the third quarter of 2013, housing prices grew by 5.83% again exceeding the increase in rental costs, which was 2%.

The *Times* argued that the same forces are operating today that were prevalent in the previous bubble. The Federal Housing Administration is requiring down payments of just 3.5%. Fannie and Freddie are requiring a mere 5%. It is claimed that about half of those getting mortgages to buy homes—not to refinance—put 5% or less down. The *Times* article said,

When anyone suggests that down payments should be raised to the once traditional 10 or 20% the outcry in Congress and from brokers and homebuilders is deafening. They claim that people will not be able to buy homes. What they really mean is that people won't be able to buy expensive homes. When down payments were 10 to 20% before 1992, the homeownership rate was a steady 64%—slightly below where it is today—and the housing market was not frothy. People simply bought less expensive homes.

If we expect to prevent the next crisis, we have to prevent the next bubble, and we will never do that without eliminating leverage where it counts: among home buyers.

As the saying goes: “It's difficult to make predictions, especially about the future.” The *doctorhousingbubble.com* website emphasized this in regard to housing by reviewing predictions made by analysts toward the end of 2012 about the 2013 housing market. They showed that the predictions made late in 2012 by the NAHB, Fannie Mae, Merrill-Lynch, Barclays, Wells Fargo, and Moody in regard to 2013 housing starts were pretty good, yet they were dramatically off on predicted price changes. “Most of these forecasted price increases of 1.4 to 2.6% with the outlier being Barclays projecting a 4.6% gain in home prices for the year. Every one of these forecasts was dramatically

off. Investor demand with a tight supply created a dramatic rise in prices: Prices were up over 12 % for the year.”

*doctorhousingbubble.com*<sup>157</sup> then went on to discuss predictions for 2014. They said,

What is typical of course is that analysts usually go with the momentum so it is no surprise that predictions for 2014 are rosier than they were for 2013 even though most are forecasting higher interest rates and most will acknowledge that this current pace is unsustainable. Yet higher rates will add pressure on income-constrained households. Investors are already showing signs of pulling back in certain markets.

At the start of 2014, the inventory of available houses was extremely low, suggesting that prices will rise significantly. However the likelihood of higher mortgage rates would act in the opposite direction. Nevertheless, Fannie Mae and Merrill-Lynch are predicting a further ~6 % rise in average house prices and a ~15 % increase in housing starts. According to *doctorhousingbubble.com*,

Fannie Mae is forecasting a 30-year fixed rate mortgage rate of close to 5 % by year-end yet has a ~6 % price increase for the year. We already witnessed how quickly the market momentum stalled out over the summer once interest rates went up. This will impact cash strapped home buyers who live on a razor thin margin for the monthly payment.

*doctorhousingbubble.com* also emphasized the importance of the huge shadow inventory of homes not presently on the market because of foreclosures and defaults, but these homes will add to the inventory as house prices rise, and they are no longer “underwater.” As the inventory expands, the pressure to drive up house prices will likely ebb.

In early February 2012, *doctorhousingbubble.com* emphasized the impact of the shadow inventory of homes on the future housing market.<sup>158</sup> They claimed

...with banks now moving on delinquent properties, the supply will be moving higher while traditional inventory remains low. This is happening. We noted that in Southern California, over 50 % of all MLS inventory is now composed of short sales showing that banks are now willing to sell homes for less than the original mortgage balance. One of the more interesting trends is the aggressive

<sup>157</sup> <http://www.doctorhousingbubble.com/2014-housing-forecasts-real-estate-2014-predictions-prices/>.

<sup>158</sup> <http://www.doctorhousingbubble.com/shadow-inventory-second-wave-foreclosure-defaults-short-sales-hidden-benefits-stimulus-of-not-paying-mortgage/>.



pricing we are seeing on some of these listings. Of those in actual foreclosures, nearly half have made no mortgage payment in two years. Now that banks are moving on these properties that hidden stimulus will be pulled away.

They estimated the total distressed inventory of homes (delinquent and in foreclosure) was over 5.8 million homes. In addition, another million homes were underwater. This can be compared to the then existing inventory of homes for sale of about two million. Another seven million properties were either: delinquent, in the foreclosure process, bank-owned real estate, or current but underwater. They pointed out

...mortgage rates are artificially low thanks to the Federal Reserve and with low down payment loans like FHA insured loan products the leverage capacity is at a maximum for buyers to stretch into a property. Rates are unlikely to go lower and we know FHA loans will get more expensive in the upcoming months because default rates are soaring.

They said: “The banking system is starting to clear out shadow inventory and nationwide, prices are inching closer to a nominal bottom.” Actually, that bottom was reached in early 2012 when this article was published. The impact of the shadow inventory was overestimated because (a) many distressed homes remained in the shadow inventory and the current inventory remains tight, and (b) rising home prices reduce the size of the shadow inventory. It is a self-correcting system. Meanwhile, there is no evidence yet in early 2014 of the predicted rise in mortgage rates to 5%.

## 2.13 Japan and East Asia

### 2.13.1 Japan 1970–2007

#### 2.13.1.1 Background

K&A provided a good historical background as to how Japan industrialized and opened up to foreigners in the late nineteenth century. Japan emulated the West in developing its railroads, its civil service, its banking system, its central bank, and its economy. The industrial economy in Japan developed around a limited number of feudal families such as Mitsui, Mitsubishi, Sumitomo, and Yamoto, each of which formed an industrial group. These industrial groups were outlawed in the late 1940s by General Douglas MacArthur. Nevertheless, after the groups were ostensibly split up, they continued to practice their inbred policies. As K&A said: “The Mitsui Steamship Company purchased

its steel from the Mitsui Steel Company and its insurance from the Mitsui Insurance Company.”

Japanese economic growth in the half-century after WWII was phenomenal. In the early years of this period, the quality of Japanese products was generally inferior. However, they improved greatly after the 1960s. K&A said:

By the 1980s Japan was the second leading industrial power, more economically powerful than Germany. Toyota, Nissan, and Honda were leaders in the global automobile industry. Sony, Matsushita, and Sharp and a seemingly endless list of firms dominated the global electronics industry. Nikon and Canon “owned” the world’s photo-optics industry. Japanese-built computers were among the most powerful in the world.

With growing prosperity, real estate and stock prices began escalating rapidly in 1985, while there was also a rapid appreciation of the Japanese yen. Japan maintained low interest rate ceilings on both bank deposits and bank-lending rates. The demand for loans from business firms at these low interest rates was much greater than the supply; loans were awarded on a government-directed preference basis.

The real rates of return on bank deposits and most other securities were negative. However, the real rates of return on real estate and stocks were positive and high. Hence, more and more funds poured into the stock and real estate markets. This is similar to what happened in the USA from 2002 to 2007.

The Bank of Japan reduced interest rates further after 1986, stimulating even greater boom conditions. However, prices of goods and services in Japan did not escalate excessively because of appreciation of the yen, which moved up from almost 240 to the dollar in 1985 to 130 in 1988. According to K&A, “deregulation of financial institutions was a major contributory factor to the asset price bubble in Japan in the 1980s and especially the second half of that decade.” Japanese banks were engaged in a competition to acquire the most assets and the greatest number of loans. If this sounds familiar, think of the USA in 2002–2007.

### 2.13.1.2 The Japanese Boom and Bubble

Traditionally, Japanese firms had not been as concerned with bottom-line profitability as much as US firms: Their priorities were to expand their product lines and provide lifetime employment for a growing number of employees. Market share was an important cultural measure, and many firms increased the amounts borrowed in efforts to improve product lines and increase their market share.

As the market value of Japanese stocks surged upward, investors resident in the United States and Western Europe bought more Japanese stocks.” Foreign investors “benefited from the combination of the increase in the price of the stocks and the increase in the foreign exchange value of the Japanese yen.<sup>159</sup>

The Nikkei stock index climbed from 6000 in the early 1980s to 10,000 in 1984, and thence to almost 40,000 in late 1989. The price/earnings ratio jumped from under 25:1 earlier in the decade to over 60:1 in 1989. All of the financial values in Tokyo were sky-high toward the end of the 1980s. The market value of Japanese stocks was twice the market value of US stocks, even though Japanese GDP was less than half of US GDP. The comparison between Japanese and US firms in terms of the ratios of the market value of stocks to profitability was even more skewed.

At the same time that stocks were advancing, property prices were increasing at the rate of 30 % per year. According to K&A,

Real estate prices increased much more rapidly than rents, with the consequence that the rental rate of return declined significantly below the interest rate on the borrowed funds. Investors who had bought properties in the last several years of the 1980s had a negative cash flow—the rental income on their properties after the payment of the operating costs was below the interest payments due to the lenders—but because property prices were increasing so fast, they could raise cash to make the interest payments either by increasing the amounts borrowed against a property in earlier years or by selling.

This real estate boom was a predecessor to the subprime mortgage boom on the 2000s in the USA (and globally as well). In both cases, investments in unaffordable, highly priced real estate were made possible by annual double-digit increases in asset prices—that is, until the bubble popped.

K&A suggested that the bubble in Japanese real estate prices resulted from four factors: (1) tradition that land is a good investment, (2) the fact that real estate had been a winning investment for 30 years, (3) liberalization of constraints on banks to increase the proportion of loans for real estate, and (4) the rapid growth in the money supply in the second half of the 1980s as a result of the intervention of the Bank of Japan to limit the appreciation of the yen in the foreign exchange market, which would have hurt exports.

As K&A explained, “firms involved in the real estate business accounted for a significant proportion of the market value of all of the firms listed on the Tokyo Stock Exchange.” As real estate prices rose, Japanese banks (which owned large amounts of real estate and stocks) were able to increase their loans.

---

<sup>159</sup> Kindleberger and Aliber (2005).

Japan appeared to have developed the financial equivalent of a *perpetual motion machine*. The increases in real estate prices led to increases in stock prices; the increases in both real estate prices and stock prices led to increases in bank capital.

As long as real estate prices continued to rise, the banks were solvent and all was well:

Industrial firms began to borrow to obtain the funds to buy real estate and shares in other firms because the rates of return were so much higher than the rates of return from [merely] producing automobiles and electronics and steel.

Thus, Japan went through a classic bubble in which the rise in asset prices dwarfed increased profits from ordinary enterprises, inducing more and more money to be invested into paper assets with the hope of further gain. During these boom years in the late 1980s, newly rich Japanese were almost giddy in flexing their financial muscles across the world. Japanese bidders bought French impressionist paintings at auctions, driving up art prices to new records. Expensive golf courses mushroomed. The Japanese competed to purchase the world's major real estate. According to K&A,

The Mitsui Real Estate Company paid \$ 625 million for the Exxon building on Sixth Avenue in New York City against an asking price of \$ 310 million because the company wanted to get into the Guinness Book of World Records. Other Japanese firms were also acquiring trophy properties and buildings in the United States. Mitsubishi Real Estate bought 50 % of the Rockefeller Center, and a group related to Sumitomo Bank bought the Pebble Beach Golf Course in Northern California. Sony bought Columbia Records and then Columbia Pictures, and Matsushita, its dominant rival in the electronics industry, acquired MGM Universal.

The market value of Japanese real estate was twice the market value of US real estate, even though the land area in Japan is 5 % of that in the United States and 80 % of Japan is mountainous.

It was claimed by one estimate that the market value of the land under the Imperial Palace was greater than the market value of all of the real estate in California.

As K&A explained,

The Japanese had all the money—and they were spending it to buy all kinds of assets both at home and abroad. The paradox was that the Japanese were spending as if they were very rich and yet there didn't seem to be that many rich Japanese; much of the spending was by Japanese corporations.

Smith<sup>160</sup> provided additional insights. He pointed out that as in the USA, Japan abandoned the traditional valuation of stocks in terms of dividend payments, in favor of valuation based on subjective beliefs in putative future earnings potential (see Sect. 1.16).

Smith emphasized that in the early 1950s, roughly 70% of Japanese stocks had been held by individuals, but by 1989, 70% of listed shares in Japan were held by corporations, banks, and insurance companies, “who were unlikely to sell at any price.” As Smith put it: “Japan, Inc., owned 70% of itself.” The number of free shares on the market available for trading was limited.

Smith claimed that the Japanese stock market was fundamentally different from the US and Western markets. The Japanese markets were institutionalized. Government intervention maintained high stock prices in the 1980s so that corporations had a source of cheap capital by selling stock at high prices. Smith therefore disputed the notion that “the Japanese stock market was an irrational bubble, inflated by investors acting on emotion rather than reason.” He further argued that the effective number of shares was less than the nominal number due to extensive cross-holdings by institutions, and thus the earnings per share should have been increased proportionately, thus reducing the price/earnings ratios of stocks below the nominal values. In addition, unlike the USA where every penny increase in earnings seems to drive a stock wild, Japanese companies were under very little pressure to report high earnings, and often used accounting gimmicks to understate earnings so as to reduce taxes. Hence, Smith argued that the concept of a herd-mentality, investor-driven bubble was not accurate for Japan. However, he did admit that because of the relatively small number of shares traded, it was possible for “unsavory market operators to manipulate prices” by cornering the market on shares. But merely because shares were held by institutions, we cannot conclude that the shares did not exist, and therefore the argument that the P/E ratio should have been lowered does not make sense to this writer.

According to Smith,

For most of the 1980s, the Japanese system seemed to be working. Stock prices rose at an annualized rate of 21% per year, despite the fact that operating profits per share for Tokyo exchange-listed stocks grew only 2.8% per year. (Net income for these firms rose at a 5% rate, but the heavy issuance of new shares reduced the increase in profits per share to only 2.8%) It was thus the expansion of valuations (P/E ratios) that provided most of the gain in stock prices.

However, it is difficult to understand how this system was “working” when stock prices were appreciating ten times faster than earnings. How long could

---

<sup>160</sup> Smith (2004).

stocks continue to appreciate at 21 % per year? As is usual in bubbles, there were many prognostications that things were different in this case, and we had traversed to a new paradigm. Smith pointed out that a warning sign was the fact that much of the reported earnings of companies in the late 1980s were due to capital gains from investments in shares, and not from operating profits.

A good deal of foreign money was invested in the thin Japanese stock market in the 1980s, but foreign money began to be withdrawn as the markets soared in the late 1980s.

### 2.13.1.3 Collapse of the Japanese Bubble

The bubble in Japan reached its peak at the end of 1989. Banks developed 100-year, three-generation mortgages to deal with the high prices of real estate. However, the Bank of Japan was concerned that such high prices for homes had become problematic for the populace. Thus, a new Japanese central bank regulation limited the rate of growth of real estate loans.

Rental incomes in Japan were insufficient to cover interest payments on owners' mortgages, but owners managed by continually increasing borrowing based on continual increases in real estate prices. However, when the rate of growth of bank loans slowed, recent buyers of real estate developed a cash bind; they could no longer obtain the cash needed to pay the interest on their outstanding loans via new bank loans. Some of these owners therefore became distress sellers because of the high carrying costs. The combination of the sharp reduction in the rate of growth of credit for real estate and these distress sales caused real estate prices to decline.

Stock prices and real estate prices began their long decline at the beginning of 1990; stock prices declined by 30 % in 1990 and an additional 30 % in 1991. The stock price trend in Japan continued downward although there were a number of significant rallies. The Nikkei stock average dropped from a high of almost 40,000 at the end of 1989 to about 23,000 in 1991, then to about 19,000 in 1994, and trending down to about 15,000 by 2001. It bottomed out at around 10,000 in 2003, recovered to over 17,000 in 2005, and dropped to around 8500 in 2008.

The decline in asset values made many Japanese financial institutions precarious. The banks became unwitting owners of thousands of French paintings. Many golf courses went bankrupt. Economic growth plummeted. The failures of firms meant that the banks took over title to the properties and sold them, putting further downward pressure on the price levels. So there was a downward spiral. Commercial and industrial enterprises went bankrupt at

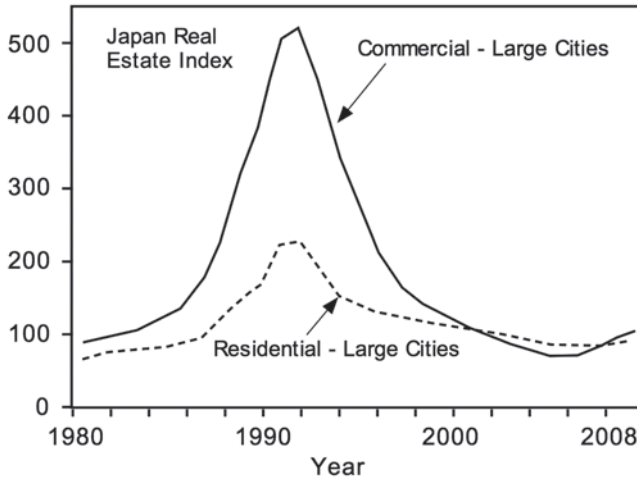


Fig. 2.34 Japan real estate index 1980–2009

a steady rate of 1000 per month. K&A called this: “debt, deflation, default, demography and deregulation.”

As K&A described it, “the perpetual motion machine began to work in reverse.” As property prices declined, bank capital declined and banks were now much more constrained in making loans. Since Japanese stocks were declining while US stocks were booming, investors sold Japanese stocks and bought US stocks. Bankruptcies increased, and the banks incurred large loan losses. “For the first time the banks began to ask: If we make this loan, what is the likelihood that we will be repaid?”

The parallel with the subprime fiasco in the USA of the 2000s is uncanny. From 2002 to 2007, US banks and mortgage companies seemed only intent on selling the greatest number of mortgages—regardless of the prospects for repayment, under the assumption that rising real estate prices would bail out all weak loans. It was not until 2008 that they asked: “If we make this loan, what is the likelihood that we will be repaid?” Jiménez <sup>161</sup> provided Fig. 2.34.

### 2.13.2 East Asia

The East Asian countries comprise the arc from Thailand to South Korea. According to K&A, the stimulus for an economic boom in the Asian countries in the 1990s was the implosion of the asset price bubble in Japan in 1990 and the appreciation of the yen that made investment in Asian countries more

<sup>161</sup> Adapted from Jiménez (2011).

lucrative. As the Japanese stock and real estate markets imploded, funds that had been invested in Japan found their way into the East Asian countries.

In Thailand, Malaysia, and Indonesia, stock prices increased by 300–500 % in the first half of the 1990s and manufacturing activity surged. Real estate prices soared. The economies boomed.

K&A asserted that since the East Asian countries were quite dissimilar in many ways (e.g., Singapore, Taiwan, and Hong Kong were international creditor countries while Thailand and Malaysia were international debtors) there must have been some common factor causing the boom that overrode these differences.

As K&A pointed out, China, Thailand, and the other East Asian countries profited from large-scale “outsourcing by American, Japanese, and European firms that wanted cheaper sources of supply for established domestic markets.” America allowed its manufacturing capabilities to be transferred to these countries, with the payoff being importation of cheaper products made with lower-cost labor in the East Asian countries. As these manufacturing facilities expanded in East Asia, they produced rapid economic growth, which, in turn, led to more investment of foreign capital, particularly from Japan. Additional investment fed back into the booming economies producing ever more expansion.

The Japanese yen appreciated remarkably due to decades of trade surpluses, making it cheap for Japanese corporations to buy foreign currencies to buy or build subsidiaries in other Asian countries.<sup>162</sup> This allowed them to transfer production of standard manufactured products to subsidiaries abroad to take advantage of cheaper foreign labor. According to ZNET, the East Asian countries were the optimal target for outsourcing with their “disciplined work forces, low wages, pliable yet reliable governments,” and the fact that there “was no need to worry about inadequate internal markets to buy the goods in the early years because the host governments agreed that the more goods destined for export the better.”

“Neither Latin America, burdened by bad debt, nor stagnant African economies were attractive outlets for international capital. The former socialist economies in East Europe and the former Soviet Union were tempting, but not yet able to absorb large amounts of international capital quickly, and much riskier in any case. The East Asian tigers were simply the best investment opportunities in the late 1980s and early 1990s.”<sup>163</sup>

---

<sup>162</sup> What Actually Turned the Asian Boom into Bust? ZNET, [http://www.zmag.org/Instructionals/GlobalEcon/id13\\_cf.htm](http://www.zmag.org/Instructionals/GlobalEcon/id13_cf.htm).

<sup>163</sup> ZNET, loc cit.



As in many booms and bubbles, the initial basis for the East Asian boom was sound. Initially, the Asian export-oriented economies were competing with high-cost Western producers. Their “cheap workers, low taxes, and lax environmental laws” allowed them to underprice the competition and still earn good profits. But as more East Asian countries and businesses joined the export-led boom:

“The East Asian exporting economies competed more and more with each other rather than with Western producers, and...investments lost their luster and became less profitable than expected by both lender and borrower—a situation that leads to problems in any highly leveraged credit system—even if there are no further complications.”

To fuel this boom, East Asian countries needed to borrow foreign currencies to buy local currency and make loans to East Asian businesses at even higher interest rates. Asian banks earned high profits from a high volume of business conducted with a large spread between the interest rate they charged Asian businesses and the interest rate they paid international investors. As long as currency exchange rates remained stable, this could continue for some time:

When competition among East Asian businesses led to falling export sales, these businesses could not repay their high interest loans from Asian banks. Moreover, falling export sales lowered international demand for the Asian currencies, leading to depreciation that made dollars more expensive for Asian banks to buy. For both reasons Asian banks could not repay their short-run dollar debts in the usual manner—by selling local currency from repaid loans for dollars.... When the Asian banks finally couldn't meet payments on their dollar loans it was too late. Their outstanding debt was too big and too short-term. As they scrambled to convert what local currency they had into dollars to meet their payment deadlines, they further depreciated the local currency. When the international investors and currency speculators and local wealthy elites caught on to what was happening,...new dollar loans dried up overnight and more local currency was dumped on the exchange market, causing further depreciation.... At this point, there was no possibility of repaying international investors...since the bottom had fallen out of the local currency making the dollars necessary for repayment prohibitively expensive. Moreover, factories couldn't produce exports for sale because they had no money to buy the imported inputs needed to make them, a condition made worse as the price of those inputs was multiplied due to depreciating local currencies.<sup>164</sup>

---

<sup>164</sup> ZNET, loc cit.

As K&A said,

The nature of the bubble is that eventually it will be pricked, and then as with a child's balloon the air may escape sharply.

The bubbles in the Asian countries depended on a continual inflow of capital from foreign lenders. While the Asian economies were growing, currency exchange rates were stable and interest rates were attractive, so foreign money poured in. But as competition became more stringent, pressure built to devalue currencies as a means of making exports from the Asian countries more attractive. The devaluation of the Thai baht on July 2, 1997 was the first devaluation, and it led to what K&A called the “contagion effect”:

The depreciation of the baht triggered the contagion effect and within six months the foreign exchange values of each of the currencies on the Asian arc, with the exception of the Chinese yuan and the Hong Kong dollar, had lost 30% or more of their value in the foreign exchange markets. Stock prices declined by 30 to 60% partly because foreign investors were seeking to cash out, partly because the domestic firms were no longer profitable. Real estate prices declined sharply. Most banks, with the exception of those in Singapore and Hong Kong, failed. The closing of many banks in Indonesia triggered racial strife, and an immense run on the currency that lost more than 70% of its value. When the crises occurred, the play script was a reprise of similar events in Japan in the previous decade. The chatter about the East Asian miracle disappeared.<sup>165</sup>

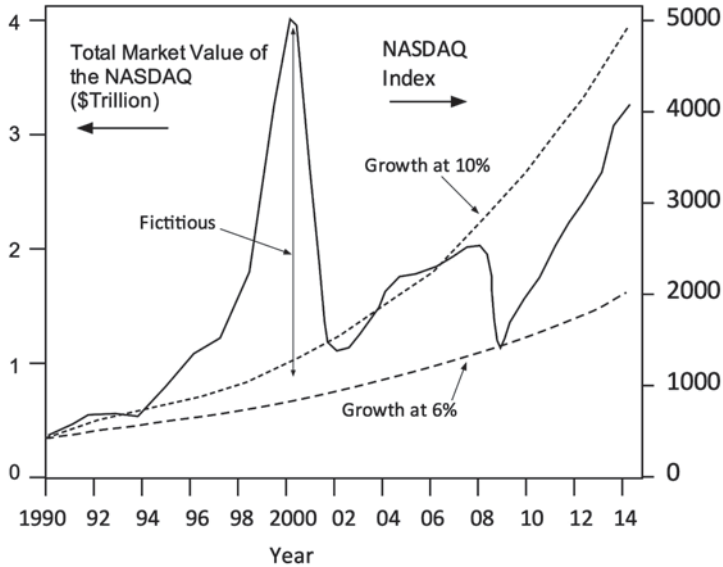
## 2.14 The Next Bubble

Eric Janszen provided valuable insights into bubble formation and popping.<sup>166</sup> Janszen's view was that major industries like steel and autos no longer dominate the economy. According to him, “the new economy belongs to finance, insurance, and real estate—FIRE.” He described FIRE as “a credit-financed, asset-price-inflation machine” that is built upon a fundamental belief that the value of one's assets no longer fluctuates in response to the business cycle and the financial markets, but now mainly rises, with only infrequent short-term reversals.

Janszen provided an answer to a question: Why do foreigners invest in US securities when we borrow rampantly and owe so much debt? As Janszen

<sup>165</sup> Kindleberger and Aliber (2005).

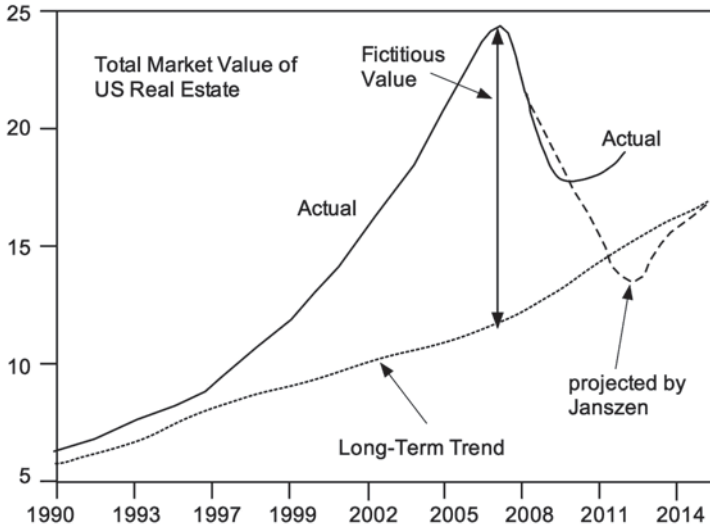
<sup>166</sup> Janszen (2008).



**Fig. 2.35** Market value (number of shares times price per share) of NASDAQ stocks versus year. (By permission from Janszen 2008)

explained, the USA has a severe trade imbalance with oil-producing countries, Japan and, more recently, China. The question is what should these countries do with the dollars that keep piling up in their coffers? The USA provides military protection to countries like Saudi Arabia and Japan. In addition, China and other countries need to support the USA because the USA provides a critical market for their goods and provides world stability. So, for a variety of reasons, most countries with favorable trade balances with the USA are motivated to continually invest acquired dollars in US assets. If they did not, the value of the dollar would fall precipitously, and that would reduce the value of their dollar holdings and reduce the ability of the USA to import their products. Janszen quotes an old proverb that says if you owe a bank a small amount, the bank controls you; but if you owe the bank more than it can afford to lose, then you control the bank. He says that the USA owes so much to foreign countries that these countries must continually prop up US assets. However, the US policies of cutting taxes, raising expenditures, importing large amounts of oil, spending trillions on wars in the Middle East, handing out money to its citizens (that it does not have), and generally recklessly borrowing has put these foreign investors to a severe test.

Janszen provided some intriguing graphical depictions of bubbles. I have taken the liberty of modifying his graphs. Figure 2.35 shows a revised version of Janszen's graph for the total market value of NASDAQ stocks. However, one caveat that should be borne in mind is that during the heyday of the *dot*.



**Fig. 2.36** Market value of US real estate versus year. (By permission from Janszen 2008)

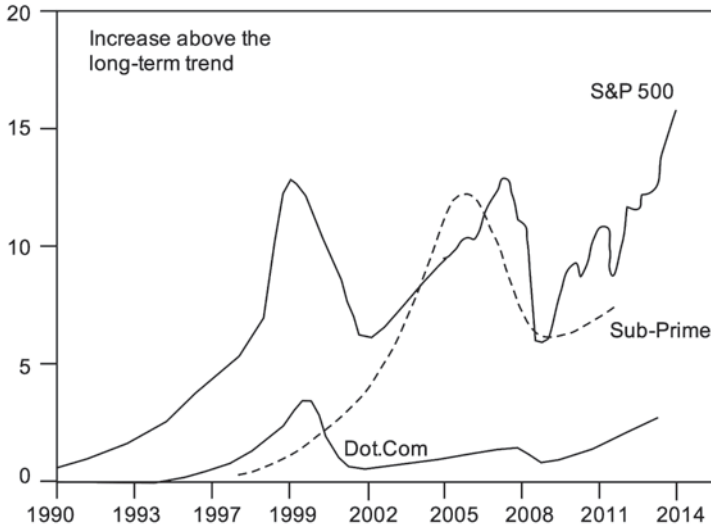
*com* boom (late 1990s to 2000) the great preponderance of NASDAQ stocks were closely held and only a small fraction of outstanding stocks were actively traded on the markets. Therefore, multiplying the number of shares by the current price (as was done to obtain Fig. 2.35) is misleading. There is no way that the price could have been maintained if most of the shares were put on the market. The shares were maintained artificially high because of the small amount available for purchase by the mob. Thus, the peak shown in Fig. 2.35 is labeled “fictitious.”

Janszen compared the actual NASDAQ history with a curve representing 11% growth per year. I show growth curves of 6 and 10%. Note that as of 2014, a new bubble in NASDAQ stocks is well under way.

Similarly, I have modified Janszen’s curve for the market value of US real estate, as shown in Fig. 2.36. If his projection for the future (dashed line) proves to be accurate, real estate has a much deeper drop in store than market analysts have predicted.

Janszen projected forward into the future and suggested that the next bubble would be even bigger than the subprime housing bubble that peaked about US\$ 12 trillion above the long-term trend. He suggested that alternate energy would be the basis of that bubble. It is also possible that the stock market will provide the next bubble. For stocks gained US\$ 3.7 trillion in 2013<sup>167</sup>

<sup>167</sup> <http://www.bloomberg.com/news/2013-12-30/stocks-3-7-trillion-year-beats-bonds-most-ever-as-funds-revive.html>.



**Fig. 2.37** Is the stock market the next bubble?

and if this continues, it might very well provide the biggest bubble of all. Figure 2.37 shows the increase in the S&P 500 total valuation since it hit bottom in 2008, and this represents only a portion of the total stock market valuation.

Karl Marx identified the real problem with capitalism: Capitalism has the means of production but not the means of distribution.

As homebuilders amply demonstrated from 2002 to 2007, they have the means to build a “gazillion” homes. Out in the so-called Inland Empire 50 miles east of Los Angeles, they put up hundreds of thousands of tract homes per year. Outside Las Vegas, and in Florida, likewise. This country has the lumber, the copper, the iron, the supplies, and the labor to make so many homes it would make your head swim. Similarly, we have steel, rubber, plastic, metals, and assembly plants that can turn out cars galore. The problem is that the people who they would like to sell to do not have the money to buy these homes and cars. So, we have no great problem with production—our problem is distribution. Until recently, we got around this problem by bidding up paper assets. Rising stock markets and low interest rates convinced Americans not to save because their futures were guaranteed by rising stocks and house prices, while their income from savings was paltry. Instead, they spent their disposable income, and borrowed to buy even more. Rising house prices encouraged millions of Americans to use their homes as ATM machines, and by adding to their mortgage debt, they were able to generate cash that fueled an expanding economy. Many millions of others speculated in buying new houses with the intent of turning them over for a quick profit. As long as paper assets kept rising, all was well. Then the bubble popped.

The problem for the rich is how to get enough money into the hands of the people to buy the products that the rich produce, while remaining rich. My friend, Giulio Varsi, claims that the general approach that has been used is to provide welfare to the poor to give them cash to open up new markets for products, while maintaining low taxes on the rich to ensure their continuing wealth. The middle class bears the tax burden. As I have shown in this book, when you sum income tax plus social security, and take into account the proportion of income versus capital gains, the total taxes on the first US\$ 100,000 of income are the highest of all income brackets.

The reason that we are unable to distribute houses and vehicles to all the people is that the money in America is concentrated in the hands of the rich. If the USA really wants to distribute houses and cars to the wider populace, it is going to have to take the money away from the rich and give it to the people. That seems unlikely to occur.

It appears that Eric Janszen's insights into bubble formation and popping are correct.<sup>168</sup> "The new economy belongs to finance, insurance, and real estate—FIRE" and represents "a credit-financed, asset-price-inflation machine" that is built upon a fundamental belief that the value of one's assets no longer fluctuates in response to the business cycle and the financial markets, but now mainly rises, with only infrequent short-term reversals.

## References

- Allen, F. L. (1931). *Only Yesterday*. New York: Harper and Row.
- Aylen, A. (2001). The economic boom of the 1920s. <http://www.planetpapers.com/Assets/3950.php>.
- Baker, D. (2011). *False profits: Recovering from the bubble economy by Dean Baker*. San Francison: Berrett-Koehler Publishers.
- Bezemer, D. J. (2001). Post-socialist financial fragility: The case of Albania. *Cambridge Journal of Economics*, 25(1). <http://www.tinbergen.nl/discussionpapers/99045.pdf>.
- Bordo, M. (2003). Stock market crashes, productivity boom busts and recessions: Some historical evidence. [www.cfr.org/content/thinktank/Depression/Bordo\\_2.pdf](http://www.cfr.org/content/thinktank/Depression/Bordo_2.pdf).
- Brockner, M., & Hanes, C. (2012). The 1920s American real estate boom and the downturn of the great depression, SUNT-Binghamton, April 2012 Binghamton, NY.
- Brockner, M., & Hanes, C. (2013). The 1920s American real estate boom and the downturn of the great depression: Evidence from city cross sections. [www.nber.org/chapters/c12798.pdf](http://www.nber.org/chapters/c12798.pdf).
- Bierman, H. (1998). The causes of the 1929 stock market crash—A speculative orgy or a new era? Greenwood Press. <http://www.abc-clio.com/aboutus/default.aspx?id=70452>.

---

<sup>168</sup> Janszen (2008).

- Carlson, M. (2007). A brief history of the 1987 stock market crash with a discussion of the Federal Reserve Response, Staff Working Paper 2007-13. <http://www.federalreserve.gov/pubs/FEDS/2007/200713/200713pap.pdf>.
- Cassidy, J. (2002). *Dot.Con*. New York: Perennial Press, Div. of Harper-Collins.
- Danielsson, J., & Shin, H. S. (2002). Endogenous risk. <http://hyunsongshin.org/www/risk1.pdf>.
- David Stockman “The Great Deformation: The Corruption of Capitalism in America” [books.google.com/books?isbn=1586489135](http://books.google.com/books?isbn=1586489135)
- Dowd, K. (23 September 1999). Too big to fail? Long-term capital management and the federal reserve, Cato Briefing Paper 52, Washington, DC.
- FDIC. (1996). The savings and loan crisis and its relationship to banking. Report. [http://www.fdic.gov/bank/historical/history/167\\_188.pdf](http://www.fdic.gov/bank/historical/history/167_188.pdf).
- Floyd, N. (5 April 2008). Off the charts: Across the globe, hints of more perils in housing. *New York Times*.
- Friedman, M., & Schwartz, A. (1971). *A monetary history of the United States, 1867–1960*. Princeton: Princeton University Press.
- Galbraith, J. K. (1954). *The Great Crash* Mariner Books. New York: Mariner Books, Division of Houghton Mifflin Harcourt Books.
- Galbraith, J. K. (1958–1998). *The affluent society* (40th Anniversary ed.). Mariner Books.
- Glaeser, E. L., Gyourko, J., & Saiz, A. (2008). Housing supply and housing bubbles. *Journal of Urban Economics*, 64, 198–217.
- Gjerstad, S., & Smith, V. L. (2009). Monetary policy, credit extension, and housing bubbles: 2008 and 1929. *Critical Review*, 21, 269–300.
- Gottlieb, M. (1965). New measures of value of nonfarm building for the United States, Annually 1850–1939. *Review of Economics and Statistics*, 47, 412–419.
- Greenspan, A., & Kennedy, J. (2007). Finance and economics discussion series, divisions of research & statistics and monetary affairs, Federal Reserve Board, Washington, D.C. Sources and Uses of Equity Extracted from Homes, Report No. 2007–20.
- Holt, J. (2009). A summary of the primary causes of the housing bubble and the resulting credit crisis: A non-technical paper. *The Journal of Business Inquiry*, 8, 120–129.
- Janeway, E. (1990). *The economics of chaos*. New York: Penguin Books, Div. of Random House.
- Janszen, E. (February 2008). The next bubble: Priming the markets for tomorrow’s big crash. *Harper’s Magazine*.
- Jiménez, Á. (2011). Understanding Economic Bubbles. <http://www.eco.uab.es/ue/trabajos%20premi/tfc%2061%20Jiménez%201.pdf>.
- Johnson, E. A. (1936). The record of long-term real estate securities. *Journal of Land and Public Utilities Economics*, 12, 44–48.
- Kindleberger, C. P., & Aliber, R. (2005). *Manias, panics and crashes* (5th ed.). Hoboken: Wiley.
- Kolman, J. (1999). LTCM Speaks. <http://www.derivativesstrategy.com/magazine/archive/1999/0499feal.asp>.
- Lewis, M. (1989). *Liar’s poker*. New York: Penguin Books, Div. of Random House.

- Lilly, S. (2007). Unbridled markets: Conservatives embrace securitization run amok. <http://www.americanprogress.org/issues/regulation/news/2007/12/21/3792/unbridled-markets-conservatives-embrace-securitization-run-amok/>.
- Lowenstein, R. (2000). *When genius failed: The rise and fall of long-term capital management*. New York: Random House.
- Lowenstein, R. (27 April 2008). Triple-A failure—The ratings Game. *The New York Times*.
- Lowy, M. (1991). *High rollers—Inside the S & L debacle*. Westport: Praeger, Div. of Greenwood Pub. Group.
- MacKenzie, D. (2004). The big, bad wolf and the rational market: Portfolio insurance, the 1987 crash and the performativity of economics. <http://www.sociology.ed.ac.uk/Research/Staff/Mackpaper5.pdf>.
- Mahar, M. (2003). *Bull—A history of the boom, 1982–1999*. Harper Business Books.
- Mattera, P. (2002). Lack of accountability: The Enron/Arthur Andersen Scandal and the future of the accounting business, corporate research E-Letter No. 21, February 2002. <http://www.corp-research.org/archives/feb02.htm>.
- McDonald, J. F., & Stokes, H. H. (2011). Monetary policy and the housing bubble. *Journal of Real Estate Finance and Economics*. [papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2218543](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2218543).
- McLean, B. (2001). *Why enron went bust*. Fortune.
- Nowicki, D., & Muller, B. (1 March 2007). The keating five. *The Arizona Republic*.
- Pizzo, S., Fricker, M., & Muolo, P. (1989). *In\$ide job—The looting of America's S & Ls*. New York: Harper Perennial Books.
- Poole, W. (2007). President of the Federal Reserve Bank of St. Louis in a speech entitled: Real Estate in the U.S. Economy before the Industrial Asset Management Council Convention in St. Louis on Oct. 9, 2007.
- Ricke, M. (2004). What is the link between margin loans and stock market bubbles? [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=473781](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=473781).
- Romer, C. (2003). Encyclopedia Britannica. [http://elsa.berkeley.edu/~cromer/great\\_depression.pdf](http://elsa.berkeley.edu/~cromer/great_depression.pdf).
- Sharp, K. (3 March 2002). Price-gouging Inquiries Target Enron Overcharges in California May Exceed US\$ 40 Billion. *Boston Globe Correspondent*.
- Shiller, R. J. (2004). *Monetary policy should gently lean against bubbles in irrational exuberance* (2nd ed.). New York: Doubleday.
- Smith, B. M. (2004). *A history of the global stock market from ancient Rome to Silicon Valley*. Chicago: University of Chicago Press.
- Snowden, K. (2010). The anatomy of a residential mortgage crisis: A look back to the 1930s. NBER Working Paper 16244, July 2010.
- Sornette, D., & Woodward, R. (2009). Financial bubbles, real estate bubbles, derivative bubbles, and the financial and economic crisis. [www.er.ethz.ch/presentations/FinancialCrisis\\_CCSS\\_Zurich\\_9June09.pdf](http://www.er.ethz.ch/presentations/FinancialCrisis_CCSS_Zurich_9June09.pdf), <http://hussonet.free.fr/toxicap.xls> dsornette@ethz.ch.
- Steindel, C. (2007). How worrisome is a negative saving rate? Federal Reserve Bank of New York, Current Issues, May 2007.



- Stiglitz, J. E. (2012). The book of jobs. <http://www.vanityfair.com/politics/2012/01/stiglitz-depression-201201>.
- Swensen, D. (2005). *Unconventional success: A fundamental approach to personal investment*. New York: Free Press, Div. of Simon and Schuster.
- Taleb, N. (2007). *The Black Swan: The impact of the highly improbable*. New York: Random House.
- Samuelson, R. J. (2007). The great depression. <http://www.econlib.org/Library/Enc/GreatDepression.html>.
- Wachter, S. M., & Orlando, A. W. (2011). Booms and busts in real estate. *Wharton real estate review*, XV. (Silver Anniversary Issue, Wharton School of the University of Pennsylvania, Wharton School located in Philadelphia, PA).
- Wood, G. (1999). Great crashes in history: Have they lessons for today? *Oxford Review of Economic Policy*, 15, 98–109. <http://ideas.repec.org/a/oup/oxford/v15y-1999i3p98-109.html>.
- White, L. J. (2011). Preventing bubbles: What role for financial regulation? *Cato Journal*, 31(3). (Fall 2011, Copyright © Cato Institute, Washington, DC).
- White, E. N. (2014). Lessons from the Great American real estate boom and bust of the 1920s. In E. N. White, P. Fishback, & K. Snowden (Eds.), *Housing and mortgage markets in historical perspective* (pp. 115–158). Chicago: Chicago University Press.

# Index

## A

- Airlines 135
  - deregulation of 135, 136
- Alternative Minimum Tax (AMT) 75, 76, 82, 83, 84
  - role of 82
- Annual extraction of equity from residence 310

## B

- Bank failures 127, 128, 129, 132, 185
  - history of 129
  - statistical aspects of 130
- Bankruptcy 125, 316
  - causes of 126
  - filings in USA 126
  - of airline companies 134, 136
  - of LTCM 264
  - of Orange County 248
- Bubbles and inflation 35
- Bubbles and Swindles of the late 1990s and 2000s
  - Adelphia 243, 244
  - Albania's Ponzi schemes 265
  - Allied Irish banks 245, 246
  - Barings bank 245
  - Bernie Madoff 248
  - corporate and accounting scandals 267
  - Enron 46, 243, 250, 251, 253, 254, 255, 278
  - long-term capital management 243, 256, 307

- Orange County 144, 248
- other notable bank traders 247
- rogue traders at banks 243, 244
- Societe Generale 245, 247

- Bull markets 150
  - of 1924–1929 54, 55
  - of 1982–1987 54, 55
  - of 1982–1995 215
- Bush tax cuts 87
  - of 2001 78, 83, 84

## C

- Capital gains 5
  - taxes 66, 74, 75, 79, 82
- Case-Shiller real estate indices 283
- Collateralized Debt Obligations (CDOs) 27
- Consumer Price Index 15, 32, 39, 93, 98, 302
- Crash of 1987 63, 153, 216, 222, 225, 227

## D

- Debt 4, 12, 17, 20, 30, 46, 60, 114, 123, 217, 254, 255, 300, 301, 314
  - bankruptcy 125, 335
  - consumer 117
  - federal 85, 112, 113, 115, 214
  - government 113
  - household 117, 120, 122
  - leverage 180
  - long-term 28
  - mortgage 118, 119, 120, 324

state and municipal 117  
 to-GNP ratio 112  
 US federal 107, 116  
   from 1970 to 2012 109  
   history of 107, 109  
 US national 111

Debt-driven asset bubble era of 1982–2013 241

Deposit Insurance 126, 127, 128, 196, 197, 201, 215, 320

Deregulation 17, 71, 131, 132, 134, 136, 137, 154, 196, 197, 200, 202, 203, 205, 210, 214, 243, 250, 251, 255  
   of financial institutions 330

Do bubbles produce wealth 21

Domino effect 12, 45

Dot.com mania 109, 111, 218  
   boom and euphoria 228  
   bursting of the bubble 236  
   Greenspan and the role of the federal reserve 230  
   Merrill-Lynch is bullish on America 239

Dow-Jones Industrial Average (DJIA) 32, 176

## E

East Asia 12, 232, 335, 336, 337, 338

Estate Tax 77, 78, 79, 80, 81, 300

## F

Federal debt \t See Debt 85

Federal Reserve  
   bailouts 3, 12, 13, 14, 26, 39, 53, 56, 57, 63, 150, 185, 221, 262, 306, 325  
   Carlson, Mark 222, 224  
   Fisher, Richard 57, 62, 326  
   Greenspan, Alan 3, 13, 14, 21, 33, 38, 50, 59, 66, 68, 70, 90, 149, 210, 219, 220, 231, 232, 233, 234, 235, 236, 264, 309, 323

monetary policy 26, 36, 57, 58, 60, 65, 67, 68, 71, 73, 178, 189, 301

Poole, William 62, 63

propping up asset markets 58

Santoni, G.J. 53, 54, 55, 221

Financial innovation 16, 17, 23, 26, 170, 171, 190, 290

Florida Land Boom of the 1920s  
   the fall 165  
   the rise 164  
   underlying causes of 166

Foreign loans 44, 45, 107

Fraud 43, 66, 202, 205, 212, 243, 244, 249, 253, 276, 278, 279, 280  
   innocent 147  
   mortgage 289, 303, 304  
   occupancy 303  
   securities 211

Free trade 14, 168, 183

## G

Galbraith, J.K. 1

Gramm, P. 236, 254, 255, 299

Great Depression of the 1930s 180, 280

Greenspan Put 3, 173, 307

Gross Domestic Product (GDP) 15, 16, 23, 24, 26, 28, 30, 120  
   of Japan 331  
   of USA 323

## H

Holland tulip mania 159

Household  
   income 31, 87, 97, 102, 124, 286, 287, 290  
   wealth 27, 29, 101, 124, 154, 188, 241, 242

House prices 14, 32, 37, 40, 170, 190, 280, 283, 285, 286, 292, 293, 298, 301, 302, 306, 314, 327, 328, 341  
   in 1920s 170  
   in hot markets 281, 283  
   in various countries 326

of 1997–2007 171, 281  
 vs. rental index 302

Housing bubble of 1997-2007 46, 120, 171, 327

Housing starts 171, 310, 327, 328

**I**

Income tax 73, 75, 76, 77, 82, 83, 84, 87, 92, 118, 167, 342  
 brackets and budget deficits 84

Inequality  
 global 105  
 of income 101  
 of wealth 98  
 why inequality persists and expands 94, 98

Inflation 13, 15, 23, 27, 34, 35, 38, 57, 66, 82, 98, 111, 138, 184, 194, 215, 225, 280, 283, 306  
 definition of 36  
 index of 39  
 rate of 68  
 risk of 235

Infospace.com 237

Interest rates 10, 11, 12, 13, 15, 16, 17, 31, 48, 58, 60, 65, 67, 72, 73, 118, 132, 151, 154, 171, 173, 178, 184, 192, 194, 195, 196, 197, 198, 204, 205, 216, 221, 222, 226, 231, 233, 236, 248, 257, 266, 305, 306, 307, 341

Internal feedback and endogenous risk 152

Internet  
 capital group 237  
 stock index 230, 234, 237

**J**

Japan 1970-2007  
 background 329  
 collapse of the Japanese bubble 334  
 Japan real estate index 1980-2009 335  
 the Japanese boom and bubble 330

**K**

Kindleberger and Aliber (K&A) 5

**L**

Lincoln Savings 206, 207, 209, 210, 211, 267

Loans to foreign countries 44

Long-term trend line 6, 7, 8

**M**

Manias and bubbles 40  
 rise of 11

Market value of US real estate 332, 340

Medicare 39, 90, 92, 93

Merrill-Lynch 239, 240, 327, 328

Mississippi Company 17, 160, 161, 162, 163

Monetary policy and the federal reserve system 57, 178

Money supply 12, 13, 15, 16, 18, 22, 23, 24, 36, 38, 58, 60, 73, 147, 151, 154, 168, 182, 183, 184, 185, 189, 194, 331

Mortgages packaged into a SIV 298

**N**

NASDAQ 59, 116, 218, 229, 233, 235, 236, 237, 304, 340

New technology 11, 18, 221, 234

New World 17, 160, 161

Next Bubble 27, 327, 338, 340

**O**

Obama, Barack 14, 87, 109, 111, 114, 116, 183

**P**

Pension plans  
 corporate pensions 137, 139  
 defined benefit plans 136, 137, 138, 139, 140, 141  
 defined contribution plans 140, 141  
 public sector 117, 143

Perpetual money machine 23, 27, 28,  
31, 34, 38, 56, 69  
Ponzi Scheme 17, 34, 41, 84, 107, 113,  
116, 198, 204, 245, 249, 267  
of Albania 243  
Price/earnings ratio (P/E) 145, 146, 150,  
254, 331, 333  
Private consumption 24, 241

**R**

Rate of profit 25  
Rationality of  
bankers and experts 44  
investors 42, 166  
Reagan, Ronald 14, 24, 75, 87, 111,  
132, 133, 134, 147, 182, 198, 199,  
207, 210, 213, 214, 215, 216, 279  
Real estate  
and stock market booms 172  
bubbles 155, 210, 281, 326  
Real Estate Boom of 2013–2014 326  
Real wages 14, 29, 31, 62, 71, 104, 241  
Regulation, deregulation and no regula-  
tion 132  
Residential construction 172

**S**

Savings and loan scandal of the  
1980s 128, 214  
deregulation and no regulation 196  
fraud and misconduct 205, 212  
how Mr. Reagan made a bad problem  
worse 198  
the aftermath 213, 262  
The False Spring of 1983 (book) 201  
the original problem 191  
Savings rate 60, 124, 306  
Social security and medicare 90  
South Sea Company 17, 160, 161, 162  
Speculations, bootstraps and swin-  
dles 40, 107  
S&P index 150, 151, 217  
Stages in the boom-bubble-bust  
sequence 18

State and local government debt 117  
Stock market 4, 12, 13, 14, 16, 31, 37,  
56, 57, 62, 64, 93  
Stock market and the economy of the  
1920s  
the crash of 1929 64, 146, 177, 178,  
179, 187  
the real economic boom of the  
1920s 167  
Sub-Prime Real Estate Boom 1998–2007  
credit rating agencies 290, 296, 301,  
308  
deregulation of banks 286, 298  
government policies to promote af-  
fordable housing 299  
government response to the punctured  
bubble 321  
historical background of 280  
home sales for investment—not oc-  
cupancy 290  
house prices during the boom 281  
international mortgage debt 324  
irrational exuberance 13, 35, 220,  
221, 306, 309, 317  
lower lending standards  
sub-prime mortgages 287  
residences as ATMs 310  
role of derivatives in the housing col-  
lapse 295  
role of the Federal Reserve 304  
securitization of mortgages 291  
the punctured bubble 312, 321  
Sub-Prime Real Estate Boom 1998–2007  
deregulation of banks 134  
irrational exuberance 59, 70, 71  
Swindle 41, 107, 113, 116, 119, 243

**T**

Tax policies 73, 74, 189

**U**

US average real weekly earnings 104  
US bailout history 323  
US budget deficits and surpluses 87

**V**

Valuation of common stocks 145  
Value trading vs. momentum trading 5

**W**

Wages 5, 26, 30, 88, 92, 97, 102, 104,  
169, 189, 241, 336

Wealth 2, 8, 15, 21, 26, 27, 35, 60, 81,  
90, 96, 105, 214, 278, 305  
classes 90, 99  
effect 21, 27, 31, 163, 235, 242, 310  
When the bubble pops 3, 31, 47, 154

**Z**

Zero down payment mortgages 288