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Policy Networks and Policy Change

Putting Policy Network Theory to the Test

Hugh Compston

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Abbreviations

9/11	Attack on the World Trade Center in New York on 11 September 2001
ACF	Advocacy Coalition Framework
ALMP	Active labour market policy
BCBS	Basel Committee on Banking Supervision
BIS	Bank of International Settlements
C^4I	Command, control, communications, computing and intelligence
CBRN	Chemical, biological, radiological and nuclear
CEEP	European Centre of Enterprises with Public Participation and of Enterprises of General Economic Interest
CHIPS	Clearing-House Inter-Bank Payments System
CFC	Chlorofluorocarbon
CO_2	Carbon dioxide
COE	Council of Europe
DNS	Domain name server
DTI	Department of Trade and Industry
EMU	Economic and Monetary Union (EU)
EPC	Economic Policy Committee (EU)
EPL	Employment protection legislation
ETUC	European Trade Union Confederation
EU	European Union
EU-15	European Union of 15 Member States as it was prior to the 2004 enlargement
EU-25	European Union of 25 Member States as it has been since the 2004 enlargement
Eurojust	The European Union's Judicial Cooperation Unit
Europol	European Police Office
FATF	Financial Action Task Force on Money Laundering

FDI	Foreign direct investment
FLG	Financial Leaders' Group
FTF	Financial Stability Forum
G7	Group of 7: Canada, France, Germany, Italy, Japan, the UK and the United States
G8	G7 plus Russia
G10	Group of 10, consisting of eleven industrial countries: Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the UK and the United States
G30	The Group of Thirty (Consultative Group on International Economic and Monetary Affairs, Inc.)
GATS	General Agreement on Trade and Services
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
GHG	Greenhouse gas
GM	Genetically modified
GMO	Genetically modified organism
HIV/AIDS	Human immunodeficiency virus/acquired immunodeficiency syndrome
IASB	International Accounting Standards Board
ICT	Information and communications technology
ID	Identity
IEA	International Energy Agency
IIF	Institute of International Finance
ILO	International Labour Organization
IMF	International Monetary Fund
Interpol	International Criminal Police Organization
IOSCO	International Organization of Securities Commissions
IPCC	Intergovernmental Panel on Climate Change (UN)
IRA	Irish Republican Army
IT	Information technology
kT	kilotonnes (1000 tonnes)
MOX	Mixed-oxide (plutonium oxide and uranium oxide)

MP	Member of Parliament
Mtoe	Million tonnes of oil equivalent
NATO	North Atlantic Treaty Organization
NGO	Non-government organization
OECD	Organization for Economic Cooperation and Development
OPEC	Organization of the Petroleum Exporting Countries
OSCE	Organization for Security and Cooperation in Europe
OTC	Over-the-counter (refers to financial derivatives)
PIN	Personal identification number
pkm	Passenger kilometre
R&D	Research and development
SEA	Single European Act (EU)
START	Strategic Arms Reduction Treaty
STD	Sexually transmitted disease
tkm	tonne kilometre
TNC	Transnational corporation
TRIMS	Agreement on Trade-Related Aspects of Investment Measures
TRIPS	Agreement on Trade-Related Aspects of International Property Rights
TWA	Temporary work agency
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
UNICE	Union of Industrial and Employers' Confederations of Europe
VAT	Value added tax
WIPO	World Intellectual Property Organization
WMD	Weapon of mass destruction
WTO	World Trade Organization

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Definition

Billion One thousand million

Introduction

This book is the result of two things: a desire to look at the big picture of where public policy is going and a determination to make theories of policymaking do more work.

Public policy affects our lives in all sorts of ways, and it changes all the time. In what directions are these changes taking public policy? Will public spending continue to rise? How will pensioners fare? Will public policy become increasingly pro-business as time goes on? Although much has been written on issues such as these, most studies focus on selected types of public policy rather than taking a synoptic view. But where is public policy going as a whole? No one is talking about this.

At the same time we find that although political scientists have developed a number of sophisticated and insightful theories of policymaking, little attention has been paid to developing these as predictive theories that can be tested and, to the extent that they survive testing, give us a better idea of where public policy is going than we have at present. Explaining the past, important though this is, is not enough: causal theories such as theories of policymaking should be able to generate plausible and testable propositions about the future as well.

Can this be done? The answer is yes: at least one prominent theory of policy-making, policy network theory, can be developed into a theory of policy change that is powerful enough to be used to illuminate the likely future of public policy in affluent European democracies. By 'public policy' here is meant the activities of government as they affect those towards whom they are directed, such as provision of pensions, as distinct from government intentions or the effects of what governments do.

The analysis in this book has two main parts. First, a version of policy network theory based on defining policy networks as sets of political actors drawn together by resource interdependencies is developed into a full-fledged theory about the causal processes leading up to policy change. This theory is then put to the test by (1) using it to generate hypotheses about the likely effects on the future of public policy of several of the most significant general trends that are expected to operate in affluent European democracies over the next 20 years or so, and (2) using data about recent policy trends to test the plausibility of these hypotheses. The research on which this book is based thus deepens the analysis of policy change set out in my book *King Trends and the Future of Public Policy* (Compston, 2006) by clarifying its theoretical foundations, and then extends it by testing the propositions about the future of public policy which this analysis generated.

Chapter 1 kicks off the analysis by introducing the basic theory used in this book. It begins by making the point that one of the main versions of policy network theory in the political science literature is based on defining policy networks in terms of resource interdependencies. This is the starting point for the analysis in this book. In the second part of the chapter, this idea is expressed more precisely by defining a policy network as a set of political actors who engage in resource exchange over public policy (policy decisions) as a consequence of their resource interdependencies. It is pointed out that this definition includes within it a causal dynamic, namely the dependence of political actors on each other for resources that pushes them to engage in resource exchange over public policy. The third part of the chapter builds on this definition by defining policy network theory as the ensemble of (1) the above definition of the term 'policy network' and (2) the propositions that necessarily follow from acceptance of the idea that policy change can be largely explained in terms of policy networks defined in this way. Thus conceived, policy network theory can be summarized as stating that policy change is largely determined by resource exchange involving actors and their resources, preferences and strategies, which in turn are necessarily influenced by perceptions of problems and solutions and, more contingently, by policy network–specific rules and norms.

Chapter 2 focuses on political actors and their resources. It begins with a close examination of the concepts of resources and resource exchange used in the seminal work of Emerson (1962) in order to unpack exactly what resource exchange means in the context of policy-making. On the basis of this, a resource is defined in the context of policy network theory as being anything that (1) is controlled by a policy actor, (2) is desired by another policy actor, and (3) can be transferred or exchanged in some relevant sense. The chapter then goes on to identify the main types of political actors at national and other levels of governance that are typically involved in resource exchange over public policy as a consequence of their resource interdependencies, namely political executives, other politicians, civil servants, judges, firms, interest groups, cause groups, the media and non-government experts. The electorate is also included as a sort of quasi-political actor on the grounds that governments often seek to exchange policy concessions for electoral support. The focus on identifying exactly what is exchanged leads to a distinction being made between resources that are actually exchanged, or tradable resources, such as political support, and resources that are not exchanged but rather make it possible for political actors to control and exchange tradable resources, which I call enabling resources to stress their auxiliary character, such as a large organizational membership. The final part of the chapter sets out a list of tradable resources that is designed to be as comprehensive as possible. This consists of resources traded by public actors in exchange for other resources (policy amendments and access to the policy-making process), resources that may be traded by public or private actors (veto power, information, cooperation with implementation, recourse to the courts, political support, and patronage) and resources that are available to private actors alone, in particular firms (private investment and fluid funds).

The purpose of Chapter 3 is to develop policy network theory as formulated in the first two chapters into a full-fledged theory of policy change. The basic argument is as follows. First, policy decisions can be conceptualized as being mainly the product of resource exchanges in which the policy preferences of relevant public actors prior to resource exchange are amended by these public actors to obtain needed resources from other actors. Second, in terms of policy network theory the direct causal antecedents of changes in resource exchange are changes in the resources, preferences and strategies of network members, and changes in rules and norms. Third, changes in these variables can be caused by changes in each other and by changes in perceptions of problems and solutions. Finally, changes in these five policy network variables can also be caused by changes in exogenous factors, defined as perceived and actual changes in reality other than these network variables. The chapter concludes that policy network theory is a theory of policy change in that it specifies the proximate causal mechanism of policy change (resource exchange), the immediate determinants of resource exchange (actors and their resources, preferences and strategies, plus rules and norms) and ways in which these network variables can be influenced by other variables.

Chapter 4 is devoted to setting out a methodology for using this version of policy network theory to generate substantive hypotheses about the future direction of policy change. This consists of three steps: (1) identifying relevant independent variables; (2) plugging these independent variables into one or more of the causal pathways identified in the previous chapter that lead via changes in resources, preferences and strategies through resource exchange to policy change; then (3) using the logic of policy network theory to trace their implications (if any) for the future direction of public policy, other things being equal. In the simplest case a certain type of change in an independent variable might imply an increase in the resources of a particular political actor which then, via resource exchange, implies a policy change in the direction favoured by that actor, other things being equal.

To keep things manageable the analysis focuses on identifying ways in which simple unilinear trends in important exogenous variables imply unilinear trends in the content of public policy. The precise criteria for a trend to be included in the analysis as an independent variable are that its existence is convincingly verified, it affects large numbers of people, and it is expected by relevant experts to continue operating at least up to 2020. Trends that meet these three criteria are referred to as 'king trends' to distinguish them from all other sorts of trends and highlight their significance, and comprise technological trends (such as developments in information and communications technology), climate change, the growth and diversification of production and consumption, increasing use of energy and transport, increasing women's and services sector employment, economic internationalization (globalization), media growth, population ageing, rising levels of education, the trend towards smaller households, secularization and sexual liberalization.

Having set out a methodology for using policy network theory to derive hypotheses about the implications of king trends for the future of public policy, the next step (Chapter 5) is to construct a methodology for testing these. The obvious way to test hypotheses about the future is to wait until the future arrives and see what happens. However in the meantime it is possible to get an idea of the extent to which hypotheses about the implications of king trends for the future of public policy are consistent with reality by testing them against evidence about current policy trends. This approach to testing is legitimate because the trends used as independent variables are those that have already been in operation for some time, so that if they affect public policy their impact should already be evident, and because the methodology for deriving the hypotheses to be tested does not include any information about past policy trends, which means that there is nothing tautological about using this information to test them. The chapter then sets out and justifies a specific methodology for testing hypotheses about the future of public policy against evidence about recent policy trends in the 12 richest EU member states (Luxembourg excepted).

In Chapters 6–11 the methodologies developed in Chapters 4 and 5 are applied to generate and test substantive hypotheses based on propositions about the impact on the future of public policy of 16 of the 19 king trends. Details of why it was not possible to test all policy implications of all 19 king trends are given in Appendix 1.

Drawing the results of these tests together (Chapter 12) reveals that policy network theory as a theory of policy change emerges unscathed from this extensive battery of tests. It follows that we should accept that its policy implications as a whole constitute a picture of the future of public policy that is likely to be reasonably accurate. Accordingly the chapter – and the book – concludes by drawing together the policy implications of policy network theory applied to king trends into a synoptic picture of the future of public policy insofar as it is influenced by king trends. This indicates that we should expect more business-friendly policies; more employment-friendly policies; more intrusive, technological and internationalized law enforcement and security policies; more women-friendly policies; more liberal social policies; more vigorous climate policies; and more vigorous policies to counteract the negative effects of technological innovation and economic internationalization.

1
Policy Networks and Resource Dependency

1.1 Introduction

The aim of this book is to make a major theory of policymaking do more work, and in so doing obtain a better idea of where public policy is going than we have at present. This involves developing one of these theories into a detailed model of the causal processes leading up to policy change, using the resulting model to generate predictions about the future of public policy, and testing the plausibility of these predictions using evidence drawn from the past. The theory chosen for this task is policy network theory. This is not the only theory of political causation that could be used in this way, but it is a prominent theory that is well established in the political science literature and, as we shall see, one that is equal to this task.

The aim of this chapter is to introduce the particular version of policy network theory that will be used. It begins by surveying conceptions of policy networks discussed in the political science literature to make the point that many versions of this theory are based on defining policy networks in terms of resource interdependencies. It then goes on to set out a precise definition of a policy network based on this idea of resource interdependency. The final part of the chapter builds on this by defining policy network theory as the ensemble of the definition of the term 'policy network' and the propositions that necessarily follow from acceptance of the idea that policy change can be largely explained in terms of policy networks defined in this way.

1.2 Conceptions of policy networks in the literature

The term 'policy network' has been used in political science at least since the 1970s, although the phenomena to which it refers have of course been described in other terms before this. In its most basic sense it refers to the set of political actors inside and outside government who are involved in, or take an interest in, the making of public policy, and/or the relations between these actors. However political scientists have also used the term in more specific ways based on defining it more precisely, and a literature has grown up in which it is one of the most central concepts, if not *the* most central concept. This literature, as one might expect from academic discourse, is rather disparate, so that there are many different versions of what exactly policy networks are (Thatcher, 1998, p. 390). Some use the term to mean something different from what it means for others, and some use different terms to describe what others call a policy network. In other cases, variations in usage are largely attributable to the varying analytical focuses of analysts and the precise countries and sectors that are being observed.

One feature that many of these uses of the term share, however, is the idea that the relationships between network members are based on resource interdependencies: each actor wants something from one or more other actors and is prepared to exchange something of their own in order to get it. In her extensive survey of policy network literature, Tanja Börzel concludes that although the network concept varies considerably between and within different disciplines:

> They all share a common understanding, a minimal or lowest common denominator definition of a policy network, as a set of relatively stable relationships which are of non-hierarchical and interdependent nature linking a variety of actors, who share common interests with regard to a policy and who exchange resources to pursue these shared interests acknowledging that cooperation is the best way to achieve common goals.
>
> (Börzel, 1998, p. 254)

Beyond this, Börzel distinguishes between two different 'schools' of policy network analysis. The 'interest intermediation school' refers to analyses that interpret policy networks as a generic term for different forms of relationships between interest groups and the state, and share a view of policy networks as being based on power dependencies between governments and interest groups in which resources are exchanged. The 'governance school' refers to those analyses that interpret the term more narrowly to refer to 'a specific form of public–private interaction in public policy (governance), namely the one based on non-hierarchical coordination' (1998, p. 255; for a more recent survey of network concepts see Rhodes, 2006, pp. 427–30).

Perhaps the most prominent version in Britain of what Börzel calls the interest intermediation version of policy network theory is that put forward by Rod Rhodes. This picks up earlier American work in defining a policy network as 'a complex of organizations connected to each other by resource dependencies' (Benson, 1982, p. 148) and views policymaking as consisting largely of a process of exchanges of resources using specific political strategies within the understood 'rules of the game' (Rhodes, 1985, pp. 4–5). This stress on the importance of 'rules of the game' is another widely shared characteristic of policy network theories. Following Rhodes, Smith argues that if a government wants to achieve a particular policy goal with minimum conflict, it needs the assistance of groups in the development and implementation of policy. This can be obtained in exchange for granting these groups access to the policy process. The impact of a network on public policy is a function of the relative power of its members, which depends on their resources and the way they are exchanged (Smith, 1993, p. 59). Similarly, Van Waarden sees policy networks as arising from the interdependence of various actors: administrators need political support, legitimacy, information, coalition partners against bureaucratic rivals, and assistance with implementation, while interest groups want access to policymaking and implementation and concessions to their interests. This leads to resource exchange that, over time, may become institutionalized into networks (1992, p. 31). Hay and Richards define policy networks as 'strategic alliances forged around a common agenda (however contested, however dynamic) of mutual advantage through collective action' (2000, p. 12). In other words, policy actors only participate in the sort of interaction that characterizes policy networks if they think they can get something out of it. This is not very far from Rhodes's resource dependency model.

Resource dependency is also central to the more recent literature on governance. Rhodes, for example, defines governance as self-organizing, interorganizational networks and focuses on power dependence and the exchange of resources using strategies within known rules of the game. Governance is seen as being broader than government in that it includes private actors, and networks are seen as self-organizing and relatively autonomous from the state (Rhodes, 2000, pp. 60–1).

Klijn and Koppenjan argue that the network approach presents public policy as the result of the interaction between a multitude of organizational actors, each of which depends on other organizations for resources and therefore needs to exchange resources in order to survive and achieve its objectives. As actors interact, patterns of resource exchange emerge and rules develop which regulate interactions and to some extent insulate the network from the outside world (Klijn and Koppenjan, 2000, p. 139). Stoker also sees governance as involving power dependence: '(a) organizations committed to collective action are dependent on other organizations; (b) in order to achieve goals, organizations have to exchange resources and negotiate common purposes; (c) the outcome of exchange is determined not only by the resources of the participants but also by the rules of the game and the context of the exchange' (1998, p. 22).

We could add further examples to this list of theorists who define policy networks in terms of resource interdependence, but it should already be clear that this view is widespread in the political science literature.

Before leaving this literature, however, it is worth looking briefly at ways in which policy networks so defined vary.

First of all, it is worth bearing in mind that policy networks exist in different areas of public policy and at different levels of government, and may be vertically integrated (Smith, 1993, p. 65).

Perhaps the most prominent dimension of variation in the literature is described as a continuum between small, closed, consensual policy communities and larger, looser, more conflictual issue networks. At one end a policy community usually involves a single government agency or a section within that agency, one or two interest groups plus, in some cases, experts, and will often be focused on a particular institution such as an advisory committee. Membership is stable, members interact frequently and there is a high degree of consensus over policy aims and rules of the game that at times amounts to a shared ideology that defines policy problems and policy options, leading to issues being seen as technical rather than political. Private (non-government) network members have information, legitimacy and implementation resources that can be exchanged for some control over policy, providing that their leaders can ensure that the members of their organization will accept agreements that are reached. The cooperation of these actors increases the capability of state actors to intervene in society without the use of force. There may also be other more peripheral members who lack sufficient resources to exert much influence. Other groups are kept out. At the other end of the continuum, issue networks involve several government departments, agencies or subcommittees and a host of interest groups. The membership of the network changes frequently; interaction is erratic; there is no consensus on aims or rules of the game; and members have few resources to exchange with government and therefore little influence on policy (Rhodes, 1986, ch. 2, Marsh and Rhodes, 1992, pp. 251, 254–5, Rhodes and Marsh, 1992, p. 13, Smith, 1993, pp. 59–68).

Perhaps the ultimate classification of ways in which policy networks vary is that of Van Waarden, who identifies no fewer than seven major dimensions of variation (Van Waarden, 1992, pp. 33–8):

First, the number and type of actors involved. Relevant characteristics include their needs and interests, as these form the basis of the resource interdependencies that give rise to policy networks; the structures, capacities, resources and performances of the various actors; their degree of professionalization; and their mandate, role conception and attitudes.

Second, their functions – what the networks actually do – the most common of which are channelling access to decision-making, consultation (exchange of information), negotiation (resource and/or performance exchange), coordination of action, and cooperation in policy formation, implementation and legitimation. Breadth of issues covered is also relevant here.

Third, their structure, by which is meant the pattern of relations between actors. Important variables here include network size (number of actors), boundaries (open/closed), type of membership (voluntary/compulsory), pattern of linkages (chaotic/ordered), intensity or strength of the relation (frequency and duration), density or multiplexity (extent to which actors are linked by multiple relations), clustering or differentiation in subnetworks, linking pattern or type of coordination (hierarchy, horizontal consultation and bargaining, overlapping memberships, mobility of personnel between organizations), centrality (degree of centralization), degree of delegation of decision-making to central units by members, and the nature of the relations (conflictual/competitive/cooperative).

Fourth, the degree of institutionalization of policy networks, by which is meant the formal character of the network structure and its stability.

Fifth, their rules of conduct, by which is meant conventions of interaction. Variations here include whether participants see the relation as adversarial or search for consensus, whether they share a sense of public interest or accept that narrow self-interest rules, whether secrecy or openness prevails, whether issues are politicized or not, and whether interactions are characterized by rationalist pragmatism or ideological dispute.

Sixth, power relations within the network, which are a function of resources, needs and organizational characteristics such as size, degree of centralization and whether participant organizations (such as employer organizations) have a representational monopoly in their functional areas. The four main types of power relations identified are capture of state agencies by business, autonomy of public actors from organized interests, capture of private interests by the state, and symbiosis, or a balance of power.

The final dimension on variation relates to the strategies used by network members. State strategies for selecting interlocutors, for example, include allowing societal actors to form networks; recognizing certain interests and giving them privileged access (for example seats on committees); and actively supporting certain interests by means such as allowing them monopoly access to certain goods, granting subsidies and/or tax breaks, granting the authority to tax constituents, making membership compulsory, granting private rules the force of law, and repressing rival organizations. They also include creating networks of private organizations or changing their structure, for example by means of fostering the formation of peak organizations. Agencies may also try to influence other characteristics of networks such as conventions of interaction, terms of exchange, network function, and terms of access, consultation, negotiation, coordination and cooperation.

1.3 Policy networks defined

We have seen that the idea of resource dependency is central to the definitions of policy networks used by many of the most prominent analyses in this area. Although this does not mean that this type of definition must be chosen as the point of departure for this analysis, adopting it for this purpose is appropriate in view of the fact that I wish to build on existing work rather than start entirely anew.

Accordingly, for the purposes of this analysis a policy network is defined as a set of political actors who engage in resource exchange over public policy (policy decisions) as a consequence of their resource interdependencies.

This is quite a simple definition, lacking even all the elements that Börzel includes in her encapsulation of the 'common understanding' of the term, but it has the merit of clarity and moreover includes within it – and this is crucial – its own causal dynamic, namely the dependence of political actors on each other for resources that pushes them to engage in resource exchange over public policy. That is, the definition is not just a simple description of a certain type of set of political actors: it also identifies the causal driver that generates policy networks and motivates the further actions of their members, at least in part. This, as we shall see, has far-reaching implications for the analysis of policy change.

1.4 Policy network theory defined

Powerful though this definition is, it is not in itself a theory of policymaking or policy change. Together with the propositions that it either presupposes or entails, however, a logically coherent and analytically penetrating theory of policymaking and policy change can be constructed.

What, then, are these propositions that are presupposed or entailed by defining policy networks in terms of resource exchange? Consider the following.

1. There are policy decisions.

As a theory about how policy decisions are made, policy network theory obviously presupposes the existence of policy decisions as the dependent variable, understood as authoritative choices about policy instruments and their settings. This in turn presupposes the existence of legal rules that specify who is authorized to take decisions in any given area, under what conditions and using which procedures.

It is important to be clear about the precise identity of this dependent variable. Ultimately the choice of dependent variable depends on what is of interest to the analyst. For me it is public policy defined as the activities of government as they affect those to whom they are directed, because this is how government affects our lives, although there may be unintended effects as well. This means taxes, services, subsidies, regulation, cash benefits, law enforcement, military intervention and so on.

But we can't expect the actions and interactions of policy network members to completely determine public policy as it is implemented because conditions in the world that have nothing to do with the relevant network may affect what happens in practice. A shortage of doctors, for instance, may make it impossible for governments to put into place the medical services for which funding has been made available.

For this reason we need to focus not on policy as implemented but on the decisions about policy instruments and settings that precede implementation, as policy decisions in this sense are more directly determined by policy networks. If we are interested in the effects of policy networks on public policy, therefore, it is the policy decision that specifies instruments and settings that is the appropriate dependent variable. This means legislation, regulations, policy decisions that do not require legislative approval, contracts and grants (Miller, 2000, p. 4).

2. There are individuals and/or groups who possess (perceived) tradable resources.

Defining policymaking in terms of resource exchange presupposes that there are individuals or groups (political actors for short) who possess resources that can be exchanged. The exact terms of any resource exchange depend not only on the resources that each party to the exchange actually controls but also on how they are perceived: threats to disinvest, for example, are political resources only if they are believed.

To some extent the nature of tradable resources can be deduced from the nature of policy decisions. If there are policy decisions that are legally binding, then there must be actors who possess the legal authority to take these decisions and therefore possess the capacity to exchange policy amendments for the resources that they want. These actors are termed 'public actors' to distinguish them from actors who lack this authority, or 'private actors'.

What would we expect that public actors thus defined would want from others?

First, that any decisions they make can get through any formal decision-making procedures further down the line. A minister, for instance, wants to ensure that any decision made that requires legislative approval gets it. This means that any actor with the power of veto further down the line, such as a small party that holds the legislative balance of power, possesses a resource – approval of the decision, that is, *not* exercising the veto – that the public actor wants, thus creating the possibility of resource exchanges that consist of trading policy approval on the part of the veto actor for policy amendments on the part of the relevant public actor.

Second, a public actor wants to ensure that any decision that they make is not blocked in court. This means that where there is some doubt as to the legality of a policy decision, any actor that has the legal standing and resources to challenge this decision in court possesses a resource that the public actor wants, that is, the power to decide *not* to go to court. This creates the possibility of exchanging a decision not to go to court for policy amendments.

Third, a public actor wants to ensure that the policy is technically and politically as well designed as possible, which gives them a reason to seek the information necessary to ensure that this is done. This creates the possibility of exchanging key information for policy amendments or, at least, for access to the policymaking process.

Fourth, a public actor wants to ensure that the policy will be faithfully implemented. This means that any actor who has the capacity to facilitate or obstruct implementation possesses a resource that the public actor wants, namely cooperation on implementation, which creates the possibility of exchanging cooperation with implementation for policy amendments.

Fifth, governments in democratic countries need to be re-elected in order to retain office. This means that any actor that has the (perceived) capacity to mobilize voters for or against the government has a resource that elected public actors want, namely the capacity to mobilize voters in favour of the government, or at least to refrain from mobilizing them against the government. This creates the possibility of exchanging support for the government, or at least abstention from outright opposition, for policy amendments.

It is important to note here that although resource exchange tends to imply some degree of equality – each party trades something and ends up better off as a consequence – in fact exchange relations may be very unequal. In a hold-up the robber gets the money in exchange for not killing the bank teller: both parties get what they want, but the relationship is nevertheless one of dominance of the robber over the teller. We can tell this for sure because the robber gets something he didn't have before, whereas the teller only gets to keep what he already had, his life, in exchange for giving the money to the robber. That is, resource exchange can mean losers as well as winners.

3. Policy actors have distinct policy preferences.

Engagement in resource exchange presupposes that network members have distinct preferences about what the content of policy decisions should be. Otherwise why bother engaging?

Insofar as preferences are determined by obvious interests and organizational missions, certain types of policy preferences can be ascribed to certain types of network members. Elected executives, for example, would be expected to favour policies that are thought to maximize their chances of re-election, such as those that encourage economic growth, improve public services and cut taxes, while corporations and business groups would be expected to prefer policies that cut taxes and regulation.

However the term 'preference' is preferred to 'interests' in this analysis because actors may also have preferences that cannot be reduced to interests, for example, commitment to an other-regarding cause such as tackling world poverty, as research confirms the obvious fact that people do not act solely on the basis of perceived self-interest but are also motivated by other values (Fischer, 2003, p. 25). Fritz Scharpf, for example, sees preferences as being shaped not only by individual self-interest (physical well-being and social recognition) and corporate self-interest (organisational survival, autonomy and growth) but also by normative role orientations (Scharpf, 1997, pp. 64–5). To this we might add personal values, partisanship and ideology.

In addition, what actors want cannot be separated from cognitive beliefs: self-interest, for example, may be a motive, but it cannot generate specific policy preferences without being underpinned by beliefs about things such as what the proposed or actual policy consists of, how it might affect the policy actor concerned and whether there are alternatives. That is, what someone wants is conditioned by what they think is going on in the world, how causal connections work in the relevant policy area, and other cognitive beliefs.

Finally, the policy preferences of any given actor may vary according to circumstances: business firms may demand trade liberalization in some circumstances, for example, but protection in others.

What this means is that ultimately actors' preferences cannot be reliably identified simply on the basis of the type of actor that they are. Instead they need to be identified on the basis of observation of what particular policy actors say and do.

4. There are (perceived) policy problems and solutions.

Policy preferences and the existence of resource exchange presuppose that one or more actors consider that there are problems in the world to which policy decisions can provide solutions.

However the complexity of reality and the limited cognitive resources of human beings mean that understanding the causal relations in the world that underlie conceptions of problems and solutions must necessarily involve simplifying and relating new information to existing ideas in order to produce meaningful and structured interpretations of what is going on. Sociological institutionalists argue that information is selected and processed by cognitive structures (variously named schemas, frames or inferential sets) that range from worldviews down to specific filing systems. Psychological research indicates that these cognitive frames determine 'what information will receive attention; how it will be encoded; how it will be retained, retrieved and organized into memory; and how it will be interpreted, thus affecting evaluations, judgments, predictions and inferences' (Scott, 2001, p. 38).

What this means is that the problems as identified by policy actors are not objective descriptions of events and conditions in the world but rather perceptions of these, defining 'perceptions' in the dictionary sense of 'ways of regarding, understanding, or interpreting' (*Concise Oxford Dictionary*). Proposed solutions to these problems, of course, are constructions from the start because they do not purport to describe situations in the world but rather refer to what an actor claims would happen if a certain policy decision were taken. In any particular policy area, then, much depends on which cognitive frames relevant policy actors are using.

5. Policy actors have strategies designed to maximize their chances of realizing their policy preferences.

If resource exchange is to be used by a policy actor to help them achieve their policy preferences, it follows that they must have a strategy, defined as a plan of action designed to maximize their chances of realizing their policy preferences. Since policy network theory specifies that policy decisions are determined mainly by resource exchange, it follows that actors' strategies must include decisions about how available resources are to be deployed. They must also include communicating to other political actors their policy preferences, diagnoses of problems and solutions and (at least to some extent) their intentions in relation to deployment of resources, as well as the collection of information about other actors' preferences, resources, conceptions of problems and solutions, and strategies. Forms that this communication may take include provision of information, argument, bargaining, and the making of threats and promises.

6. There are incentives for policy actors to regulate their interaction.

To the extent that policy actors remain dependent on each other for resources, they have an incentive to exchange resources on a continuing basis and therefore an incentive to establish mutually recognized procedures (legal rules or informal norms) that facilitate interaction by means such as defining prescribed, permitted and prohibited actions and interactions; establishing and sustaining norms of honesty and reciprocity as well as routines and procedures; and assigning particular roles to particular network members.

Although there are powerful arguments to the effect that the rules and norms that affect the workings of policy networks are determined not only by the incentive to manage interactions but also by factors such as culture (symbolic systems), inherited values and understandings, the pre-existing structure of political institutions, and social structure (see, for example, March and Olsen, 1989; Peters, 1999; Scott, 2001), the existence of these factors is not logically entailed by our definition of policy networks, which means that they are not policy network variables as such. Because the aim of this study is to test policy network theory in particular, they are therefore largely sidelined from this analysis. One issue for the analysis, therefore, is the extent to which policy network theory can make plausible predictions about the future of public policy that are consistent with the available evidence without making specific reference to factors such as these.

This brings us to the end of the list of propositions that logically follow from the view that public policy is at least in large part determined by resource exchange within policy networks. Putting these all together reveals that the variables that are integral to the resource dependency version of policy network theory – that according to policy network theory determine the content of policy decisions – are policy actors and their tradable resources, preferences, strategies, and perceptions of problems and solutions, plus policy network-specific rules of interaction. Other variables are also important in determining the shape of public policy, in particular the frames that influence perceptions of problems and solutions, the factors that determine how actors interpret their strategic environment, and rules and norms that originate from sources other than the desire to manage intra-network interactions, but because they are not entailed by our definition of policy networks they are not themselves policy network variables and are therefore not central to the main thrust of the analysis.

1.5 Summary

This chapter has laid the theoretical foundations for the analysis in this book by setting out a conceptual schema based on defining policy network theory as the ensemble of (1) a definition of a policy network as a set of political actors who engage in resource exchange over public policy (policy decisions) as a consequence of their resource interdependencies, and (2) the propositions that this definition of policy networks presupposes or entails. This means that the version of policy network theory used in this study holds that public policy is largely determined by resource exchange involving actors and their resources, preferences, strategies and perceptions of problems and solutions, plus policy network–specific rules and norms.

The next chapter takes this analysis a step further by looking more closely at the types of political actors that tend to be members of policy networks and the resources that they exchange.

2
Actors and Resources

2.1 Introduction

In Chapter 1 the version of policy network theory that will be used to generate testable hypotheses about the future of public policy was introduced. This holds that public policy is largely determined by resource exchange involving actors and their resources, preferences, strategies, and perceptions of problems and solutions, plus policy network–specific rules and norms. As resource exchange is central to this version of policy network theory, it is vital to be quite clear about what this means before going on to develop the theory into a theory of policy change. This chapter is designed to obtain this clarity by identifying who the main types of policy network members are and exactly what types of resources they have at their disposal. Accordingly it begins with a close look at the nature of resources and resource exchange, goes on to briefly discuss the identities of typical policy network members, continues with a review of the literature relating to political resources, and concludes by setting out a typology of the main types of resources that can be exchanged in resource exchange over public policy.

2.2 The idea of resources and resource exchange

Theories of power dependency and resource exchange have a longer history in sociology and social psychology than in political science (see, for example, Levine and White, 1961; Emerson, 1962; Blau, 1964; Benson, 1975). Although analyses in these traditions pay little attention to policy networks as such, they do make some relevant points.

In particular, power is conceptualized in terms of dependency. The argument is as follows.

'A depends on B if he aspires to goals or gratifications whose achievement is facilitated by appropriate actions on B's part'. This implies that B is in a position to grant, deny, facilitate or hinder A's gratifications, putting B in a position to make demands of A that A has to accede to if he is to obtain gratification. 'Thus, it would appear that the power to control or influence the other resides in control over the things he values ... In short, *power resides implicitly in the other's dependency'* (Emerson, 1962, p. 32).

Emerson then distinguishes between two dimensions of dependence: 'The dependence of actor A upon actor B is (1) directly proportional to A's *motivational investment* in goals mediated by B, and (2) inversely proportional to the *availability* of those goals to A outside of the A-B relation' (1962, p. 32).

Resource dependency, then, means that an actor wants or needs something that is controlled by another actor. Resource exchange presupposes that the relevant resource is transferable. On the basis of this we can define a resource in the context of policy network theory as being anything that (1) is controlled by a political actor, (2) is desired by another political actor, and (3) can be transferred or exchanged in some relevant sense.

Scharpf draws on Emerson and others in this tradition to formulate a similar argument but one that is focused more directly on policymaking. First, he stresses that while it would be unlikely for an exchange relationship to be maintained if one of the parties received no benefit from it at all, exchange need not be symmetrical: one party may benefit more than the other from the resource exchanges that take place (1978, p. 354). A public actor in a strong position, for example, may be able to obtain the complete cooperation of a private actor in return for very minor policy amendments, but may be obliged to give large policy amendments to obtain minimal improvement in cooperation if they are the weaker actor. Second, he argues, like Emerson, that the dependency characteristics of the relationship can be described in terms of the importance to the recipient of the resource received relative to their total resource needs as well as the extent to which the resource could easily be replaced from other sources (Scharpf, 1978, pp. 354–5).

2.3 The identity of policy network members

Different policy networks have different types of members. The aim of this section is to identify the main types of organizations and individuals that are members of policy networks, although it is important to bear in mind that network boundaries may not always be clear-cut.

The conscious agents within policy networks are individual men and women, most of whom are acting as representatives of organizations of some sort. In abstract discussions of policy networks it is convenient to identify these organizations as the actors, but in reality what we have are 'composite actors' in which intentional action above the level of the individual is produced by internal interactions (Scharpf, 1997, p. 52). To this we might add the observation that the nature of composite actors changes over time, so that what we have in fact are evolving composite actors.

These composite actors can be divided into two main types.

First, there are state or public actors. The point of distinguishing public from private actors is that public actors are the ones that, singly or jointly, are legally authorized to make policy decisions. At national level it is departments, self-contained specialist units within departments, regulatory bodies, commercial agencies, non-departmental bodies and quasi-judicial bodies (Miller, 2000, pp. 22–4) that are generally the most frequent participants in policy networks, but members of the political executive – ministers, heads of government and, in some countries, heads of state – often participate in discussions and negotiations and in the end make, or at least approve, the policy decisions that emerge. Where these require legislation, and passage is not in effect guaranteed by executive approval, for example because there is a constitutional separation of powers as in the United States, members of the legislature are involved, especially those on specialist committees. There are also other types of national-level public actors, such as the armed services, that are involved in certain policy areas. In numerous policy areas public actors at the European Union (EU) level (in the case of EU member states) or the subnational level (especially in federal systems) are also involved. The EU decision-making process means that in many policy areas foreign governments are involved in decision-making that affects member states. And it is important not to forget the role of the American government where it considers American interests are involved.

Perhaps the most often-identified private actors in policy networks are interest groups, such as employer organizations and trade unions as well as campaign groups such as environmental groups, but public actors also deal directly with individual business firms. Other types of private organizations, such as religious groups, may also be involved. Sabatier among others points out that to the extent that ideas are important, and they surely are, then journalists, researchers and policy analysts also have a part to play (Sabatier and Jenkins-Smith, 1999, p. 119).

Finally, the fact that democratic governments (political executives) live under the shadow of the next election brings the electorate into play as a sort of quasi-policy actor in that where the public is aware of a policy issue and cares, public actors may in effect deal directly with voters by making policy amendments designed to elicit higher opinion poll ratings in return.

2.4 Resources: the literature

The political science literature is replete with references to political resources in the sense of characteristics that help political actors get their own way. Table 2.1 gives an indication of the types of resources

Table 2.1 Resources of members of intra-government policy networks

Author(s)	**Resources**
Smith (2000, p. 35) on British prime ministers, ministers and officials	Prime minister: patronage, authority, political support by party, political support by electorate, Prime Minister's Office, bilateral policymaking
	Ministers: political support, authority, department, knowledge, policy networks [with private actors], policy success
	Officials: permanence, knowledge, time, Whitehall network, control over information, keepers of the constitution
Smith (2000, p. 38) on British ministers and officials, to make the point that they need each other	Civil servants: time, expertise, experience, knowledge, Whitehall network
	Ministers: access to Cabinet, political alliances, political support and legitimacy
Dunleavy and Rhodes (1983, pp. 113–14) on central–local relations in Britain	Central government: control over legislation and delegated powers; provision of a large part of local service finance; setting of standards for, and inspection of, some services; electoral mandate
	Local government: employment of all personnel in local services; local knowledge and expertise; control of policy implementation and key knowledge about how to administer policy; and independent power to raise taxes (rates) to finance services

listed by authors examining policy networks that consist solely of public actors such as ministers, departments and agencies.

Smith argues that within British government 'goals are achieved as a result of resource exchange that occurs in the relationships between prime minister, Cabinet and other actors within the core executive' (Smith, 2000, p. 26). Some of these resources are structurally determined, such as the legal powers of the prime minister, while others vary according to particular circumstances: the effective authority of a minister, for example, 'varies with the success of a minister, the degree of support he or she has in the party and, sometimes, personality' (Smith, 2000, p. 27). However the effectiveness of actors in the core executive depends not only on their resources but also on the strategies and tactics they adopt in using their resources. Furthermore, the ability of actors to use their resources varies according to circumstances: a prime minister, for example, is less dependent on Cabinet colleagues after a big election win than when they are unpopular. The Treasury and chancellor are seen as having resources unavailable to other departments, in particular access to other departments, and are seen as unbeatable when in alliance with the prime minister (Smith, 2000, p. 28, 40).

Table 2.2 gives an indication of the types of resources listed for policy networks that include both public and private actors.

Table 2.2 Resources of members of mixed public–private policy networks

Author(s)	**Resources**
Rhodes (2006, p. 431)	Constitutional–legal
	Organizational
	Financial
	Political
	Informational
Marsh and Rhodes (1992, p. 263) on key resources	Economic position
	Knowledge
Dowding (1995, p. 146) as amplified by Dahan, Doh and Guay (2006, p. 1582)	Knowledge or information
	Legitimate authority
	Conditional incentives to affect the interests of others, such as a commitment by a multinational firm to build housing facilities in return for a license to operate
	Unconditional incentives, such as a campaign contribution regardless of whether the elected politician will return this favour
	Reputation

Continued

Table 2.2 Continued

Author(s)	**Resources**
Pappi and Henning (1998, p. 557)	Expert knowledge
	Ability to mobilize the public or specific groups in favour of, or against, policy proposals
	Fluid funds used as incentives or bribes
	Authority to make binding decisions
Maloney, Grant and McLaughlin (1994, p. 23)	Ability to organize, organizational cohesion (members' commitment to organizational goals), strategic location (control of indispensable resources) (from Rose, 1985, pp. 249–54)
	Economic significance, size (membership), knowledge (technical expertise or political sophistication), implementation power
Scharpf (1997, p. 43) on 'capabilities': 'all action resources that allow an actor to influence an outcome'	Personal properties such as physical strength, intelligence and human or social capital
	Physical resources such as money, land and military power
	Technical capabilities
	Privileged access to information
	Action resources 'created by institutional rules defining competencies and granting or limiting rights of participation, or veto, or of autonomous decision'

Kickert, Klijn and Koppenjan argue that the resources that are available to governments but not other actors include 'sizeable budgets and personnel, special powers, access to the mass media, a monopoly on the use of force and democratic legitimation' (Kickert et al., 1997, p. 177). According to Smith, groups with information, legitimacy and implementation resources are able to exchange these for a position in the policy process and some control over policy (Smith, 1993, p. 63) even though in general the government 'retains discretion, determines the rules of the game and regulates the "process of exchange"' due to its greater resources (Smith, 1993, p. 59). He also points out that 'often groups only have power if the state perceives them as important for particular goals and in so doing becomes dependent on the groups' resources' (Smith 1993, p. 72). Similarly, Pappi and Henning posit that public actors seeking re-election exchange 'monitoring information and control of policy decisions' for 'expert knowledge and public support' (Pappi and Henning 1998, p. 558).

Table 2.3 sets out Dahan's summary of resources listed by authors working in the corporate management tradition, although the frame of reference used is not resource exchange. He makes the point that all the resources that he himself lists (last row of Table 2.3) may be created and exploited either at the firm level or at the collective level, for example through a formal association. Most authors listed distinguish between cooperative relationships, in which a firm tries to create a climate of trust through information exchange and the search for a fair and reasonable compromise, and an adversarial relationship in which a firm uses threats to put pressure on public decision makers. Dahan also distinguishes between (1) primary resources, that is, the resources that have the most impact on public decision-makers, such as expertise, financial resources and pressure exerted by other stakeholders in forms such as demonstrations, petitions and detrimental media coverage; (2) supporting resources that constitute the vectors of the main resources, such as the relational and recreational skills that enable a firm to gain access to officials and journalists; and (3) complementary resources

Table 2.3 Corporate political resources

Author(s)	Resources
Fainsod (1940)	Financial (political campaign lobbying), human (use of lobbyists and lawyers), political (political coalition-building)
Epstein (1969)	Creation and management of political alliances
	Access to public decision makers and influencers
	Dependency relationships of other actors towards the firm
	The accumulation of political successes
	The political status of the firm and its leaders
Boddewyn and Brewer (1994)	Wealth
	Time
	Organizational skills
	Legitimacy
	Privileged information
	Access to other political actors, especially public decision makers

Continued

Table 2.3 Continued

Author(s)	**Resources**
Baron (1995)	Expertise and skills in the management of relationships with other political actors
	Reputation as a responsible actor
	Access to public decision makers
Attarça (1999, 2000)	Technical–economic expertise
	Organizational resources
	Politicolegal expertise
	Relational resources
	Reputation (1999), economic and symbolic weights (2000)
	Financial resources
Jacomet (2000)	Collective organization, unity of interests among partners, information and expertise
Boddewyn (2000)	External non-market resources: power, wealth, mutual solidarity, respect between political actors
	Internal non-market resources such as expertise
Dahan (2005)	Expertise: technical/technological, economic/managerial, social, environmental, legal, political/administrative
	Financial resources: direct (e.g. campaign contributions) or indirect (financing other resources)
	Relational resources: formal (e.g. committee membership) or informal (e.g. interpersonal contacts)
	Organizational resources: internal (e.g. in-house public affairs office) or external (e.g. consultant)
	Reputation of the firm and/or its leaders with other non-market actors
	Public image
	Support of stakeholders such as trade associations
	Recreational skill

Source: Dahan, 2005: Tables 1 and 3 on pp. 3, 5.

that reinforce the impact of primary resources, such as public image, political reputation, financial resources, expertise and stakeholder support (Dahan, 2005, p. 48–50).

2.5 Tradable and enabling resources

Recall that we have defined a resource in the context of policy network theory as being anything that (1) is controlled by a policy actor, (2) is desired by another policy actor, and (3) can be transferred or exchanged in some relevant sense.

But not all of the resources identified in the literature are tradable in any direct sense. Public actors, for example, do not formally transfer legal authority to the actors with which they are exchanging resources. What are really being traded are policy concessions or amendments. The significance of legal authority is that this is what enables the relevant public actor to trade policy amendments: it is an enabling resource rather than a tradable resource.

For this reason it is necessary to distinguish tradable resources from other types of resources. To do this I examined each of the resources mentioned in the literature survey with a view to identifying exactly what it is that is being exchanged, added the results to the tradable resources identified in Chapter 1 as being implied by policy network theory itself, then grouped the resources identified into categories designed to be sufficiently general to be few in number and of wide application but at the same time specific enough for their meaning and relevance to be clear.

The result, which is set out in Table 2.4, is a list of tradable resources that is as comprehensive as I can make it, although unfortunately there

Table 2.4 Main tradable resources

Controlled by	Resource
Public actors alone	1. Policy amendments
	2. Access
Public and private actors	3. Veto power
	4. Information
	5. Cooperation with implementation
	6. Recourse to the courts
	7. Political support
	8. Patronage
Private actors alone	9. Private investment
	10. Fluid funds

is no way of ensuring that it includes every single tradable resource that has ever been used in resource exchange over public policy. Note that the resources listed are arranged according to the type of actor that controls them *before* any resource exchange takes place. *After* resource exchange the situation may be quite different: private actors, for example, may have received the policy amendments that they want while public actors may have received the resources that they want, such as political support.

In interpreting how these resources can be used in resource exchange, it is important to bear in mind that by their nature they each have a reward side and a punishment side. Public actors may reward other actors for their cooperation by granting them policy concessions, or may punish them by withholding these. By the same token private actors may provide public actors with political support if they get the policy amendments that they want or may mobilize against the government if they don't.

Let's have a look at these tradable resources in more detail, starting with those that only public actors possess.

1. Policy amendments

By 'policy amendment' as a tradable resource is meant a change in the choice of policy instrument(s) and/or settings in areas such as regulation, funding and taxation in the direction desired by the actor with whom the relevant resource exchange is taking place. Only public actors with the legal authority to make binding decisions in the relevant policy area are in a position to use policy amendments as a tradable resource, which means that legal authority is the enabling resource.

Of course public actors would prefer not to amend their preferred policy option. The extent to which they feel the need to do this is inversely related to the extent to which they already have the resources that they feel they need or can get them from elsewhere. If they already have considerable political support, for example, they are less likely to feel the need to make amendments at the behest of other actors than if they lack much political support.

One complication here is that the legal authority to make decisions in a certain policy area may be divided among two or more public actors. In such cases policy amendments may be traded among these actors in order to reach agreement on the decision.

2. Access

By 'access to policymaking' is meant inclusion on distribution lists for relevant government communications and documents; two-way communication with officials and/or members of the political executive in forms such as letters, emails, phone calls and meetings; inclusion on relevant advisory committees; and/or the opportunity to submit arguments in the knowledge that they will be considered. Access is valuable for policy actors because it gives them information about what public actors are doing and thinking, plus the chance to put their arguments to these public actors. In some cases access to the policymaking process is mandated by law. Otherwise the power to grant or deny access is the prerogative of the public actors who possess the legal power of decision in any given policy area: they can choose whether to deal with outsiders or not.

To be granted access it is in many cases enough to have a reputation for providing good quality, reliable and non-misleading information, and in general for being responsible and trustworthy. Other enabling resources include organizational resources such as in-house public affairs officers or external consultants, relational resources such as being known to key officials, and provision of recreational services (such as free trips) that provide an opportunity for more informal and personal contact (Dahan, 2005, p. 47).

In general one would expect all actors with significant tradable resources to be granted access, but on occasion groups that are denied access may be able to force policy amendments by means such as direct action. Conversely, the public actors who control access may use exclusion from access as a threat or punishment.

The next few types of tradable resources may be held and exchanged by either public or private actors.

3. Veto power

Policy actors with veto power may use this to block decisions unless certain policy amendments are made. This means that the precise tradable resource consists of refraining to exercise their veto power.

Veto power comes in two forms. Public actors other than the one(s) with formal decision-making power may possess the legal power to veto policy decisions unless certain amendments are made. An example here would be an opposition party that controls a powerful legislative upper house. In addition, both public and private actors may be granted an effective veto power as a result of the strength of their tradable resources elsewhere, for example where their cooperation is indispensable for effective implementation of public policy. Policy actors may also be granted veto power by the informal rules of the game, although it is unclear that such a rule would remain in place unless the actor concerned possessed considerable resources elsewhere.

4. Information

There are at least three ways in which information can be used as a resource.

First, actors with key information that they and only they control may exchange this directly for policy amendments.

Second, information may influence policy decisions directly without going through resource exchange by changing the policy preferences of the public actor(s) with the legal authority to make the relevant policy decisions when these decisions are taken without engaging in resource exchange. Among other things this demonstrates that the resource dependency version of policy network theory cannot by itself explain all policy change.

Third, where resource exchange does take place on the relevant aspect of a policy, policy learning may alter the nature of the resource exchange that takes place, and thus the policy decision that emerges, by altering the policy preferences of one or more actors.

Information about global warming, for example, may alter public policy because the relevant public actor(s) are convinced by this information and change their policy preferences and then either alter public policy unilaterally or go into resource exchange with different policy preferences. Miller (2000) argues that success in persuading public actors depends on providing them with key information that they don't already have by means such as pointing out flaws or anomalies in what the government is doing or proposing to do, pointing out technical or political advantages and/or disadvantages of which the government was not aware, and identifying ways in which public actors can get what they want that are less burdensome to the actor attempting persuasion. Alternatively, this information may alter public policy via altering the policy preferences of environmentalist groups and thereby the nature of any policy amendments that result from resource exchange with relevant public actors.

5. Cooperation with implementation

There is no point in adopting a policy if it cannot be implemented properly, so where actors have the capability to impede or block implementation, public actors will have an incentive to exchange policy amendments for cooperation with implementation. It is worth noting here that policies are often implemented not by single public (or private) actors but by what Hjern and Porter (1981) refer to as implementation structures: ensembles composed of parts of a number of public and private organizations.

To be able to use cooperation with implementation as a tradable resource, a policy actor needs to possess one or more of the following enabling resources: current involvement in implementing the policy as it exists now (that is, membership of the relevant implementation structure), the technical and organizational capabilities to implement the policy, or sufficient capability for strategic action to be able to block or disrupt policy implementation if the relevant public actor does not grant acceptable policy concessions. Public actors other than the actor(s) making the relevant policy decisions may in addition possess the enabling resource of legal authority over part or all of the implementation process.

6. Recourse to the courts

In certain circumstances public or private actors may be in a position to go to court to block or at least delay a policy decision or its implementation. In such circumstances refraining to use this legal option becomes a resource that can be traded for policy amendments.

7. Political support

The type of political actor most in need of political support is the political executive, that is, the leadership of the party or parties in government, as governments in democratic countries must submit themselves to elections every few years. Political support as a tradable resource comes in a number of forms.

First, and following Pappi and Henning (1998, p. 557), private actors may be in a position to mobilize the public or specific groups in favour of policy proposals, or at least to refrain from mobilizing them against policy proposals. Political mobilization in this sense includes media campaigns, strikes, petitions and demonstrations. Enabling resources here include financial resources, alliances and coalitions with similarly minded actors, and organizational resources such as a large membership.

Second, public actors may seek the approval of relevant private actors even where political mobilization is not an issue in order to give the chosen policy more (apparent) legitimacy. Here the enabling resource for such private actors is a good reputation in the eyes of the groups and voters that public actors wish to get or keep onside.

Third, members of the political executive are individually and collectively dependent on the support of other politicians to stay in office. The government as a whole needs the support of the legislature. Ministers need the support of the head of government. The head of government needs the support of the party. As a consequence, legislators outside the government may be able to trade political support for policy amendments; the head of government may trade his or her support for policy amendments by ministers; and the party as a whole may trade political support for policy amendments by the political executive.

Fourth, where the public is aware of an issue and cares, public actors may in effect deal directly with voters by making policy amendments designed to elicit higher opinion poll ratings in return. Here the enabling resources for the public are the right to vote, at least some awareness of the issue, and the existence of a party the policy preferences of which are closer to their own on the particular issue at hand than are those of the government.

The significance of political support as a tradable resource depends on how much the relevant public actor wants or needs it. A minister who is popular with his or her colleagues and sits in a government with a secure legislative majority that is riding high in the opinion polls, for example, already has a lot of political support and is therefore less likely to trade policy amendments for more political support than an unpopular minister in a minority government facing an election well behind in the polls.

The significance of political support as a tradable resource also depends on perceptions: whether environmentalists can mobilize voters against a particular government, for example, is uncertain ahead of its being demonstrated (or not), so its value as a tradable resource prior to this depends on whether the relevant public actors believe that environmental organizations have this capacity.

The type of political support that a policy actor can give or withhold depends on what sort of actor they are. Within the political executive itself, ministers may support a prime minister or, alternatively, try to force a change of leadership. Conversely, a prime minister may support, promote, demote or dismiss ministers. Second, the wider party in the legislature and outside may support their leaders or agitate for a leadership change. Third, within the legislature non-government parties may be in a position to keep the current government in power or dismiss it. Finally, private actors such as business corporations, interest groups and campaign groups may be able to give or withhold rhetorical support, or threaten or engage in direct action such as media campaigns and demonstrations. The significance to the government of a corporation's or interest group's support depends in part on factors such as their size, capacity to deliver on promises and threats (capacity for strategic action), perceived likely electoral impact of their opposition, access to the mass media, and pre-existing popular support. Media proprietors, and to a lesser extent editors and journalists, are especially well placed to give or withhold positive or negative publicity.

8. Patronage
Both public and private actors may exchange patronage for other resources. Public actors may grant positions in the government or administration, or honours, in exchange for benefits such as investment, campaign contributions or bribes. Private actors, especially corporations, may give ex-ministers, ex-officials and/or their family members positions in their own or related organizations, such as well-paid directorships, in exchange for policy amendments. Both forms of patronage constitute corruption: the exchange of personal favours for policy amendments or other benefits.

9. Private investment
As Lindblom (1977, ch. 13) points out, governments are held responsible for economic success but do not control the investment needed to ensure this. For this reason decisions about the location and type of private investment can be used by firms as a tradable resource. Perceptions are very important here: a threat to disinvest, for example, is only effective if the relevant public actors believe that it would be carried out if they refuse to give the relevant firm(s) what they want.

10. Fluid funds
Fluid funds – cash and other easily transferred financial assets – can be used as a tradable resource in a number of ways. First, they can be used to bribe politicians and officials to grant policy amendments. Second, they can be traded in the form of campaign contributions for specific policy commitments. Third, they can be used as an enabling resource to buy expertise, lobbying services and other tradable and enabling resources.

2.6 Summary

The purpose of this chapter has been to bring policy network theory into sharper focus by looking more closely at resource exchange and the identity of network members and their resources. This has led to a number of conclusions.

First, on the basis that resource dependency means that a policy actor wants or needs something that is controlled by another actor, and that resource exchange presupposes that the relevant resource is transferable, a resource is defined in the context of policy network theory as being anything that (1) is controlled by a political actor, (2) is desired by another political actor, and (3) can be transferred or exchanged in some relevant sense.

Second, the main types of political actors at national and other levels of governance that are typically involved in resource exchange over public policy as a consequence of their resource interdependencies are political executives, other politicians, civil servants, judges, firms, interest groups, cause groups, the media and non-government experts. The electorate is also included as a sort of quasi-political actor on the grounds that governments often seek to exchange policy concessions for electoral support.

Finally, the focus on identifying exactly what is exchanged means that a distinction needs to be made between resources that are actually exchanged, which I call tradable resources, and resources that are not exchanged but make it possible for political actors to control and exchange tradable resources, which I call enabling resources. The main tradable resources identified can be divided into three categories:

1 Resources that only public actors control: policy amendments, and access to the policy making process;
2 Resources that may be traded by either public or private actors: veto power, information, cooperation with implementation, recourse to the courts, political support, and patronage; and
3 Resources that are available to private actors alone, in particular corporations: private investment, and fluid funds.

The next chapter builds on the foundations laid in Chapters 1 and 2 by developing policy network theory into a full-fledged theory of policy change.

3
Policy Network Theory as a Theory of Policy Change

3.1 Introduction

So far we have looked at the main features of policy network theory defined in terms of resource exchange over public policy among interdependent actors, paying particular attention to the nature of the resources that are exchanged. The next step is to develop this theory into a full-fledged theory of policy change. Some analysts consider that policy network theory is much better at explaining policy stability than policy change (see, for example, Thatcher, 1998, p. 394; Richardson, 2000, p. 1007), or even that 'the concept of policy networks does not provide an explanation of policy change' (Marsh and Rhodes, 1992, p. 261), but these views are mistaken.

The basic argument is as follows. First, policy decisions can be conceptualized as being mainly the product of resource exchanges in which the policy preferences of relevant public actors prior to resource exchange are amended by these public actors in order to obtain needed resources from other actors. Second, in terms of policy network theory the direct causal antecedents of changes in resource exchange are changes in the resources, preferences and strategies of network members, and changes in rules and norms. Third, changes in these variables can be caused by changes in each other and by changes in perceptions of problems and solutions. Finally, changes in these five policy network variables can also be caused by changes in exogenous factors, defined as perceived and actual changes in reality other than these network variables. The chapter concludes that policy network theory is a theory of policy change in that it specifies the proximate causal mechanism of policy change (resource exchange), the immediate determinants of resource exchange (actors and their resources, preferences and strategies, plus rules and norms), and ways in which these network variables can be influenced by other variables.

3.2 How policy network theory explains policy change

The version of policy network theory used in this study holds that public policy is largely determined by resource exchange involving actors and their resources, preferences, strategies and perceptions of problems and solutions, plus policy network–specific rules and norms.

What does this imply about policy change?

First, it is important to be clear about exactly what we are trying to explain. Public policy has been defined for the purposes of this study as consisting of policy instruments (such as regulation, taxation and pensions) and their settings (such as levels or degree of stringency). This mainly means legislation, regulations, policy decisions that do not require legislative approval, contracts and grants. It follows that policy changes consist of changes in policy instruments and/or their settings. More precisely, they consist of changes in the content of the official decisions that choose policy instruments and their settings.

Were there no resource exchanges, even among public actors, the policy decisions made would simply reflect the policy preferences of whichever public actor had the legal power of decision. Policy network theory, of course, holds that this is rarely the case.

Where there is resource exchange, this may or may not include the relevant public actor making amendments to their preferred policy in exchange for resources from other actors. Where there are no such amendments, of course, the resulting policy remains that preferred by the relevant public actor. Where policy amendments are made, on the other hand, the resulting policy decision can be conceptualized as consisting of the policy preferred by the relevant public actor prior to resource exchange as amended by this public actor in exchange for resources from other network members.

If these preferences and policy amendments are exactly as they were the last time the relevant issue came up for decision, no policy change is made. For policy change to take place, therefore, logically the pre-existing preferences of the relevant public actor(s), and/or the amendments made in the course of resource exchange, must change. The issue for policy network theory as a theory of policy change, therefore, is to provide a logically coherent and empirically plausible account of what causes changes in the pre-existing policy preferences of relevant public actors and/or in the nature of resource exchange over public policy.

3.3 Direct influences of policy network variables on resource exchange

This section sets out how, in terms of policy network theory, changes in the policy amendments made in the course of resource exchange can be caused by changes in the resources, preferences and strategies of policy network members as well as by changes in formal and informal rules and norms.

1. Resources

If the tradable resources of a policy actor are augmented, one would expect, on average and over time, that policy decisions would become more favourable to the actor concerned, other things being equal. More resources for a public actor with the exclusive power of decision would mean that they would have less need of resources from other actors, so that fewer policy amendments would be necessary in order to obtain the resources they need than would otherwise be the case. For other actors, having more resources to trade would increase the likelihood of obtaining significant policy concessions in return. Conversely, and using the same logic, a loss of resources increases the likelihood of policy decisions that are less favourable to the public or private actor concerned. A special case of this pattern of causality occurs when a political actor first acquires resources that are of interest to other political actors and hence enters the relevant policy network and resource exchange for the first time, and when an actor for some reason loses the resources that were desired by other actors and drops out of the network and resource exchange.

The idea that changes in the pattern of resource distribution among political actors leads to changes in public policy is hardly new. In fact such arguments are commonplace. For example one often hears the argument that globalization leads to more business-friendly policies because it adds to the ability of firms and corporations to choose where they invest and therefore gives them more political leverage by making it easier to withhold investment if they object to what a government is doing or intends to do.

However it is important to note that there is no automaticity about this relationship. Augmentation of an actor's resources, for example, may not lead to more favourable policy outcomes where there is a threshold for a change in the balance of power and the strengthening is not sufficient to exceed this, or where other actors respond by allying against them. That is, changes in resources are important if and only if they make the difference between winning and losing a policy amendment.

This general pattern is essentially the same for all of the main tradable resources identified in Chapter 2.

Where a public actor is able to offer more *policy amendments*, for whatever reason, their chances of obtaining the resources they want from other actors would be expected to increase, other things being equal – but at the cost of a policy decision the content of which is further from their own policy preferences. Conversely, offering fewer policy amendments would be expected to reduce their chances of obtaining the resources they want. Where other actors can block a policy decision, for example because they possess a legal veto, provision of more policy concessions by a public actor may mean that the policy goes through, albeit heavily amended, when otherwise it would have been blocked. Conversely, in such situations provision of fewer policy concessions would be expected to reduce the chances that the relevant public actor can get their policy through.

Provision of greater *access* improves the relevant public actor's chances of obtaining at least some key resources from other actors, in particular information and, in some cases, acquiescence or support that would otherwise not have been forthcoming. This in turn means that resulting policies are more likely to be successful due to being better informed and/or more widely accepted by other actors. Giving actors increased access also increases the chances that these actors can persuade the relevant public actor that their preferred policy would also be a good idea from the point of view of that public actor's own policy preferences. It follows that, in at least some cases, granting access leads to policy decisions that are more in line with the preferences of the actor granted access than they would otherwise be. Conversely, restricting access implies less influence from other actors but also less successful policies.

Where an actor gains the ability to *veto* policy decisions, or the range of policy areas over which an actor has a veto increases, this strengthens the incentives for other actors to provide them with the resources that they want, especially public actors who want to get policy decisions past this veto. Conversely, if an actor loses the ability to veto policy decisions, or the range of policy areas over which it has a veto narrows, relevant public actors will have less incentive to grant them policy concessions.

If the value for a public actor of *information* offered or provided by another actor increases, this strengthens the incentives for this public actor to grant them the access needed for them to put their arguments to the right person at the right time in the right form, thus increasing their chances of persuading the public actor involved that the policy amendment they want is also desirable from the point of view of that public actor. Conversely, if the quality of the information offered or provided by another actor deteriorates, relevant public actors will have less incentive to grant them access, thus reducing their chances of persuading that public actor that the policy amendment they want is a good idea. To the extent that information is traded directly for policy amendments, an increase in the value for the relevant public actor of this information would be expected to lead to an increase in the significance of the policy concessions that they are prepared to make in order to obtain that information, and conversely where the value of such information deteriorates.

If an actor's capacity to offer or withdraw *cooperation with implementation* increases, relevant public actors will have more incentive to grant policy concessions, and less incentive where an actor's capacity to do this is diminished.

Similarly, if an actor's capacity to have *recourse to the courts* to block policy decisions increases, for example because they are granted legal standing in a certain area for the first time, relevant public actors will have more reason to grant them policy concessions, and less reason when an actor's capacity to go to court is reduced.

Where an actor's capacity to provide or withhold *political support* is strengthened, public actors with the power of decision will have greater incentive to grant them policy concessions, and less incentive where an actor's capacity to provide or withhold political support is weakened.

If a private actor becomes more generous in their offers of *patronage*, corruptible representatives of relevant public actors will have more incentive to grant them policy concessions, and less incentive where a private actor becomes less generous. Where a public actor becomes more generous in their offers of patronage, and representatives of other actors are susceptible to this, this would be expected to reduce the policy concessions the public actor needs to make to obtain the resources that they want from these other actors. Where a public actor becomes less generous, this would be expected to increase the policy concessions that would be needed to obtain these resources.

The extent of policy amendments that public actors are prepared to offer business in exchange for *private investment* would be expected to co-vary with the scale of the proposed investment or disinvestment. It is also worth pointing out that the significance of private investment as a tradable resource varies according to the state of the economy: if within a particular country there are signs that business investment is slowing down or going into reverse, the likely economic and electoral impact of this increases the incentives for public actors to inflect public policy in a business-friendly direction in order to encourage investment, or at least to reduce the scale of disinvestment. When investment is booming, by contrast, this pressure lessens. Finally, the extent of policy concessions that public actors are prepared to offer business would be expected to be correlated with the ease with which firms can move investment between countries, which in turn varies according to factors such the stringency of rules governing capital movement.

To the extent that politicians and public officials can be bought, the use of *fluid funds* can affect the content of policy decisions. Where there is an increase in a private actor's capacity and willingness to provide or withhold cash, for instance in the form of campaign contributions or bribes, public actors with the power of decision will have greater incentive to grant them policy concessions than would otherwise be the case. Conversely, where there is a diminution in a private actor's capacity or willingness to provide or withhold cash, such public actors will have less incentive to grant them concessions.

2. Preferences

A change in the policy preferences of a policy actor with significant tradable resources may alter the terms of resource exchange sufficiently to alter the content of the resulting policy decisions. If a peak business organization reverses its opposition to new measures to open domestic markets to foreign competition, for example, this would make it easier for public actors to go ahead with such a measure. Changes in preferences are especially likely to alter policy decisions where the position of the actor concerned is pivotal, for example a small party in the legislature that controls the balance of power.

Changes in the preferences of public actors can also influence policy decisions where the public actor concerned chooses to make a unilateral decision on the basis of their pre-existing policy preferences without taking into account the views of other policy actors, that is, without any resource exchange taking place.

3. Strategy

The resource dependence version of policy network theory posits that public policy is mainly determined by resource exchange among interdependent actors with distinctive policy preferences. It follows from this that strategy can be conceptualized as consisting concretely of (1) communication of preferences and associated argumentation, (2) combinations of resource deployments along with associated offers, threats and promises, and (3) whatever other actions network members need to take to enable the communication of their preferences and deployment of resources, such as cultivation of allies.

Communication of preferences and associated argumentation alone may lead to policy change through persuading a public actor that what one wants would also be good for that public actor. One strategic choice that private actors need to make here is whether to focus on using information and argumentation to try to persuade public actors, or to use more conflictual strategies (see, for example, Maloney, Grant and McLaughlin, 1994; Miller, 2000, Page 1999; Dahan, 2005). Note, however, that this form of influence is not entirely independent of resource exchange, as engaging in resource exchange in order to obtain access to the policymaking process is likely to be an important factor in facilitating any persuasion that takes place.

In terms of resource deployment as such, network members have a host of strategic choices to make. For public actors, decisions about resource deployment include decisions about granting access and offering policy concessions. Private actors need to decide whether to use key information as a bargaining counter, and if so exactly which information, when and in exchange for what. Actors with the capacity to block policy implementation, go to court, or give or withdraw political support have to choose whether, when and how to take these steps. Those with the capacity to bestow patronage or cash need to choose whether to abide by institutional rules and norms, for instance by declaring any campaign contributions that they make, or to act illicitly, for example by bribing public officials. And multinational companies have to make choices about the circumstances under which they offer new investment or threaten redirection of existing investment. These are just a few of the possibilities.

Although in general one would expect that sticking with a particular strategy would lead to similar policy decisions over time, other things being equal, it is important to bear in mind that this is not the case for long-term strategies in which policy impacts are not expected immediately. A long-term strategy to weaken trade unions, for example, might eventually enable a government to introduce employment policies that would have been politically unrealistic when they first came to office. Otherwise, however, one would expect that it is changes in strategies for realizing policy preferences that would be expected to increase the likelihood of changes in the content of resource exchange and hence changes in the policy amendments that relevant public actors ultimately make.

The most obvious way in which changes in an actor's strategy can change the nature of resource exchange sufficiently to shift the content of the resulting policy decision in the direction of that actor's policy preferences is through adopting more effective strategies, for example more intelligent deployment of information, offers and threats, or more astute choices of coalition partners or media strategy. Conversely, a less effective strategy would be expected to result in policy decisions that are less in line with the relevant actor's policy preferences.

In addition, different strategies can lead to different policy decisions by leading to public actors making different types of policy concessions. Different alliances, for example, might permit an actor to achieve different policy goals. One obvious example of this is when a liberal party leaves a governing coalition with a social democratic party to join a new majority coalition with a conservative party, as the German FDP did in 1982: in such a case one would expect that progress on liberal social policy goals would be replaced by progress on liberal economic goals.

Space does not permit a comprehensive account of the range of possible strategic changes that the various types of political actors, with their various types of resources and preferences, can make, but the possibilities include varying the relative weight given to cooperative and adversarial strategies, changing the institutional targets of their strategies, adopting or abandoning strategies designed to change the distribution of resources in a network, and choosing which other actors, if any, they wish to ally themselves with. Public actors in particular may switch between unilateral and cooperative strategies and, where cooperation is chosen, between including a wide range of actors in resource exchange or just a few. They may also vary in whether they try to manage networks and, if so, in what ways.

4. Perceived problems and solutions

At first glance it would appear that changes in perceived problems and solutions are also direct causal antecedents of resource exchange. Perceptions of problems and solutions held by policy actors obviously constrain the range of policy alternatives considered by network members. It follows that changes in these perceptions can cause changes in this range of alternatives, leading in at least some cases to changes in the policy alternatives actually chosen.

Looked at more closely, however, it becomes clear that, in terms of the conceptual framework used by policy network theory, the causal link goes via policy preferences: perceptions of problems and solutions limit the range of possible policy preferences for any given actor, from which it follows that changes in perceived problems and solutions change the range of possible policy preferences, which in turn may result in changes in actual policy preferences that then change the terms of resource exchange sufficiently to result in a different policy decision than would otherwise be the case. In terms of policy network theory, then, changes in perceptions of problems and solutions are not in fact direct causal antecedents of changes in resource exchange.

5. Rules and norms

To the extent that network members follow rules and norms designed to facilitate continuing interaction by means such as defining prescribed, permitted and prohibited actions and interactions, establishing and sustaining norms of honesty and reciprocity as well as routines and procedures, and assigning particular roles to network members, the range of possible interactions among them is restricted. If there is a powerful norm that stipulates that members must be honest in their dealings with each other, for instance, strategies involving deceit are discouraged.

It follows from this that in at least some cases changes in rules and/or norms are likely to cause different policy outcomes by changing the way that resources are exchanged. If an honesty norm breaks down, for example, public actors may become less likely to make policy concessions now in return for promises of, say, political support at the next election because their confidence that such promises will be kept will be lower than previously.

3.4 Indirect influences of policy network variables

We have now established how changes in the nature and content of resource exchange that lead to changes in policy decisions can result from changes in actors' resources, preferences and strategies, and from changes in rules and norms, and that changes in the preferences of a public actor can also influence policy decisions independently of resource exchange where this public actor takes a unilateral decision rather than basing their decision on resource exchange with other actors.

However this is not the only way in which changes in these network variables can affect the content of resource exchange: they can also influence resource exchange indirectly via influencing each other, as we have already seen in the case of perceived problems and solutions. The aim of this section is to show that there are possible causal pathways each way between almost all of these five policy network variables, although no attempt is made to provide a comprehensive account of all of these and their variations due to their number and complexity.

1. Resources

Increases in resources can change *preferences*, in particular operational preferences as distinct from ideal preferences, by making an actor more ambitious: having more resources to trade is likely to encourage a private actor to hold out for more significant policy concessions that they would otherwise be prepared to settle for. Conversely, a reduction in resources would be expected to lead private actors to moderate their operational preferences and settle for less in the way of policy amendments. If the resources of a public actor increase, they have less incentive to make policy concessions to obtain the resources they want and are therefore better placed to stick to operational preferences that are closer to their ideal preferences and resist making policy amendments that they would otherwise concede, while a reduction in their resources implies a greater need for resources and therefore a greater likelihood that they will moderate their operational preferences and offer more significant policy amendments than would otherwise be the case.

Changes in resources obviously affect *strategy* because they change what an actor has to bargain with. In particular, increases in resources may enable the adoption of different and more effective strategies. To the extent that an increase in trade union membership increases the value of direct action as a tradable resource, for example, or more precisely the value to other actors of avoiding direct action by trade unions, this may enable a union to adopt a conflictual strategy that previously would have been judged likely to be ineffective. If a trade union is losing members, on the other hand, they may feel compelled to switch to other strategies instead.

Finally, increases in resources may enable an actor to inflect *rules and norms* in their favour, for example by enabling a public actor to exclude opponents from the policymaking process because their resources are no longer needed. Conversely, losing resources may render actors less able to resist changes to rules and norms that make it harder for them to pursue their policy preferences. In addition, major changes in network membership due to changes in the distribution of resources, such as the tendency of policy networks to increase in size over time, may make existing procedures and customs unworkable, leading to their amendment.

2. Preferences

Changes in an actor's preferences may alter not so much their own *resources* as the resources of others insofar as they alter what an actor wants from other actors. For example, a change of preference on the part of a public actor might mean that they can now get what they want without the approval of an actor who had a veto on the originally preferred policy but doesn't on the new one. An anti-nuclear minority government that wants to increase biofuels quotas but is facing a legislative majority that wishes to add pro-nuclear provisions to the bill, for example, will find that making a concession on this point becomes unnecessary if it drops its attempt to increase these quotas due to becoming convinced that this would contribute to diversion of land from food production. Another way of putting this is to say that changes in preferences may lead to changes in *relative* resources: greater ambition on the part of public actors, for example, implies a reduction in relative resources, other things being equal, insofar as achievement of the new more ambitious goal requires more assistance from other actors, and hence the provision of more significant policy concessions in other areas in return, than would otherwise be the case.

Changes in preferences affect *strategy* in at least two ways. First, any significant change in preferences obviously alters strategies by altering the objective(s) that they are designed to achieve. Strategic choice is also affected by the relationship between an actor's own preferences and those of other actors. Where the preferences of a private actor are close to those of the lead public actor, for example, use of an information strategy to obtain policy concessions by persuasion is likely to be more successful than where preferences are far apart, due to the greater overlap between what each actor considers to be good reasons for maintaining or changing particular policy stances. It follows that preference changes that increase the distance between the preferences of major actors will tend to increase the incidence of conflictual strategies, while changes that decrease the distance between their preferences are likely to increase the incidence of cooperative strategies.

Changes in policy preferences can also cause changes in what are perceived to be *problems and solutions*. Changes in the preferences of the elected executive caused by a change in government from right to left, for example, may well lead to poverty being considered to be a systemic problem rather than, as it was under the previous government, a consequence of individual failings, with knock-on consequences for perceptions of solutions.

Finally, major changes in the policy preferences of powerful actors, especially public actors with the legal authority to make decisions in the relevant policy area, may influence *rules and norms* insofar as difficulties in achieving their new preferred policies under existing rules and norms leads to efforts to change these.

3. Strategy

As we have already noted, certain sorts of strategies can be used by actors to strengthen their *resources* relative to those of other actors, for example by acquiring new resources, finding alternative sources of resources, and acquiring authoritative powers to coerce other actors (Aldrich, 1979; cited in Klijn, 1997, p. 21). Public actors, for instance, might boost their in-house research and information-gathering capabilities in order to reduce their dependence on information provided by private actors. Switching to or from such a strategy may therefore also cause changes in the relative resources of political actors.

A change in strategy based on changes in evaluations of what realistically can be obtained in resource exchange may lead to changes in *policy preferences* where an actor decides they will not be able to achieve A so alter their efforts to pursue B instead. As Klijn puts it, 'in most situations, actors discover their goals during interaction with other actors from which they can learn what may be obtained or gather information, which causes goal displacement' (Klijn, 1996, p. 99).

The strategies of public actors may affect the perceptions of *problems and solutions* of policy network members to the extent that this public actor succeeds in manipulating the range of perceptions within a policy network by means such as preventing the exclusion of actors with divergent perceptions, introducing new actors, preventing the exclusion of ideas, introducing new ideas, and furthering reflection on the part of actors by means such as creating a climate in which doubt and inconsistency are not valued negatively (Termeer and Koppenjan, 1997, pp. 89–95).

The strategies of public actors in particular may succeed in changing *rules and norms* by means such as introducing new actors and excluding others, establishing or changing organizational arrangements such as consultation procedures and advisory bodies, and changing interaction rules such as decision-making procedures (Klijn, Koppenjan and Termeer, 1995, p. 448).

4. Perceived problems and solutions

Changes in perceptions of problems and solutions may affect *resources* insofar as they change what actors want from one another. Switching from an economic ideology according to which economic prosperity requires trade union cooperation on wages to one that leaves wage-setting to the market, for example, frees governments from the need to obtain their cooperation and in so doing destroys cooperation with policy implementation in this respect as a tradable resource for unions.

Changes in what is considered to be a problem, or judged to be a solution to a problem, obviously may influence policy *preferences* and, through preferences, *strategies*, for example when a policy actor discovers that what they thought was a solution (in its terms) doesn't in fact work and therefore shifts to favouring a different solution and hence a different policy objective and a different strategy: policy learning.

5. Policy network-specific rules and norms

One way in which network-specific rules and norms may affect the nature and distribution of tradable *resources* is by permitting or proscribing the use of certain types of resources. Where network norms proscribe the use of direct action, for example, abstention from direct action is not important as a tradable resource even where an actor has the capacity to take direct action. It follows that a change in network norms that allows direct action will increase the effective relative resources of such actors, and conversely if they become proscribed having been permitted in the past.

For interaction to run smoothly, network members need to take into account the *preferences* of other members and, in particular, to respect their no-go areas in relation to policy options. Repeated proposals by trade unions to nationalize utilities, for example, in current circumstances would be unlikely to facilitate interaction on economic policy. That is, institutional norms restrict the range of expressed policy preferences held by network members. It follows that changes in such norms may change the range of operational preferences of actors.

By constraining the range of legitimate actions, informal norms are likely to constrain the variety of political *strategies* that policy actors may use. Changes in rules and norms may therefore affect strategies by changing the range of acceptable strategies. More specifically, 'the positive and negative incentives attached to institutionalized rules will merely increase or decrease the payoffs associated with the use of particular strategies and hence their probability of being chosen by self-interested actors' (Scharpf, 1997, p. 39). It follows that insofar as changes in rules and norms do alter these payoffs, different strategies may be chosen.

Respecting the no-go areas of others, to the extent that this occurs, also constrains the policy agenda by limiting the range of *problems* that are considered to be relevant as well as the range of *solutions* that are considered legitimate and acceptable, so that changes in rules and norms may cause changes in the range of problems and solutions that are considered in network interactions.

3.5 Exogenous sources of changes in policy network variables

So far policy network theory has been used to construct a model in which policy change is seen as being largely a function of changes in the pre-existing policy preferences of relevant public actors as amended in the course of resource exchange with other policy actors within policy networks. Changes in resource exchange in turn have been presented as being caused by changes in the resources, preferences and strategies of network members, and by changes in policy network–specific rules and norms. And the previous section has established that, in almost all cases, changes in each of these five policy network independent variables can cause changes in the others.

But these are not the only sources of changes in these variables. Policy change is not entirely isolated from the outside world. The aim of this section is to complete the development of policy network theory as a theory of policy change by showing how changes in exogenous factors, defined as perceived and actual changes in reality other than the five policy network independent variables considered so far, can cause changes in these variables which lead to changes in resource exchange and on to changes in policy decisions. This is done not by attempting to provide a comprehensive account of all possible exogenous factors, which is obviously impossible, but simply by illustrating how changes in exogenous variables can be plugged into the causal pathways already identified and their implications traced through to enable the formulation of hypotheses about how changes in these variables can cause specific types of changes in public policy. The exogenous variables chosen for this are externally imposed legal changes in the powers and responsibilities of public actors, changes of government, economic events, scientific and technological developments, and disasters.

Externally imposed legal changes in the powers and responsibilities of public actors can change the distribution of resources within a policy network in a number of ways. Europeanization or devolution of a policy area, for example, brings in new political actors from other levels of governance and weakens or removes the legal authority possessed by national-level public actors, thus reducing their ability to offer policy amendments, grant or deny access to the policymaking process, or exercise a legal veto on policy decisions. At the same time the legal authority of public actors at these other levels of government increases, adding to their ability to trade policy concessions, grant or deny access, or wield a veto. Similarly, the legal powers of ministers, departments and agencies may be altered by departments and agencies being created, split, merged, otherwise reorganized or abolished, again leading to changes in their capacities to grant policy concessions, grant or deny access, or exercise a legal veto. Reorganizations that alter how public policy is administered may in so doing alter the capacity of political actors to facilitate or obstruct policy implementation. Legal changes may alter the capacity of actors to go to court to challenge policy decisions, for example by opening decisions in a certain policy area to judicial review, or removing this possibility. Europeanization of a policy area, for example, may open decisions in this area to judicial review at the European level. Finally, legally mandated changes in the powers and responsibilities of public actors may lead to changes in strategy: shifts in the locus of decision-making upwards to Europe or downwards to subnational levels of government, for example, dictate reorientation of strategies towards targeting different public actors.

Insofar as major political parties have different policies, changes of government obviously result in changes in the policy preferences and perceptions of problems and solutions of the political executive, and of officials acting under their instructions, across many areas of public policy. Changes in government may also lead to changes in policy specific rules and norms as an incoming government decides, for example, to exclude trade unions from the policymaking process, or to bring them in out of the cold.

Economic events may also alter the preferences of network members. An economic downturn, for example, may alter what business wants the government to do in the area of economic policy. It would also increase the value of private investment as a tradable resource by reducing its availability at the same time as elected governments become more dependent on it to avoid or cushion a recession that would threaten their chances of re-election. And economic events that are not consistent with the prevailing ideology or paradigm may (eventually) cause changes in perceptions of problems and solutions. The year 2008 was very good one for this.

Scientific and technological developments may alter policy actors' perceptions of problems and solutions and through this their policy preferences. The discovery of global warming, for example, added a new problem to those facing policymakers, thereby adding climate change mitigation to their policy preferences, while advances in electronics have made surveillance more viable as a (partial) solution to crime, again altering the policy preferences of relevant actors.

Finally, natural and other disasters can cause changes in the terms of resource exchange by causing issues to receive wide publicity that both engages public opinion, so that the issue may be seen as a possible influence on the next election when previously its (apparent) electoral relevance had been limited, and brings in a wider range of public and private actors, at least temporarily, than had previously been involved, including heads of government. The importance to a government of favourable media coverage on a particular policy obviously grows to the extent that the issue becomes politicized and media coverage expands, as this is likely to expand the proportion of the electorate that becomes aware of it and therefore adds to its potential electoral impact. This increases the resources of the media on this issue, at least temporarily, so that relevant policy decisions may be more influenced by the views of journalists and media magnates, and by public opinion, than would otherwise be the case.

3.6 Summary

In this chapter policy network theory has been developed into a full-fledged theory of policy change. The first part of the chapter showed how changes in each of the causally antecedent policy network variables identified in Chapter 1 (actors and their resources, preferences, strategies and perceptions of problems and solutions, plus policy network–specific rules and norms) may cause policy change by changing the nature and content of resource exchanges either directly or via influencing each other. It was also pointed out that changes in preferences may influence policy decisions *without* going through resource exchange where a public actor's preferences change and that public actor makes policy decisions unilaterally without taking into account the views of other actors, which means that the most that policy network theory can claim is that public policy is *mainly* determined by policy networks. The second part of the chapter completed the model by illustrating how exogenous factors, defined as perceived and actual changes in reality other than the five policy network variables, may cause changes in policy decisions via changing these policy network variables.

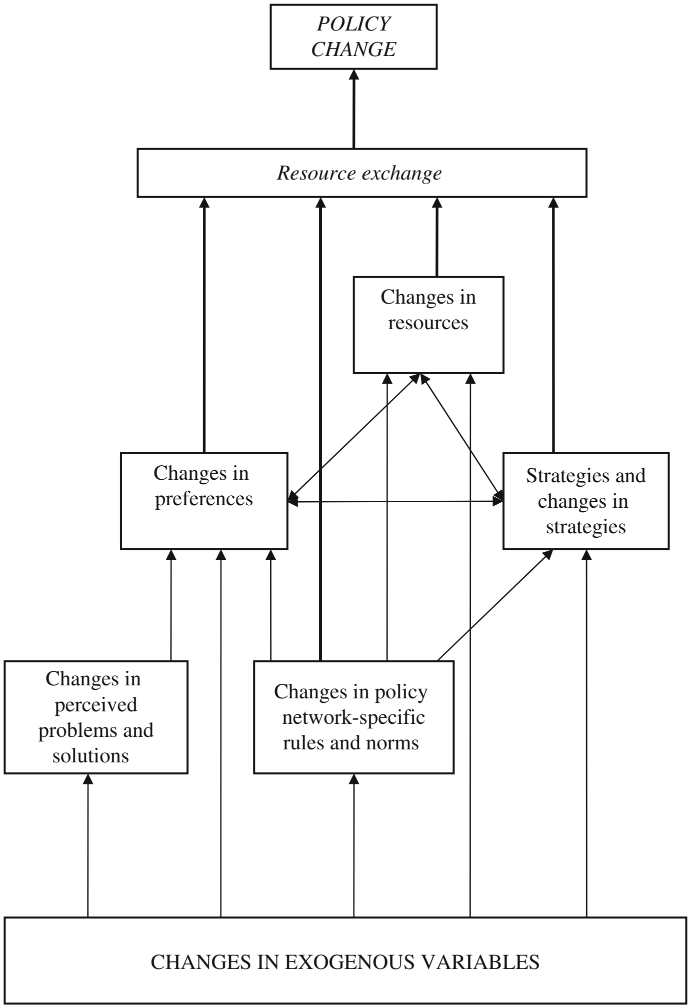

Figure 3.1 Policy network model of policy change

What we have, then, is a conceptually clear and logically coherent model of policy change (Figure 3.1) consisting of

- a clearly defined dependent variable (changes in authoritative decisions about policy instruments and settings);
- two clearly defined proximate causal mechanisms of policy change (resource exchange, and policy learning by public actors where they act unilaterally);

- a set of clearly defined immediate causal antecedents of changes in the terms of resource exchange (changes in actors' resources, preferences and strategies, and changes in rules and norms); and
- a clearly defined causal mechanism through which changes in other variables can lead to changes in these immediate causal antecedents, and thus indirectly to changes in resource exchange and changes in policy decisions.

Although it might be argued that policy network theory is not really a theory of policy change, because ultimately it is changes in exogenous factors that drive policy change and policy networks simply mediate their effects on public policy, this logical structure is found in all theories of change: whatever independent variables are included in a theory must themselves be the result of causal processes that involve antecedent causal factors that are not covered by that theory. We don't dismiss the theory of evolution as a theory of biological change because it does not account for the origins of the atoms that make up the fabric of life, for instance. So this objection is ill founded: policy network theory as elaborated here *is* a theory of policy change.

What we have, then, is a model of causation into which changes in exogenous variables can be plugged and their likely effects traced through the policy network variables and resource exchange to policy change. How this can be used to generate specific hypotheses about the future of public policy is the subject of the next chapter.

4

Policy Network Theory and the Future of Public Policy

4.1 Introduction

The aim of this book is to get an idea of the big picture of where public policy is going by using a theory of policy-making to generate plausible propositions about the direction of policy change, and then to test these propositions.

Policy network theory has now been developed into a theory that can do this. As we saw in Chapter 1, it is based on defining a policy network as a set of political actors that engage in resource exchange over public policy (policy decisions) as a consequence of their resource interdependencies. Policy network theory itself is defined as the ensemble of this definition of a policy network and the propositions that it presupposes or entails. This means that the version of policy network theory used in this study holds that public policy is largely determined by resource exchange involving actors and their resources, preferences, strategies and perceptions of problems and solutions, plus policy network–specific rules and norms.

Chapter 3 established that in terms of policy network theory (1) policy decisions can be conceptualized as being mainly the product of resource exchanges in which the policy preferences of relevant public actors prior to resource exchange are amended by these public actors in order to obtain needed resources from other actors; (2) the direct causal antecedents of changes in resource exchange are changes in the resources, preferences and strategies of network members, and changes in rules and norms; and (3) changes in these policy network variables can be caused by changes in each other, changes in perceptions of problems and solutions, and changes in exogenous factors, defined as perceived and actual changes in reality other than these network variables.

The basic form of the causality involved therefore leads from changes in exogenous variables through changes in network variables and changes in resource exchange to changes in policy decisions. It follows from this that policy network theory can in principle be used to derive hypotheses about policy change by

1. identifying changes in exogenous variables that cause changes in one or more network variables;
2. plugging the resulting change(s) in these network variables into one or more of the causal pathways specified by policy network theory that lead from these network variables directly or via changes in other network variables to changes in resource exchange;
3. reading off the implications (if any) of the resulting change(s) in resource exchange for the future direction of public policy.

In the simplest case a certain type of change in an exogenous variable might imply a certain type of change in one of the network variables (for example an increase in an actor's resources) which then, via resource exchange, implies a policy change in a certain direction (for example the direction favoured by the actor whose resources have increased), other things being equal.

However it is important to note that there is no automaticity about these causal relationships. Changes in resources, for example, are important when they make the difference between winning and losing on a policy decision, but will not lead to more favourable policy outcomes where there is a threshold for a change in the balance of power within a policy network and the increase in resources is not sufficient to tip the balance. It is for this reason that propositions about the causation of policy change need to be put in terms of likelihood rather than necessity: policy network theory entitles us to postulate that changes in A imply (are likely to cause) changes in B, but not that changes in A will necessarily result in changes in B.

The purpose of this chapter is to develop this general methodology for deriving hypotheses about policy change into one that can be used to generate specific propositions about the future of public policy over a wide range of policy areas. In the next section it is argued that for this purpose the most appropriate exogenous variables to plug into the causal pathways defined by policy network theory are major long-term technological, economic, environmental and social trends, or 'king trends' for short. Nineteen such king trends are then identified. The following section sets out in detail the methodology used in practice to derive the policy implications of these 19 king trends. Finally, an example of how this methodology works in practice is given by applying it to climate change.

4.2 Identifying relevant exogenous variables

We have seen that in principle it should be possible to use policy network theory to generate hypotheses about policy change by identifying changes in relevant exogenous variables and tracing their implications for policy decisions through the causal pathways specified by policy network theory.

What, then, are these relevant exogenous variables?

One possibility would be to take individual events as the relevant variables, but this is problematic in at least two ways. First, the fact that changes in network variables are not necessarily enough to alter the terms of resource exchange sufficiently to alter policy decisions, since whether this occurs also depends on the constellation of resources, preferences and strategies of other actors, as well as the nature of network rules and norms, means that we cannot be sure that a single event will have an effect via policy network variables and resource exchange on policy decisions. What is needed to increase the chances of a real effect, assuming that the causal pathways defined by policy network theory are realistic, is a series of similar events over time – a trend. Second, it is very difficult to predict individual events, especially in the long term. Who can predict nuclear accidents, for instance? We are constantly subjected to a blizzard of unforeseen events.

How then can policy network theory be used to obtain an indication of the directions in which public policy is likely to move?

The key insight here is the observation that although most events cannot be predicted, it is possible to predict those events that constitute major long-term technological, economic, environmental and social trends. We can predict with confidence, for example, that technological innovation will continue in relation to health care and defence. We can predict that people aged 65 years or over will become a greater proportion of the population as time goes on. We can predict that global warming will continue. Many such trends can be identified.

What this means is that policy network theory can be used to deduce the likely impact of these trends on the future direction of public policy by ascertaining their impact on network variables. To the extent that the gradual internationalization of production makes it easier for firms to choose where to invest, for example, and therefore to withhold investment from a country if they object to what its government is doing or intends to do, thus adding to their tradable political resources, we would expect that policy decisions will need to become more business friendly in that country if it is to obtain or keep private investment, which implies a trend towards more business-friendly public policy, other things being equal.

It is important to note here that two simplifying assumptions are being made. The first is that although we cannot rule out the possibility that there are long-term trends in policy network variables that are not caused by changes in exogenous variables but instead operate via repeated feedback loops among themselves, here the assumption is made that trends in policy network variables are ultimately caused by trends in exogenous variables. The second is that a simple linear relationship is assumed: although in at least some cases the functional form that relates changes in exogenous variables to policy changes may be cyclical rather than unilinear, or even more complicated than that, to keep the analysis manageable it focuses on identifying ways in which unilinear trends in relevant exogenous variables imply unilinear trends in public policy.

The next step is to identify as many relevant trends as possible in order to get as synoptic a view as possible so as to minimize any biases in hypothesis derivation due to omitted variables, provide a rigorous test for policy network theory, and make the analysis as interesting as possible.

But how? As far as I know there is no available categorization of trends that is both exhaustive and specific enough to enable the identification of individual trends. Although my own classification of trends as technological, economic, environmental and social appears to be exhaustive – what is left out? – it gives us no clue about the identify of specific trends, although it does provide some indicators about where to look.

In the absence of clear guidelines, a two-step method was used to identify as many relevant trends as possible.

The first of these was to survey the official and academic literature in order to identify trends that have been identified by others and which might cause changes in actors' resources, preferences or strategies, or changes in rules and norms, either directly or indirectly. In order to cast as wide a net as possible, my approach was to eschew the use of any particular theoretical framework, on the grounds that whichever theory I chose would point me in certain directions but inhibit me from looking in other directions, in favour of simply scanning as wide a variety as possible of the relevant literatures. In order for the analysis to apply to a number of countries without being complicated by very large cross-national differences, the aim was to identify trends that apply to affluent European democracies, such as Britain, France and Germany, rather than to any wider set of countries.

The second step was to identify those trends that are most relevant. To be predictable, a trend must be believed to be likely to continue well into the future. To be of interest, it must be significant in some way. And we want to be sure that it does in fact exist at present. To be included in the analysis, therefore, a trend had to meet three conditions:

1. Its existence as a major current trend in rich European countries had to be convincingly verified by official and/or academic sources.
2. There had to be strong evidence that it directly affects the lives of a large number of people in a significant way.
3. It had to be expected by relevant experts to be likely to continue operating at least up to 2020, for example because it has been operating for a very long time already, the factors sustaining it are themselves expected to continue to operate, or there are no obvious countervailing factors on the horizon. The year 2020 was chosen because it is some way off (this is being written in 2008) but not so far that informed projections of trends become hopelessly speculative.

Trends that meet these three criteria are referred to as 'king trends' to distinguish them from all other sorts of trends and highlight their significance. Table 4.1 lists the 19 trends that were identified as meeting all three criteria and therefore qualify as king trends. Population ageing, for example, is classified as a king trend because its existence is convincingly verified by sources such as Eurostat and the United Nations (UN) as well as by national statistical services, very few things are more significant for people's lives than the gift of a longer life, and well-established statistical forecasting techniques enable us to predict with some reliability that population ageing will continue.

Space does not permit a detailed description of exactly how each of these trends meet the three criteria, but fortunately this is already set out in my book *King Trends and the Future of Public Policy* (Compston, 2006), the prime purpose of which was to identify the policy implications of king trends but which did not go on to test them. The approach used was the one outlined here: scanning a cross-section of relevant technological, economic, environmental and sociological literature to identify possible

Table 4.1 Identifiable king trends

Type	Trend
Development and spread of technological innovation	1. Information and communications technology
	2. Biotechnology
	3. Health care technology
	4. Military technology
Economic trends	5. Growth and diversification of production and consumption
	6. Greater energy use
	7. Increasing mobility
	8. The shift to services
	9. The growth of women's employment
	10. The expansion of trade
	11. The internationalization of production
	12. The internationalization of finance
	13. The expansion of mass media
Environmental trends	14. Climate change
Social trends	15. Population ageing
	16. Rising levels of education
	17. Smaller households
	18. Secularization
	19. Sexual liberalization

candidates, then testing these against the three criteria for being a king trend using information gathered by international organizations such as the European Union (EU), OECD and UN, especially statistics and projections, as well as relevant findings in the expert literature of disciplines such as futures studies, sociology, technology, business studies and political economy. The emphasis was very much on specific, empirically verifiable trends rather than general trends that are difficult to verify, such as rationalization or differentiation.

Where it was unclear whether a given trend met all three criteria, my rule was: when in doubt, leave it out. Trends that did not turn out to be king trends fell short of meeting the criteria in a number of different ways. Some apparent trends are not clear trends at all, such as the supposed increases in income inequality, immigration and drug use as well as the supposed decline in union membership. Others were definite trends in the past but now appear to be flattening out, such as the long-term decline in fertility, most forms of environmental degradation, and the trends towards earlier retirement and shorter working hours. Other trends are excluded because they are not major in the sense of directly affecting the lives of a large number of people. Loss of biodiversity is a case in point here: we think it is a shame, but it doesn't really directly affect the lives of very many of us. Apparent trends in crime cannot be classified as king trends because the clandestine nature of crime means that available information is unreliable and because UN and Interpol figures indicating a steady increase in recorded crime are contradicted by survey findings. Evidence is inadequate in relation to organized crime as well. Other apparent trends cannot be classified as king trends because the evidence is insufficient or not clear enough, as in the cases of ethnic diversity and cultural and attitudinal trends (Compston, 2006, p. 8).

Although it is not possible to present full derivations of each of the 19 king trends, these will be briefly outlined in later chapters where their implications for public policy are drawn out and tested, based on the more extensive derivations set out in my *King Trends* book.

4.3 Methodology for tracing the policy implications of king trends

Once the king trends had been identified, the specific methodology used to derive the policy implications of each of these in turn had three remaining steps (Compston, 2006, pp. 6–18).

1. Identification of relevant political actors

In Chapter 1 a number of types of political actors who tend to be members of policy networks due to resource interdependencies were identified, including elected executives as well as departments and agencies at national and other levels of governance; other politicians such as legislators, especially members of legislative committees; judges and regulators; business firms; interest groups such as employer associations and trade unions; non-governmental organizations (NGOs) such as environmental groups and religious groups; journalists, editors and media proprietors; non-government experts such as climate scientists; and voters, due to the tendency of governments to try to exchange popular policies for electoral support.

The first step towards tracing the policy implications of any given king trend was to examine political actors of each type to ascertain whether they are likely to take an interest in the policy issues raised by this king trend or to be affected by it or its consequences and, if so, to pin down their identity more specifically. The result in each case is a list of political actors that is more relevant to the king trend under consideration than the original generic one. Table 4.2 sets out the results of this exercise in relation to climate change.

The purpose of working this way is to obtain a single relatively simple picture of the general features of the policy network relating to each king trend which is sufficiently general to apply to most if not all affluent democracies but does not require time-consuming empirical investigations of the politics of each of these countries. The risk, of course, is that this may result in errors that more detailed investigations would avoid, although so far this does not appear to be a problem.

2. Evaluation of the effects of each king trend on policy network variables

Once king trends and relevant political actors were identified, the next step in the analysis of each king trend was to use the official and academic expert literature to investigate the extent to which its progress over time implies changes in any of the policy network variables, focusing mainly on political actors entering or leaving policy networks, and on changes in their resources and policy preferences. Thus the internationalization of production, for example, would be expected to lead to foreign corporations joining relevant national policy networks, and, in addition, implies augmentation of the political resources of business (capacity to redirect investment) by making

Table 4.2 Generic policy network relating to climate change

Type of actor	**Specific actor**
Political executives and associated parties	Chief executives
	Environment ministers
	Economic, finance, industry, energy, transport and technology ministers
Non-government politicians	Opposition economic, environment, energy, transport, trade and technology spokespeople
	Legislative committees on the economy, environment, energy, industry, transport and technology
	Regional and local governments
	European commissioners in areas relating to the economy, environment, industry, energy, transport and technology
	Foreign governments

(Continued)

Table 4.2 (Continued)

Type of actor	Specific actor
Civil servants, special advisers and other public sector employees	Environment departments and agencies
	Economic departments and agencies, in particular energy, finance, industry, transport and technology
	European Commission Directorates-General relating to the economy, environment, industry, energy, transport and technology
	Regional and local administrations
	International organizations
Judges and regulators	Environmental, energy and transport regulators
Business	Fossil fuel producers and electricity generators: oil, gas, coal
	Renewable energy producers
	Nuclear energy producers
	Industrial users of energy such as steelworks
	Transport manufacturers and providers: road, air, rail, water
	Energy efficiency producers and services
	Trading firms of all sorts
Interest groups and non-government organizations	Business groups relating to energy, transport and industry
	Environmentalists
	Trade unions
	Motoring organizations
Media	National press and television; specialist environment, energy, transport and industry media
Experts	Climate change scientists, economists, and environmental, energy and transport experts in universities, think tanks and elsewhere
Electorate	Energy users, travellers, consumers of products produced using energy

it easier for companies to leave the country if governments displease them. And it is clear that king trends may also change policy preferences directly, as we have seen in the case of climate change.

There are two main reasons for this focus on policy actors and their resources and preferences. First, these variables are easier to characterize on a generic basis that applies to all affluent west European democracies than are actors' political strategies, their perceptions of problems and solutions, and policy network–specific rules and norms, which tend to be more geographically and historically specific. Second, the sheer number of direct and indirect causal paths that, according to policy network theory, can lead from changes in exogenous variables to changes in policy decisions is so great that there is a need to concentrate on just a few of these in order to keep the causal theory simple enough for it to be useful in practice as a predictive theory. What this means, in effect, is that the approach used here posits that changes in the membership of policy networks, and changes in the resources and policy preferences of their members, are the most effective ways of changing policy decisions. Whether this is indeed the case is one of the things that will be tested in later chapters.

Since governments often alter public policy in direct response to signals from the electorate such as opinion polls, due to their desire for re-election, it was also necessary to examine the impact of king trends on factors that influence electoral turnout and voter choice, as perceptions of these put pressure on government policy-makers to favour or oppose certain policies. The electoral literature suggests that four factors are especially important: (1) the relative size in the electorate of social groups which have distinct material or symbolic interests that are affected by government policy, such as social classes, age cohorts and churchgoers; (2) the extent to which voters identify with particular political parties; (3) the extent of issue-voting, especially economic voting; and (4) the agenda and partisanship of television and the press (Denver, 2003). King trends can affect each of these electoral factors, as we shall see in due course.

3. Evaluation of the direction of consequent pressures on public policy

The final step involves tracing the implications of any changes in policy network variables along the causal paths specified by policy network theory in order to draw conclusions about their eventual implications, if any, for policy decisions. Thus the appearance of a new political actor, or a significant strengthening of their resources, implies additional pressure on public policy to move in the direction desired by that policy actor, other things being equal. Conversely, the disappearance of an actor from a network, or a significant weakening in their resources, implies less pressure for public policy to move in their direction.

A change in the policy preferences of an actor with significant tradable resources may also alter the terms of resource exchange sufficiently to alter the content of the resulting policy decisions. If a peak business organization reverses its opposition to new measures to open domestic markets to foreign competition, for example, this would make it easier for public actors to go ahead with such a measure. Changes in preferences can also influence policy decisions directly where the public actor concerned makes a unilateral decision on the basis of their pre-existing policy preferences.

It is not enough, however, to analyse the policy implications of each king trend in isolation, as in reality king trends and their policy implications are likely to interact with one another. Before conclusions were drawn about the identity of the policy implications of any given king trend, therefore, other king trends and their policy implications were examined to determine whether their operation interfered in any way with the king trend under consideration or its implications for public policy and, if so, what this meant for formulating hypotheses about the policy implications of that king trend. Where a policy implication of another king trend contradicts a policy implication of the king trend under consideration, for example, one is not entitled to formulate either of these as hypotheses unless there are good reasons for supposing that one is much stronger, or more likely to occur, than the other. Further details of these interaction effects, and of moves to take account of them, are given in later chapters.

4.4 An example: tracing the policy implications of climate change

We now have a theory of policy change, the independent variables to plug into it, and a practical methodology for putting this to work. But how does using this method to derive hypotheses about the future of public policy work in practice? The best way of illustrating this is to show how it works in the case of a particular king trend. In this section the policy implications of climate change are analysed using the methodology set out above.

1. Identification of relevant political actors

The wide ramifications of climate change mean that a wide range of policy actors take an interest in climate change and possible policy responses to it, as Table 4.2 attests. Among the most prominent of these are environment ministers and economic ministers together with related departments and agencies, big energy producers and users, and climate change scientists. It is also worth noting that much decision-making on climate policy now takes place not at the national level but at the EU level and, to a lesser extent, at the global level with agreements such as the Kyoto Protocol. Among other things this implies that national climate policies are influenced not only by domestic actors but also by the preferences, resources and strategies of foreign governments, and thus indirectly by whatever actors influence these governments.

2. Evaluation of the implications of climate change for political actors
The causal paths between climate change and policy change that are specified by policy network theory begin with changes in perceptions of problems and solutions that alter policy preferences: political actors (including voters) learn from scientific and other expert evidence that climate change is a problem, and what the technically and economically viable solutions are believed to be, then as a consequence change their policy preferences to include the introduction of at least some climate policies unless to do so would conflict with other strongly held preferences. Changes in perceptions about problems and solutions that alter policy preferences may also be caused by the direct effects of climate change, such as flooding, although these only become concerns when the phenomena in question are framed as being caused by climate change. If scientists are correct and the economic and other effects of climate change become more severe as time goes on, more and more people and organizations will be directly affected in the years ahead and are therefore likely to become more supportive of strengthening climate policy. The signing of the Kyoto Protocol in 1997 demonstrates that most governments in affluent democracies now recognize climate change as a problem and include action to arrest it among their policy preferences, although this does not necessarily mean that all public actors within governments share this view.

At the same time, however, measures to combat climate change that impose economic costs are likely to be opposed by those for whom such policies might be costly or damaging. Where measures to reduce greenhouse gas emissions appear to threaten the competitiveness of large industrial energy users, for example, they are likely to evoke strong resistance both on the part of these industries and on the part of associated ministers, departments and agencies in government. Consumers also object to additional costs, as the British fuel tax protests of 2000 demonstrated (Doherty, Paterson, Plows and Wall, 2003). This means that governments that implement measures that impose costs on significant numbers of voters risk electoral retribution.

In addition, if reduction of greenhouse gas emissions is added to narrowly economic goals as an objective of economic policy, it follows that in at least some cases the most economically rational options (in terms of these narrow economic objectives) will not be chosen. It follows from this in turn that economic growth will be lower than it would otherwise be. To the extent that actors who place a high value on economic growth recognize this, their reservations about implementing climate policies will grow. Such actors are likely to include economic departments and agencies within government as well as the political executive, given that lower economic growth is believed to undermine a government's electoral support. Although climate change itself is expected to have increasingly economically disruptive effects in the long term, democratic governments with 3–5 year terms of office have every reason to prioritize the short-term except to the extent that long-term threats can be dramatized in day-to-day political life.

In short, we can expect to see broad agreement that something has to be done about climate change but opposition to specific measures on the part of actors for whom such measures would be costly or damaging.

3. Evaluation of consequent implications for public policy

From changes in policy preferences the causal links specified by policy network theory connect to resource exchange and policy change in at least four different ways: (1) directly without going through resource exchange; (2) via resource exchange alone; (3) via resources and resource exchange; and (4) via strategies, resources and resource exchange.

(1) Directly without resource exchange

Insofar as public actors change their preferences to include climate policies, they can translate their changed policy preferences directly into public policy by acting unilaterally without engaging in resource exchange with other actors. This is the first way in which, according to policy network theory, we would expect climate change to cause climate policies to be introduced and/or strengthened.

(2) Via resource exchange alone

Public actors who have altered their preferences to include climate policies and who wish to implement these while obtaining (or retaining) needed resources from other actors, such as political support, are likely to have to amend their preferred climate policies in order to obtain these resources. This implies resource exchanges that result in a trend towards stronger climate policies that are inflected by the preferences of these other actors.

Insofar as other actors change their preferences to include climate policies, the policy amendments that they seek from public actors in the course of resource exchange will include measures to mitigate and/or adapt to climate change, other things being equal. Again the implication is that over time there will be a trend towards stronger climate policies, other things being equal.

In relation to voters the same causal path applies because extensive media coverage of climate change means that as time goes on a growing proportion of the electorate is becoming aware of climate change as a problem. To the extent that voters' policy preferences change to include the introduction of climate policies, and governing parties believe that failure to introduce such policies will therefore lose them votes at the next election, this growth in the proportion of voters who know about climate change increases the incentives for governments to make policy concessions on this issue – that is, to introduce or strengthen climate policies – in order to win or retain these votes, thereby again increasing the likelihood that new and/or strengthened climate policies will be introduced over time.

Moreover, this type of pressure from voters for governments to take action will increase from time to time, at least temporarily, since if climate change is real there will be more frequent and well-publicized extreme weather events in European and other countries that can plausibly be attributed to climate change and which therefore lead to greater numbers of voters becoming concerned to the extent that they consider changing their vote, or their decision about whether to vote. There may also be further alarming scientific discoveries that have the same effect.

Whether changes in policy preferences among the members of any particular policy network actually lead to changes in resource exchange that result in strengthening of climate policy, however, also depends on the resources held by those opposed to action. If a government believes that introduction of certain measures would lead firms opposed to these measures to redirect significant amounts of private investment to other countries with less stringent climate policies, for instance, these measures are unlikely to be adopted even if they are desired by most if not all policy actors apart from business. This concern on the part of government is in part fuelled by the knowledge that the capacity of industry to move investment between countries if they object to what a government is doing is growing as a consequence of the internationalization of production, another king trend. This is an example of how the policy implications of one king trend can be influenced by another king trend and its implications.

Although there is no certainty that climate change will actually result in the introduction and/or strengthening of climate policies, however, the extent to which belief in climate change as a problem is now shared among policy actors implies that in many relevant policy networks there has been substantial growth in the relative resources of actors who want new and better climate policies, which suggests that at least some decisions to introduce or strengthen at least some climate policies will be taken in at least some policy networks. If scientists are correct and more and more people are directly affected by climate change as time goes on, or increasing numbers become alarmed by media coverage of the actual or potential effects of climate change, it follows from the above reasoning that the likelihood of action on climate change will increase further.

In short, changes in the policy preferences of a wide range of policy actors in relation to climate policies do not entail that there will be a trend towards more stringent climate policies but they do, via resource exchange, warrant a reasonable expectation that this will occur at least to some extent. Where it is easy to reduce greenhouse gas emissions or expand greenhouse gas sinks, for instance by improving energy efficiency where this would save money anyway, policy network theory implies that appropriate measures will in fact be taken.

(3) Via resources and resource exchange

Policy decisions may also be altered by changes in the resources at the disposal of particular policy network members caused by changes in the policy preferences of these and/or other actors. Increasing public concern about climate change may lead to increasing membership for environmental groups, increasing the value of the political support that these groups can offer the government in return for new and/or strengthened climate policies. The value of their political support for the government will also increase to the extent that the increasing numbers of voters who are concerned about climate change take notice of the views and recommendations of these organizations when thinking about how to cast their vote. Other things being equal, this implies a gradual strengthening of the climate policies favoured by environmental groups.

In addition, the desire of governments to do something about climate change, along with the increasing pressure exerted by other political actors and voters on governments to do something, increases the importance for them of obtaining the cooperation of actors who are in a position to help them do it. This adds to the effective tradable resources of actors such as producers of renewable energy and thereby increases the likelihood that governments will make policy concessions to these actors in order to obtain their cooperation, thus shifting public policy in the direction(s) preferred by these actors. If they do in fact cooperate, the result would be expected to be climate policies that are more effective, but at the cost of being inflected in the direction of the preferences of these actors.

However the converse does not apply to actors whose activities are part of the problem rather than part of the solution. Although the increasing pressure on governments to take action might be expected to reduce the importance for governments of obtaining (or retaining) the cooperation of political actors such as fossil fuel producers and big industrial users of energy, since the activities of such companies constitute a major cause of climate change, this potential effect is offset at least to some extent by the fact that governments need them to accept policies that restrict emissions rather than close shop and move to countries where climate policies are not as strict, which would not only be economically and probably electorally damaging but would also mean that the high levels of emissions of these firms would not be reduced.

(4) Via strategies, resources and resource exchange

The fact that any coherent strategy to mitigate climate change will require changes in many areas of public policy implies that policy actors who want action on climate change are likely to seek entry to a wider range of policy networks in their efforts to have climate policies introduced in a wide range of policy areas. In other words, climate change would be expected to lead to changes in the political strategies used by these actors. To the extent that they have resources that existing members of these networks want, such as political support that can be provided or withheld, they would be expected to be granted entry to an increasing number of policy networks, resulting in an increase within these networks in the relative resources of actors that favour action and in this way increasing the likelihood of action in this area.

If we integrate the results of tracing the implications of climate change along these four pathways, the overall conclusion that can be drawn is that climate change is likely, other things being equal, to lead to the introduction and/or strengthening of climate policies except where these impose significant costs on powerful actors or blocs of voters.

But other things are not always equal: any derivation of the policy implications of king trends in general needs to take into account interactions among the policy implications of different king trends. This means that the derivation of the policy implications of climate change needs to take into account the fact that, as we shall see in Chapter 8, some of these contradict the policy implications of the growing use of energy. Refusing permits for new coal-fired power stations, for instance, could substantially reduce greenhouse gas emissions but at the cost of undermining energy security. Such actions would also run counter to the pressure exerted by a number of king trends for public policy to become more business-friendly. Where the policy implications of king trends point in opposite directions, and there is no obvious reason to believe that one effect is significantly stronger than the other, policy network theory cannot give us any determinate prediction about the future direction of public policy. This means that policy network theory does not permit us to derive from climate change any propositions about the future of public policy where these would contradict the policy implications of growing energy use. In other words, any such propositions which have been derived need to be dropped if it is discovered that they contradict those derived from growing energy use.

Taking this into account, and bearing in mind that the economic and electoral costs to governments of failure to control climate change are not only mostly well in the future but also outside the control of any one government, while the economic and electoral costs of failure to ensure energy security and economic growth while also keeping business and voters happy are much more immediate, the logic of policy network theory therefore suggests that climate policies will not be introduced where this would be likely to undermine energy security, economic growth, the trend to more business-friendly policies, or electoral support in general. We would also expect them to be inflected as necessary to secure acceptance not only by voters but also by firms that the government believes might otherwise leave the country, and by actors who are in a position to facilitate or block passage or implementation of relevant policies. Policies that meet these criteria include measures to encourage less carbon-intensive energy and transport technologies, energy conservation and efficiency (including in relation to transport), fuel switching within and between transport modes, expansion of energy production from renewable sources, and voluntary agreements with particular industrial sectors according to which companies in these sectors undertake to reduce GHG emissions.

On the other hand, policy network theory does not make any determinate predictions in relation to emissions trading, the process by which countries or companies are allocated credits, or 'rights to emit' GHGs within an agreed international cap, and then buy or sell credits depending on the relative costs of (1) *not* reducing emissions and buying extra credits if necessary to cover these emissions, or (2) reducing emissions and selling any unused credits. This is because although emissions trading imposes costs on some companies, which runs counter to the pressure on governments to introduce more rather than less business-friendly policies, those companies that manage to reduce emissions cheaply may make money from selling their unused credits, which weakens business opposition to this type of scheme.

Carbon taxes, by contrast, impose taxes on all companies to which they apply – although even here opposition can be weakened by exempting selected sectors from such taxes and/or by using the revenue raised to reduce other taxes and charges, such as employers' social contributions, so that the net cost to business as a whole is nil. While the logic of policy network theory does rule out consistent across-the-board carbon taxes, therefore, because this runs counter to the pressure they are under to implement more rather than less business-friendly policies, it has no determinate prediction in relation to such taxes where exemptions are made and/or companies are compensated.

In relation to nuclear power the situation is slightly different: concerns about energy security and climate change both imply a shift towards nuclear power, and moreover its role in improving energy security means that nuclear power is a business-friendly policy, but its unpopularity in at least some of the test countries means that in these countries action at this stage would be highly politically damaging, so is not expected.

This analysis could be extended, but its purpose is to clarify how the methodology for deriving the policy implications of king trends can be applied in practice rather than to derive all the policy implications of climate change, so it is time to draw it to a close. For reasons of space it is not possible to go into the same level of detail in the derivations of the policy implications of the king trends covered in Chapters 6–11, but the methodologies used in these chapters are all based on the approach sketched here.

4.5 Summary

This chapter constructs a methodology for applying policy network theory as a theory of policy change to the task of generating plausible propositions about the future direction of policy change over a wide range of public policy. After explaining and justifying the choice as independent variables of king trends, defined as technological, economic, environmental and social trends that have been convincingly verified, significantly affect the lives of a large number of people, and are expected by relevant experts to continue operating at least up to 2020, specific steps were set out for deriving the policy implications of each king trend. These steps consist of identifying relevant political actors, evaluating the likely effects of the relevant king trend on the membership of relevant policy networks and on the resources and policy preferences of network members, and tracing the implications of these along the causal paths specified by policy network theory in order to deduce their likely effects on the direction of public policy. In the final section the use of this methodology was illustrated in relation to climate change.

We now have a methodology for deriving propositions about the policy implications of king trends. Before moving on to apply this, however, it is necessary to describe and justify the procedure that will be used to test these propositions. This is the subject of the next chapter.

5
Testing Policy Network Theory

5.1 Introduction

The aim of this book is not just to use policy network theory to derive propositions about the future direction of public policy, but also to test them. But how can you test propositions about the future of public policy? The aim of this chapter is to show that this can be done using evidence about recent policy trends. The first section begins by outlining the main features of the procedure that is to be used in the next six chapters to test hypotheses based on propositions generated by using policy network theory to derive the implications for the future of public policy of major long-term technological, economic, environmental and social trends, or king trends. By 'public policy' is meant policy instruments (regulation, taxes, spending and so on) and their settings as expressed in laws, regulations and other authoritative state decisions. The chapter then goes on to explain why the scope of testing had to be restricted in a number of ways, how the test results were evaluated, and why all hypotheses need to pass these tests if any of the policy implications of policy network theory are to be accepted as giving us a better idea of the future of public policy than we have at present. The second section identifies three methodological issues that confront this type of analysis and sets out how they are dealt with. These are the problems of overdetermination, endogeneity and omitted variables.

5.2 Test procedure

1. Outline and rationale

The obvious way to test hypotheses about the future is to wait until the future arrives and see what happens. All the hypotheses considered will eventually be tested this way. However in the meantime it is possible to get an idea of the extent to which these conclusions about the future of public policy are consistent with reality by testing them against evidence about recent policy trends. This is possible for two main reasons.

First, it has been established that the king trends identified have already been in operation for some time, this being one of the three defining criteria for king trends. If king trends really influence public policy, therefore, their impact should already be evident. It is possible that in at least some cases the effects of king trends on public policy in the future will be different to those of the past but, if so, this is likely to be due to factors other than changes in the essential nature of the causal relationship(s) between that king trend and public policy, as it is difficult to imagine that this relationship would alter all by itself.

The second reason why it is possible to test hypotheses about future policy trends using data about recent policy trends is that these hypotheses are derived entirely without reference to recent policy trends. The methodology for deducing the future policy implications of any given king trend, as we have seen, operates by identifying relevant policy networks, evaluating the impact of that king trend on network membership and on the resources and preferences of network members, and using the causal paths defined by policy network theory to trace through the implications of these effects for resource exchange and public policy. As this procedure does not at any stage refer to recent policy trends, and can be implemented without any knowledge of them, there is therefore nothing circular about using recent policy trends to test its conclusions about the future policy implications of king trends.

It is important to note that this procedure does not simply amount to testing propositions about the past generated by policy network theory, as the explanatory variables (king trends) are limited to trends that not only have been operating for some time but are also expected by relevant experts to continue operating for at least the next 20 years. This really is a test of hypotheses about the future.

It is also worth mentioning at this point that using past policy trends to test the policy implications of king trends assumes that the development of king trends over time causes simple unilinear trends in public policy rather than any other patterns of policy change. To the extent that this is not the case, hypotheses that incorporate this assumption will be disconfirmed because there will be no clear unilinear policy trends to be found.

On the basis of these considerations a test procedure was formulated that consisted of (1) deriving specific hypotheses about the future of public policy from the propositions generated by applying policy network theory to king trends, and (2) testing all hypotheses which posit significant policy change and for which reliable information for recent years was available for the 12 richest EU member states (Luxembourg excepted), apart from those the tests for which faced insuperable methodological obstacles. From the general and not immediately testable proposition that we should expect more business-friendly policies, for instance, we can derive the hypothesis that corporate tax rates, for example, have fallen in recent years, and test this against data on recent trends in corporate tax rates in these countries.

By 'recent years' is meant as close as possible to the period 1990–2005. A shorter period indicates that data is not available for the full period. A longer period is only used where the policy trend measured over this period is the same as over the period 1990–2005. At no point were periods chosen with a view to obtaining the 'right' result.

As it would take too long to locate all available information on recent policy trends relating to each hypothesis, the search for evidence consisted of looking for relevant and authoritative data until some was found, using this to test the relevant hypothesis, then moving on to the next test rather than going on to try to collect further evidence. However care was taken to ensure as far as possible that the measures used to test each hypothesis do measure what they are meant to measure (validity), namely the changes in policy instruments and/or their settings to which each hypothesis refers, for instance by using data that is as close to its raw form as possible and by ensuring that any grouping of raw data into new units results in units that are as similar as possible to the units used in the relevant hypotheses (King, Keohane and Verba, 1994, pp. 151–2).

The selection of countries is driven largely by the desire to apply this analysis to more than one country so that (1) it is of wide relevance, (2) there are multiple cases on which small-N analytical methods can be used, and (3) the results are less likely to be affected by the idiosyncrasies of a single and possibly atypical country. Small-N qualitative methods are used, rather than regression analysis, due to the relatively small number of countries being analysed and the magnitude of the data demands and methodological difficulties that using regression analysis in this context would involve.

At the same time, however, the aim is also to restrict the scope of testing to similar countries in order to limit the number of country variables that might possibly obscure any effects of king trends on public policy by inflecting these king trend effects in different ways in different countries. The policy implications of climate change, for instance, may be quite different in rich countries than in poor ones due, among other things, to the differences in resources available to governments in these countries.

The analysis is therefore restricted to countries that are democratic, affluent and EU member states in order to control for at least type of government, level of economic prosperity, and whether a country is a member of the EU. More specifically, the countries chosen consist of all those EU member states in which gross domestic product (GDP) per capita in 2006 was greater than the EU average apart from Luxembourg, which is excluded on the grounds that it differs significantly from other rich EU member states in being a city state that has a far smaller population than any of these 12 countries as well as a GDP per capita that is twice as high as the next richest EU member state. Since 1997 the only country that has joined this group is Spain while none have dropped out, and projections indicate no change in its composition up to 2008 (Eurostat, 2007, 2007a). It is important to note that this set of countries was chosen in advance of performing the tests reported in the next six chapters, and on the basis of (potential) control variables rather than on the dependent variable, consistent with best practice (King, Keohane and Verba, 1994, Chapter 4). One issue that needs to be kept in mind, however, is that EU membership means that in some respects these cases are not independent. Changes in laws caused by implementation of EU directives, for example, are not independent of each other but derive from decision-making at the EU level, albeit decisions in which all test countries participate.

For ease of reference the 12 countries selected for analysis are divided into three groups: (1) the big five (Britain, France, Germany, Italy and Spain); (2) the three Scandinavian member states (Denmark, Finland and Sweden); and (3) the remaining four (Austria, Belgium, Ireland and the Netherlands). These are listed with their GDP per capita in Table 5.1.

The overall conceptual framework used to evaluate the results of the tests is Karl Popper's falsification approach. This is based on the idea that empirical tests can never positively prove that an empirical proposition (theory) is true because even if all past tests have produced results that are consistent with the proposition being tested there is always the possibility that the results of the next test will contradict it. Instead what a test does, to the extent that its results are consistent with the predictions of the proposition being tested, is demonstrate that this proposition remains standing after being subjected to a reality check – or, in Popper's terminology, that is has not (yet) been falsified (King, Keohane and Verba 1994, p. 100; Popper, 1963, pp. 33–7, 42, 53). The idea is that

Table 5.1 Country selection for hypothesis testing

Country group	**Country**	**GDP per capita, 2006 (EU-27 mean=100)**
Big five	Britain	119.1
	France	112.8
	Germany	113.6
	Italy	103.7
	Spain	102.4
Scandinavian three	Denmark	126.6
	Finland	116.3
	Sweden	120.3
Remaining four	Austria	128.7
	Belgium	123.3
	Ireland	142.8
	Netherlands	132.1

GDP per capita is expressed as a percentage of the EU-27 average and calculated on the basis of Purchasing Power Standards to ensure that it is purchasing power that is being compared.
Source: Eurostat, 2007a.

a proposition or theory is set up to fail by exposing its implications to evidence that might contradict them. If the theory passes, one becomes a little more confident that it does tell us something about reality. If it fails, one changes the theory, or switches to another theory, then submits the new or revised theory to a new test. And so on.

Accordingly, steps were taken to ensure that all of the hypotheses being tested were in fact falsifiable, at least in principle – that is, that there was at least one possible value for the dependent variable that, if observed in the course of testing, would lead to the hypothesis being rejected. We have already seen that it is not difficult to construct a hypothesis that sounds reasonable but cannot in fact be falsified. It is perfectly conceivable that climate change, for example, does make climate policies more likely but that in practice such policies are always blocked by business interests, but a hypothesis formulated on this basis, namely that climate change makes climate policies more likely but does not guarantee their emergence, would not be falsifiable, as there would be no possible findings that would lead us to reject it: if climate policies appear, this is in line with the predictions of the hypothesis, but if they don't appear this is also consistent with the hypothesis. For this reason the hypotheses tested are limited to those for which it is plausible to claim that their hypothesized effect(s) dominate other factors to the extent that they do show up in reality, so that their absence would falsify the proposition being tested.

To sum up, the basic test procedure was to test hypotheses about future policy trends by examining whether relevant recent policy trends have been moving in the same direction as the hypothesized future policy trends. To the extent that they have been, the relevant hypothesis is considered to be confirmed in the Popperian sense of not being falsified (proven false). Otherwise it is rejected.

2. Why not all policy implications of king trends can be tested

My focus on testing the policy implications of king trends naturally means that the following chapters focus on examining and testing those policy implications for which one or more specific hypotheses about past policy trends can be derived and tested.

In practice, however, this means that some of the policy implications derived and set out previously (Compston, 2006) are not tested at all. One reason for this is that in some cases policy network theory applied to one king trend generates policy implications that are contradicted by the policy implication(s) of one or more other king trends. This means that overall the policy implication in that particular area is indeterminate unless there is some way of working out which of the opposing effects is likely to be stronger. In relation to crime, for example, most crime is committed by young men so that an ageing population implies falling crime, other things being equal, but on the other hand the trend towards smaller households implies rising crime, as unmarried young men and people brought up in one-parent families are more likely to commit crime, and the trend towards secularization implies fewer constraints on behaviour (for details see Compston, 2006, pp. 257, 276–8, 289). In other cases it was unclear how a policy implication could be tested, adequate data was not readily available, the policy implication referred exclusively to the future so cannot be tested using data from the past, the data that would be used to test the policy implication had already been used to establish the existence of the king trend under consideration (in rare cases), or the policy implication was judged not to be interesting enough to test.

However it is important to make the point that the results of all tests that were carried out in a way that is methodologically acceptable are reported: there has been no winnowing out of inconvenient results. I have also tried not to let any pre-existing knowledge about recent policy trends influence my derivations of policy implications and hypotheses. Although in cases such as climate change it is impossible not to be aware of what has been happening in relation to climate policy, at least in general terms, the effort has been made not to let existing knowledge influence deductions about the implications of king trends for public policy. That is, I have tried to ensure that nothing is included that would not have appeared had I been totally unaware of recent policy trends, and that nothing has been omitted that would have been included had I been unaware of these developments.

3. Determining the strength of causal inferences

Suppose we put a hypothesis to the test. How do we judge to what extent the results support it?

For any given country, hypotheses are considered to be confirmed in the Popperian sense of not being falsified if and only if the relevant indicators of the dependent variable are as predicted. To the extent that the hypothesis predicts a trend in a particular direction, this means that the value of the dependent variable at the end of the period surveyed is either higher or lower than its value at the beginning of the period, depending on the prediction of the hypothesis. If the value is otherwise – lower or much the same when it was predicted to be higher, or higher or much the same when it was predicted to be lower – the hypothesis is considered to be falsified or disconfirmed. In other words, the hypothesis is considered to fail in relation to the country under consideration unless the dependent variable expressed as a trend points in the predicted direction. Both movement in the opposite direction and no trend at all are considered to constitute falsification unless there are obvious factors that would be likely to mask any underlying long-term trend, in which case the test is deemed to be inconclusive unless these other factors can be taken into account in the hypothesis testing.

Because the dependent variable at the end of the time period has just three possible values – higher than its value at the beginning of the period, lower, or much the same – guesswork would enable one to correctly predict its value in maybe one out of three cases, so the actual congruence of predictions and observations needs to be considerably higher than one in three for the results to be considered supportive of the relevant hypothesis.

It is at this point that analysts often use tests of statistical significance to evaluate the strength of findings. As these are designed to estimate the probability that a statistical relationship calculated for a sample does not occur in the underlying population, however, such tests are not relevant here. This is because the aim is to determine to what extent the hypotheses tested are confirmed for the 12 countries selected for examination: these countries *are* the population. Those who use sample statistics might make the rejoinder that these 12 countries could be considered to be a random sample of a larger population of affluent countries. But this makes no sense. First, the purpose here is not to construct universal laws that apply to all conceivable affluent democracies, but to get it right for these 12. Second, even if tests of statistical significance were considered to be relevant, at least two of the conditions for their correct use are not fulfilled: the 12 selected countries are not a random sample of any larger population of actual countries, such as all EU member states or all industrialized democracies, and the tests for individual countries are not completely independent of one another, especially where the EU level is involved. (If these problems are disregarded, however, it is perhaps worth noting that if we assume that for each country the probability of obtaining the correct result by chance is 50 per cent, the probability that at least 9 correct results out of 12 could be obtained by chance is just over 7 per cent (Vassarstats, 2008), slightly above one of the standard (but arbitrary) significance test criteria of 5 per cent.)

Rejection of tests of statistical significance as the overriding criterion for acceptance or rejection of a hypothesis means that assessing the strength of findings needs to be done in other ways. The general approach used here is as follows.

First, if the results in all 12 countries are consistent with the hypothesis, this is considered to constitute strong support for that hypothesis, as it is clear that the hypothesis has not been disconfirmed.

Second, if the results are consistent with the hypothesis in 9–11 of the 12 countries, this is considered to constitute sufficient support for that hypothesis to be confirmed in the Popperian sense of not being disconfirmed. The reason why it is reasonable to accept hypotheses with predictions that are consistent with the evidence for less than all 12 countries is that the propositions on which they are based refer to increasing likelihood of policy change rather than certain policy change. This is because changes in resources, for example, will lead to policy change when they make the difference between winning and losing on a policy decision, but not where there is a threshold for a change in the balance of power within a policy network and the increase in resources is not sufficient to tip the balance. For this reason, and because of the requirement that all hypotheses must be falsifiable, hypotheses specify that the causal effects of king trends on public policy *dominate* those of other factors, rather than totally determining public policy to the exclusion of all other factors or merely increasing their likelihood. Consistency of hypotheses with evidence in at least 9 of the 12 countries covered is the criterion chosen to distinguish cases in which the effects of king trends dominate from cases in which they don't. Adoption of more stringent criteria, of course, would have increased the likelihood that at least some hypotheses will be rejected, just as adopting less stringent criteria would have reduced this likelihood.

Third, if the results are consistent with the hypothesis in fewer than 9 of the 12 countries, the hypothesis is rejected.

These criteria are adjusted where the nature of a particular test suggests that they are not appropriate in this exact form.

4. Testing policy network theory

If we are to have at least some confidence in the predictions of policy network theory about the future of public policy, these predictions not only need to be consistent with the available evidence but also need to be generated by a theory of policy change that is itself consistent with the available evidence. If the underlying theory is found to be flawed, all we are left with are predictions that are consistent with the available evidence for unknown reasons.

As Popper's falsification approach specifies that a theory is falsified if just one test yields results that are inconsistent with its predictions, *all* the predictions of policy network theory need to be consistent with the available evidence if it is not to be rejected. In other words, *all* the hypotheses of policy network theory that we are considering need to be confirmed (not disconfirmed) if policy network theory itself is not to be falsified. This is a stern criterion, but if one of the hypotheses of policy network theory is disconfirmed, and errors cannot be found in its derivation, this does indicate that the underlying theory of policy change is flawed in some way. By the same token, however, if all hypotheses are confirmed, and policy network theory is therefore validated by the available evidence, it would be reasonable to place at least some confidence not only in the tested propositions about policy change but also in the predictions of policy network theory about the future of public policy that have not been tested. A finding of this nature would obviously dramatically augment the value of policy network theory for the analysis of public policy.

Much, then, depends on whether disconfirmed hypotheses are well-formed or not, as disconfirmation of a hypothesis that is not in fact logically implied by a policy implication of a king trend, or which is based on a policy implication that is incorrectly derived, would of course be completely irrelevant to the analysis. Where the predictions of a hypothesis do not match up with observations of recent policy trends, therefore, it is vital to check that the derivations of policy implications and hypotheses, and the relevant tests, are not flawed.

One possibility is that failure to meet the criteria for confirmation can be attributed to failing to take into account the effects of other factors. If there is evidence of the existence of an obvious countervailing factor in those countries for which the hypothesis is disconfirmed, for example, and there is an obvious and non ad hoc place for it in the conceptual, logical and empirical framework generated by applying policy network theory to king trends, it is reasonable to conclude that the result should be viewed as being inconclusive rather than negative.

Where errors of derivation are found, the relevant hypothesis is amended as appropriate and re-tested. Where this results in its being confirmed by the evidence, its threat to policy network theory dissolves. Where discrepancies between hypothesis and observations cannot be explained in terms of short-term factors or errors in deriving the relevant proposition, however, the hypothesis is conclusively rejected and the validity of policy network theory as a theory of policy change is, at the very least, put in question.

5.3 Methodological issues

A complex and ambitious test procedure such as this inevitably encounters methodological issues that need to be dealt with before the testing goes ahead. In the case of this analysis the main such issues relate to overdetermination, endogeneity and omitted variables.

1. Overdetermination

Using policy network theory to derive the policy implications of king trends reveals that in a number of cases different king trends generate the same policy implications and/or specific hypotheses. Furthermore, all the independent variables – king trends – are correlated with each other, positively or negatively, in that they are all unilinear trends up or down. What this means is that if a hypothesis based on more than one king trend is tested and not disconfirmed, it is impossible to tell which of the relevant king trends are more or less important as causes of the policy implication concerned. This is a problem of overdetermination.

For many analyses the existence of uncertainty about which independent variable or variables are the real causal factors is a big problem. If you want to know what causes A, the information that it could be B or C is not very helpful.

But this isn't a problem for the analysis here because where an overdetermined hypothesis about a future policy trend is confirmed (not disconfirmed), it means that (1) both explanations are left standing by the test, which according to the falsification approach is as much as we can expect from testing, and (2) ultimately what we are testing is policy network theory as a theory of policy change, and this too remains standing. In other words, the existence of overdetermination does not prevent the tests from giving us the information that we need. For this reason it need not stand in the way of testing hypotheses.

2. Endogeneity

One problem with testing the hypothesis that A causes B by investigating whether there is an observed correlation between A and B is that such a correlation is, logically, just as compatible with the hypothesis that B causes A. Where there is any theoretical or other reason to suspect that in fact B causes A as well as, or instead of, the other way around, finding a correlation between A and B does not unambiguously indicate that A causes B. This is the problem of endogeneity.

Although this analysis has focused on how king trends do or do not influence policy change, in the cases of a number of policy implications of king trends it is possible that it is policy change that is driving king trends rather than the other way around. It is also possible that the causal arrow runs both ways, that is, that the king trend and the policy trend influence each other. The internationalization of production, as we shall see, implies increasing pressure on governments to assist transnational companies (TNCs) by encouraging inward investment, due to the increasing economic significance of TNCs, the increasing proportion of national production that can be relatively easily transferred elsewhere, and the increasing numbers of foreign TNCs active in policy networks, but at the same time it is also likely that the internationalization of production is itself at least in part a consequence of policies such as the deliberate removal of legal barriers to inward investment. In such cases finding a recent policy trend that is going in the predicted direction is just as consistent with the hypothesis that the policy trend is driving the king trend as it is with the hypothesis that the king trend is driving the policy trend.

As with overdetermination, however, endogeneity is not a significant problem for this particular analysis because even if confirming (not disconfirming) a king trend to policy trend hypothesis at the same time confirms a policy trend to king trend hypothesis, this does not change the fact that the king trend to policy trend hypothesis, and thus policy network theory, is left unscathed by the test.

3. Omitted (lurking) variables

One of the most serious problems that can affect hypothesis testing is the possibility that the dependent variable is influenced not only by the explanatory variables included in the test but also by variables that are not included, as this can yield misleading inferences about causal effects. This is because in such circumstances an effect that is attributed to the key explanatory variable may in fact be caused by an omitted variable as well or instead. This type of omitted variable is rather aptly referred to by Moses and Knutsen as a lurking variable (2007, p. 89).

More precisely, possible explanatory variables other than the hypothesized one need to be controlled for (taken into account) when they are correlated with both the dependent variable and the key explanatory variable, apart from those that are in part a consequence of the key explanatory variable and are therefore part of the causal chain between explanatory and dependent variables, because otherwise any inference made about the causal effect of the key explanatory variable is in fact inadvertently estimating the causal effect of both the key causal variable and the other explanatory variables (lurking variables) combined (King, Keohane and Verba, 1994, pp. 169–74).

Another way in which omitted variables can lead to misleading causal inferences is through obscuring the causal effects of the explanatory variable. The effects of certain king trends may be blocked in countries in which there are relatively numerous veto points, for example, so that the expected trends in public policy only show up in some countries even if the king trends concerned are exerting pressure on public policy in all countries to move in that direction. Similarly, oscillations in public policy due to party alternation in government may obscure any long-term policy trends.

What is the appropriate response to this problem?

First of all, it should be pointed out that once again the logic of the test procedure means that the possibility of omitted variables does not affect whether the hypothesis is considered to be disconfirmed or not. This is because each test consists wholly and solely of evaluating whether the predictions of the hypothesis being tested are consistent with the evidence relating to relevant recent policy trends.

At the same time, however, one's confidence in the realism of the hypothesis will be improved to the extent that the problem of omitted variables can be at least reduced. If the suspected omitted variable is another king trend, then logically either this effect pushes public policy in the same direction as that exerted by the king trend under consideration, amplifying any effects that the king trend has, or it pushes public policy in the opposite direction, in which case the hypothesized effects of the king trend and the omitted king trend(s) may well cancel each other out. The appropriate response in this situation is therefore to keep hypotheses where both the king trend of interest and the omitted king trend(s) are predicted to push public policy in the same direction and live with the overdetermination that results, as discussed earlier. Where the hypothesized effects of the king trend of interest and the omitted king trend(s) contradict each other, the appropriate response is to drop both hypotheses on the basis that these effects cancel each other out, unless there are good reasons for supposing that one is much stronger, or more likely to occur, than the other. The analysis of each king trend therefore includes consideration of the policy implications and hypotheses of all other king trends in order to determine whether any of them predict the same policy trend – or the opposite policy trend – as the king trend being analysed.

For other types of omitted variable, the appropriate response is different. First, the possibly confounding effects of at least some variables that vary between countries, in particular type of government, degree of prosperity and EU membership, are taken out of the equation altogether by restricting country selection to affluent EU member states. Second, it is assumed that the effects on public policy of fluctuating variables, such as party alternation in government, even out over time. Third, the possibility that resistance to the effects of king trends is stronger in some countries than in other countries is one of the reasons for specifying that hypotheses need to be confirmed (not disconfirmed) for 9 of the 12 countries rather than all 12 countries.

5.4 Summary

The full procedure for deriving and testing the policy implications of king trends is now complete. This has three main steps.

First, the use of policy network theory to derive the implications for the future of public policy of king trends, defined as technological, economic, environmental and social trends that have been convincingly verified, significantly affect the lives of a large number of people, and are expected by relevant experts to continue operating at least up to 2020.

Second, the derivation of specific hypotheses from these policy implications where they were not already specific enough to be tested.

Third, comparison of the policy predictions of these hypotheses with evidence about recent policy trends in the 12 richest EU member states (Luxembourg excepted). It is legitimate to use information about past policy trends to test hypotheses about the future of public policy because (1) it has been established that the king trends identified have already been in operation for some time, this being one of the three defining criteria for king trends, so that if they really influence public policy their impact should already be evident, and (2) these hypotheses are derived entirely without reference to recent policy trends, so that there is nothing circular about using recent policy trends to test them. For pragmatic reasons the test procedure is based on searching for relevant and authoritative data until some is found, using this to test the relevant hypothesis, then moving on to the next test rather than trying to locate all relevant evidence.

Where it is found that public policy in the recent past has moved in the direction predicted by a hypothesis in all 12 test countries, this hypothesis is accepted on the Popperian basis that it has not been disconfirmed. The finding that public policy in the recent past has

Table 5.2 King trends by chapter

Chapter	**Trends**
6. Policy Implications of Technological Trends	Developments in information and communications technology
	Developments in biotechnology
	Developments in military technology
7. Growing Affluence, the Shift to Services, and the Growth of Women's Employment	The growth and diversification of production and consumption
	The shift to services
	The growth of women's employment
8. Energy Use, Mobility and Climate Change	Greater energy use
	Increasing mobility
	Climate change
9. Trade Expansion and the Internationalization of Production and Finance	The expansion of trade
	The internationalization of production
	The internationalization of finance
10. Sex and Secularization	Sexual liberalization
	Secularization
11. Population Ageing and the Expansion of Education	Population ageing
	Rising levels of education
Trends not covered	*Developments in health care technology*
	The expansion of mass media
	Smaller households

moved in the direction predicted by the hypothesis in 9–11 of the 12 countries is also considered to constitute sufficient support for that hypothesis to be confirmed, in the sense of not being disconfirmed, on the basis that the hypotheses specify that the causal effects of king trends on public policy *dominate* those of other factors, rather than totally determining public policy to the exclusion of all other factors. If the results are consistent with the hypothesis in fewer than 9 of the 12 countries, the hypothesis is rejected.

If we are to have at least some confidence in predictions about the future of public policy, these predictions not only need to be consistent with the available evidence but also need to be generated by a theory of policy change, in our case policy network theory, that is consistent with the available evidence. As Popper's falsification approach specifies that a theory is falsified if just one test yields results that are inconsistent with its predictions, for policy network theory to be substantiated *all* of its hypotheses need to be confirmed (not disconfirmed). Since so much therefore depends on whether disconfirmed hypotheses are well-formed or not, where a hypothesis does appear to be disconfirmed its derivation is checked for errors and, if errors are found, it is amended and re-tested, rather than being rejected immediately. If it is disconfirmed again, of course, it is definitively rejected.

The next six chapters set out the results of putting this procedure to work for 16 of the king trends, as it was not possible to derive testable hypotheses for all 19 of them. Table 5.2 sets out which king trends each of these chapters deals with.

6
Policy Implications of Technological Trends

6.1 Introduction

This chapter reports the results of identifying and testing the policy implications of technological trends, in particular developments in information and communications technology (ICT), biotechnology and military technology. The analysis of each of these three king trends follows the same sequence.

First, a brief description is given of the relevant king trend, based on the fuller account given in my book *King Trends and the Future of Public Policy* (Compston, 2006).

Second, the policy implications of the relevant king trend are traced, again based on the fuller account in my *King Trends* book. This is done by means of identifying any likely effects of the trend on the membership of policy networks or on the resources or policy preferences of network members, and then tracing the implications of these effects along the causal paths specified by policy network theory in order to deduce their likely effects on the direction of public policy. For reasons of space it is not possible to spell out all details of these derivations, but the main features are covered. Specific hypotheses about policy trends are then derived from these general policy implications where these are not already specific enough to test.

Third, and this is new, the policy predictions of these hypotheses are compared with evidence about recent policy trends in the 12 richest EU member states (Luxembourg excepted). Where it is found that public policy in the recent past has moved in the direction predicted by a hypothesis in at least 9 of the 12 countries, this hypothesis is considered to be confirmed in the Popperian sense of not being disconfirmed.

6.2 Developments in information and communications technology

Few people in the developed world can have missed the rise and spread of ICT during the past couple of decades, especially the explosive proliferation of computers and mobile phones. But there is more to it than this. ICT can be conceptualized as comprising all technology that facilitates the creation, manipulation/processing, storage and communication of information. Developments in ICT therefore include developments in telecommunications, Internet technologies, data storage, software, sensors, biometrics, robotics and artificial intelligence (Compston, 2006, pp. 21–3). The OECD identifies three main underlying technological trends that are driving developments in this area: rapidly increasing processor and memory performance that increase memory and processing power tenfold every five years, declining memory costs, and expanding communications capabilities. As computing power increases, unit price and size decrease and communications capabilities expand, leading to the improvement of computing and communications capabilities and their incorporation into more and more devices (OECD, 2002a, pp. 221–34).

The development of ICT has a number of direct implications for public policy, although not all of these could be tested (see Appendix 1, Table A1.1, for details). It also affects public policy indirectly via other king trends, as there are obvious applications in health care and defence and it has contributed to the growth and diversification of production and consumption, the shift to services, the internationalization of production and finance, and the expansion of mass media.

The major direct policy implications of ICT that do lend themselves to testing are (1) a shift towards policies that facilitate its further development and use, (2) increasing use of surveillance, and (3) more vigorous measures to counter cybercrime.

1. Shift towards policies designed to facilitate the development and use of ICT

Developments in ICT have had an enormous impact on business and the economy. There is now a large and growing ICT sector consisting of manufacturers of products intended for information processing and communication, or which use electronic processing to detect, measure or record physical phenomena or control a physical process, as well as providers of services that enable the function of information processing and communication by electronic means (OECD, 2003c, p. 96). ICT has the potential to affect most if not all functions within firms, as well as every industry and service, through its application to scientific and market research; design and development; machinery, instruments and process plant; production systems and delivery systems; and marketing, distribution and general administration (Freeman, Soete and Efendioglu, 1995, p. 588). There is also the growth of e-commerce, defined as 'the sale or purchase of goods or services, whether between businesses, households, individuals, governments, and other public or private organizations, conducted over computer-mediated networks' (OECD, 2002b, p. 131). The global web of telecommunications that ICT has made possible facilitates cross-border operations by corporations by making it easier to monitor, coordinate and manage their dispersed activities. It also facilitates the internationalization of financial markets. Furthermore, developments in ICT such as digitization have led to big changes in the media industry (Gorman and McLean, 2003, p. 206). And these are just a few of its effects.

One consequence of this is that ICT is becoming more and more important in determining business success or failure, as its application results in enhanced knowledge creation, greater access to information and knowledge, and expanded capabilities for coordinating and applying information across a widening range of applications and uses, as well as making possible new products and new efficiency gains and productivity growth. Computer networks appear to be especially important here, as they make it easier for firms to outsource activities, work more closely with customers and suppliers, and better integrate activities throughout the value chain (OECD, 2002b, p. 221; 2003b, p. 64).

It is therefore not surprising that there is considerable evidence that the use of ICT by business contributes significantly to economic growth. The OECD reports that for the countries for which data is available, ICT investment during the period 1995–2000 typically accounted for between 0.3 and 0.8 percentage points of growth in GDP per capita, and similar studies come up with similar findings (OECD, 2003b, p. 36). Firm-level evidence also suggests that effective diffusion and use of ICT contributes to economic growth (OECD, 2002b, p. 22).

All democratic governments want to be re-elected, since otherwise none of the policy preferences that distinguish them from their opponents will be implemented, and economic growth is commonly believed to be an important influence on any government's re-election prospects. The growing significance of ICT for economic growth therefore implies a shift in the policy preferences of elected governments and their officials towards greater emphasis on policies designed to encourage the diffusion of ICT to businesses, individuals and households, for example by means of funding or providing incentives for R&D in ICT, providing or encouraging training in ICT skills, adapting regulatory frameworks, ensuring interoperability of ICT hardware and applications, adapting and enforcing intellectual property rights, and addressing security, privacy and electronic identification and authentication issues (European Commission, 2004d).

In addition, the increasing economic weight of ICT manufacturing and services in national economies means that the performance of ICT firms in particular is becoming more important in securing economic growth. This means that the scale of the investment that they can make or withhold is growing, thereby magnifying the benefits for government of taking their policy preferences into account. The pressure that these firms can put on governments is further increased to the extent that information-based companies find it easier to move elsewhere than industrial firms. Taken together this implies increasing pressure on national governments to nurture the ICT sector through means such as facilitating inward foreign investment by ICT companies, boosting incentives for domestic companies to invest in ICT-related R&D, increasing training in ICT skills, and improving the business climate in general for ICT firms.

Furthermore, moves to encourage the further development and use of ICT do not appear to be consistently opposed by any significant actors, although to the extent that they involve diverting resources from other areas one would expect some opposition to arise from time to time.

In short, developments in ICT create economic and electoral incentives for governments to take steps to encourage its further development and widen its use. As ICT has been developing for decades, these effects – if they exist – should already be apparent. The hypothesis to be tested is, therefore, that *in recent years there has been a shift in the 12 richest EU member states towards policies designed to facilitate the development and use of ICT.*

A survey of OECD countries in general reveals that, by 2004, OECD governments had introduced new policies and amended existing policies in a number of areas. Although the survey itself does not specify which countries pursued which policies, it does identify how many of the 30 OECD countries adopted each type of policy. It thus reports that 26 countries have implemented policies designed to encourage ICT R&D and innovation through R&D programmes in areas such as microtechnology, nanotechnology, intelligent systems and user interfaces, as well as through the development of e-government, promotion of innovation networks and clusters, government procurement, and provision of venture finance. ICT diffusion and use has been encouraged in 25 countries through means such as skills development (for example by integrating ICT skills into education at all levels), putting government online, diffusing technology to businesses by means such as promotion of e-commerce, and diffusing technology to individuals and households through means such as skills and content development. Policies designed to improve the business environment of ICT (25 countries) include the liberalization of telecommunications, adjustments to legislation on intellectual property rights, and promotion of ICT exports, while other policies are designed to enhance the ICT infrastructure (26 countries) by means such as promoting broadband using tax credits, developing electronic payment systems, and developing industry and product standards (including international standards); and governments have moved to promote trust on line (27 countries) by means such as strengthening security of information systems and networks (for example by establishing computer emergency response teams), making efforts to secure privacy protection, and strengthening consumer protection (OECD, 2004b, pp. 289–96).

It can be seen from this that even if it were the same countries that were *not* introducing each of these different types of policies, the maximum number of such countries would be three, and even if these were all rich EU countries this would still mean that 9 of the 12 test countries had introduced at least one such policy. More specific information can be found in the country reports on which the survey is based, but these are only available for 10 of the 12 test countries (Denmark and the Netherlands are omitted), and the wildly differing degree of detail given make these difficult to compare – although it is clear that policies designed to encourage the diffusion of ICT to business and individuals have been implemented in all 10 test countries for which information is given (OECD, 2004c).

In short, the test result seems unequivocal: the available evidence is in line with the hypothesis that in recent years developments in ICT have caused a shift towards policies designed to facilitate the development and use of ICT. This hypothesis is therefore *confirmed*.

2. Increasing use of surveillance

One important application of ICT is to improve the operations of government, for example by making decisions better informed, employing computers for mass processing tasks, and using the Internet for the provision of information and services (for more detail see Compston, 2006, p. 26–7). In general these applications result not so much in policy change as in changes to the ways in which existing policies are administered. In some cases, however, changes in the way that policies are administered amount to changes in public policy, public policy being understood as the activities of government as they affect those to whom they are directed. This is the case for surveillance. Whether or not one is under surveillance is of considerably greater significance than whether one uses the Internet to submit one's tax return, for example.

This is relevant because the logic of policy network theory suggests that the progressive development of ICT will lead to increasing use of surveillance by the state. The basic reason for this is that improvements in surveillance technology made possible by developments in ICT make it cheaper and easier for governments to use surveillance more extensively in areas such as defence, internal security and law enforcement. By 'surveillance' is meant the use of monitoring and recording technology as well as the creation and use of databases of personal information, and the recording of communications (House of Commons Home Affairs Committee, 2008, p. 11). Surveillance applications of ICT therefore include wiretaps, interception of email, Internet clickstream monitoring, video surveillance with facial recognition, satellite surveillance, biometrics, PINs, ID cards with programmable chips (smart cards), remotely searchable databases constructed by the state and businesses, data warehousing, data mining, data transfer between state and commercial databases, and international transfer of surveillance data (Compston, 2006, p. 25). Recent technological developments in this area include improvements in biometrics, the development of devices that can track the movements of goods and people, increases in the capacity to store large volumes of data and to search databases, and the introduction of interoperable systems that make it easier to share information (House of Commons Home Affairs Committee, 2008, pp. 16–17, 105–6).

Given that one would expect state instrumentalities such as police, internal security services and the military to want to take advantage of this, the likely consequence is that they and others, such as private security firms, will try harder to persuade relevant decision makers to make public policy more permissive in this respect in order to enable them to expand their use of surveillance. It is important to note here that expansion in the use of surveillance made possible by changes in the law should be distinguished from increases in its use that are directly attributable to changes in the technology itself, for example the installation of more video cameras by local authorities because they are becoming cheaper.

While the extension of surveillance is opposed by actors such as civil liberties groups and liberal political parties on privacy grounds, such actors do not have a permanent formal or informal veto on decisions in this area. The logic of policy network theory therefore implies that pressure on governments to extend surveillance is increasing while the strength of opposition to surveillance remains unchanged. It follows from this that we should expect a gradual extension of surveillance as an instrument of public policy. If this picture is accurate, the fact that surveillance technology has been improving steadily for decades implies that public policy has already moved in this direction. The hypothesis to be tested is, therefore, that *in recent years there have been deliberate moves in the 12 richest EU member states to increase state use of surveillance.*

Although comparable data on national laws and practices relating to state use of surveillance does not appear to be readily available for the 12 test countries, information on moves at the European level approved collectively by EU member states indicate that state use of surveillance has been increasing, and that it was increasing even before the attack on New York on 11 September 2001 (9/11) led to a vast expansion of the 'war against terror' that would be expected to include a big expansion in surveillance.

First, there was the establishment of the Schengen Information System for the use of state agencies such as police departments and immigration offices. This database, which came into operation in 1995 and is supplemented by a network of national databases, holds checkable information on criminals, previous asylum applications, stolen cars and other stolen property, extradition, third-country nationals refused entry to the EU, and individuals subject to a European arrest warrant or under surveillance for criminal activity. It is currently in the process of being upgraded to include the EU's new member states and to improve technical features, for example by enabling the inclusion of biometric data such as fingerprint and photographic data (European Commission, 2005; JSA, 2003; JSA, n.d.; House of Lords European Union Committee, 2007).

Second, EU legislation on data protection has become progressively more permissive about the use of surveillance, especially surveillance relating to crime and security. Although the Data Protection Directive of 1995 specifies ways in which member states must protect the rights and freedoms of citizens and their right to privacy, for example by prohibiting the processing of personal data such as that concerning racial or ethnic origin, at the same time it stipulates that member states may not restrict or prohibit the free flow of data between them for reasons connected with the protection of these rights, and moreover exempts data processing relating to crime and security from its provisions (Directive 95/46/EC; Privacy International, 2006). This is also the case with a subsequent Regulation on data processing by EU institutions, which in addition exempts institutions from its requirements where this is deemed necessary to safeguard an important economic interest of a member state or of the European Communities (Regulation (EC) 45/2001).

Subsequent to 9/11 there have been moves to permit member states to pass national laws on mandatory retention of traffic data for all communications (Directive 2002/58/EC) and then to oblige them to require communications providers to retain communications traffic data for up to two years (Directive 2006/24/EC). In 2004 a directive was passed that requires member states to establish an obligation for carriers to collect information on passengers for the relevant national authorities in order to improve border controls and combat illegal immigration, and these records have been made available to US authorities as well (Directive 2004/82/EC, European Community and United States, 2004). Another decision in 2004 requires all newly issued EU passports to contain digital facial images and biometric fingerprints by the end of 2007 (Euractive, 2006), while agreement was reached in June 2007 on the creation of the Visa Information System, a database that makes information on every visa application available to law enforcement and security agents across the EU (European Commission, 2007e).

A third indicator of the trend towards greater surveillance is the signing by all test countries of the Council of Europe's Convention on Cybercrime, as among other things this requires countries to establish domestic procedures for collecting and preserving electronic evidence such as computer-stored data and electronic communications (including the use of technical means to collect computer data and powers to compel individuals and organizations to hand it over); undertaking system search and seizure; and real time interception of data. Countries are further required to establish a rapid and effective system for international cooperation, including obtaining and handing over relevant computer data and permitting law enforcement agencies in one country to collect computer-based evidence for agencies of other countries (COE, 2001). Although this Convention was drawn up before 9/11, however, it was not signed by any of the test countries until two months later, in November 2001 (COE, 2001a), and privacy campaigners report that it was the attack on New York that galvanized countries to reach an agreement (ICAMS, 2005, p. 15). For this reason we cannot be sure that developments in ICT were the prime causal factors behind this. However, we can be sure that its provisions do not disconfirm the hypothesis being tested.

In summary, over the past few years EU countries collectively have been constructing more and bigger databases, requiring carriers and telecommunications providers to collect data for them, establishing greater powers to intercept, store and process electronic data, and increasingly sharing information with US agencies. There do not appear to be any developments that might constitute a counter-trend towards limiting the scope of permissible surveillance. The hypothesis that in recent years there has indeed been a general move towards increasing the use of surveillance as an instrument of public policy in the 12 countries covered is therefore *confirmed*.

3. More vigorous measures to fight cybercrime

One of the side-effects of ICT innovation has been the creation of new opportunities for predatory behavior such as interception of communications, electronic vandalism and terrorism (for example the electronic disruption of financial systems), extortion, interference with electronic fund transfer, fraud, share price manipulation, electronic money laundering, and theft of intellectual property rights (Grabosky and Smith, 1998; Jewkes, 2003). These types of activities, or cybercrime as they are collectively known, can be divided into three main types: traditional types of crime, such as fraud, which are committed over electronic communications networks and information systems; the publication over electronic media of illegal content such as incitement to racial hatred; and crimes unique to electronic networks, in particular attacks against information systems, denial of service and hacking (European Commission, 2007).

To the extent that this is thought to result in damage to the economy, the logic of policy network theory suggests that the concern of governments to maximize economic growth will lead them to adjust their policy preferences to include making these activities criminal offences and introducing measures to prevent or discourage them. In addition, policy network theory suggests that the harm suffered by the victims of these activities will lead them to alter their policy preferences to include measures to combat cybercrime. To the extent that these victims have political resources to trade with the government, this will add to the pressure on governments to act. We would also expect that the institutional missions of the armed forces, internal security services and law enforcement agencies will lead them to want to take action.

There are numerous ways in which governments and law enforcement agencies can act in this area. One relatively uncontroversial response would be to encourage or mandate the development and application by individual and corporate users of available preventive technologies (such as ingress and egress filtering, encryption, electronic surveillance and biometric identification systems) and the incorporation of security considerations into technology at the design stage (Compston, 2006, p. 41). Other options include adapting existing laws to take account of new forms of crime, and taking steps to ensure that law enforcement and security agencies have the resources and training to take full advantage of ICT in their fight against cybercrime. In finance, for example, the communications technology that facilitates international financial transactions can also be used by law enforcement agencies to monitor them (Sica, 2000, p. 71). As much cybercrime is unconstrained by national borders, a third response would be to improve international cooperation in this area (Jewkes, 2003).

In some cases, however, measures proposed by law enforcement and security agencies are likely to come into conflict with the interests of others. Moves to facilitate state access to private computer and telecommunications systems in the pursuit of criminal investigations, for example, obviously have the potential to compromise the confidentiality of private and commercial information. Moves to make electronic money laundering more difficult by imposing more stringent reporting requirements on financial institutions add to administrative burdens, may compromise commercial confidentiality and – for the less scrupulous – may lead to a loss of business. Moves to obstruct criminal communications by restricting anonymous access to telephony or the Internet, for example by banning pre-paid cards or restricting the use of re-mailers or Internet cafes, are in fact opposed by much of industry and by privacy experts (Grabosky and Smith, 1998, pp. 196–209; European Commission, 2001, p. 21).

Nevertheless, to the extent that cybercrime and its effects increase in magnitude, policy network theory suggests that their economic significance alone would be expected to lead governments to take at least some action in this area. Furthermore, as cybercrime has been existence for some time now, we would expect that such effects, if they exist, to have shown up already. The hypothesis to be tested is, therefore, that *in recent years there have been moves in the 12 richest EU member states to tighten regulation of ICT and increase international cooperation in this area.*

There is clear evidence of a trend in this direction.

First, all 12 EU countries covered by the analysis have committed themselves to international agreements that oblige them to tighten regulation of ICT. In particular, European and international agreements in recent years have extended intellectual property right protection to cover new ICTs such as computer programmes and the layout designs of integrated circuits. These include the World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) of 1996 and EU legislation to protect computer programmes, databases, copyright and intellectual property rights (European Commission, 2004; WTO, 2004).

Perhaps the most significant of these international agreements is the Council of Europe's Convention on Cybercrime of 2001 mentioned earlier, which all 12 test countries have signed and which, according to the Council of Europe, is the only binding international agreement on cybercrime. This obliges signatories to define criminal offences and sanctions for computer-related crimes that involve (1) affecting the confidentiality, integrity and availability of computer data systems without right, in particular gaining access to computer systems (hacking), intercepting computer data transmissions, hindering the functioning of computer systems (for example by deleting data), and producing or distributing computer programmes, other devices, passwords, access codes or other data designed to commit these offences; (2) altering computer data; (3) the loss of property to another person by means such as altering computer data or interfering with the functioning of a computer system (computer-related fraud); (4) producing or distributing child pornography through a computer system; and (5) using computers to infringe copyright and related rights as defined by agreements such as the Bern Convention, the TRIPS mentioned above, the World Intellectual Property Organization (WIPO) Copyright Treaty and the Rome Convention where these involve computer systems. As noted earlier, the Convention also requires countries to establish procedures for detecting, investigating and prosecuting cybercrime; collecting and preserving electronic evidence (including powers to compel individuals and organizations to hand over relevant computer data); system search and seizure; and real-time interception of data. Countries are further required to establish a system for international cooperation that includes making computer crimes extraditable offences, obtaining and handing over relevant computer data, and permitting law enforcement agencies in one country to collect computer-based evidence for those in another (COE, 2001).

Second, although comparable information on national-level moves to counter cybercrime is difficult to find, excerpts from relevant national legislation collected by a Norwegian judge indicate that the governments of all 12 test countries have indeed introduced laws to criminalize cybercrime in the narrow sense of crime unique to electronic networks, that is, attacks against information systems, denial of service and hacking (Schjolberg, 2006).

The available evidence clearly indicates that regulation of ICT has been tightened in the 12 test countries in order to combat cybercrime, and that international cooperation in this area has been increasing. There does not appear to be any evidence of any moves in the opposite direction. This hypothesis is therefore *confirmed*.

6.3 Developments in biotechnology

Controversies over issues such as genetically modified (GM) food have brought to public attention the fact that developments in biotechnology are increasingly influencing the way we live. By 'biotechnology' is meant 'the application of science and technology to living organisms as well as parts, products and models thereof, to alter living or non-living materials for the production of knowledge, goods and services' (OECD, 2003c). Its techniques and processes are being applied to a growing variety of areas, most notably agriculture and food production, energy production, manufacturing, environmental care and health care. Arguably the most significant of these in economic and political terms is the application of genetic engineering to agriculture by means such as improvement of plant (and tree) quality and productivity via breeding, cloning of superior plants, mutation, cell fusion between different species, and genetic modification to improve resistance to specific herbicides (to enable these to be used for weed control), improve resistance to insect pests and microbial diseases, and reduce losses during storage and transport. One consequence of this, of course, is the production of food from GM plants and animals. Other applications include the use of microbes to decompose organic waste including sewage; clean-up of contaminated water, land or air (bioremediation); production of energy crops such as sugar cane; conversion of organic wastes into direct energy or energy-carrier compounds such as ethanol, biodiesel, methane and hydrogen; production of fermented foods and beverages; use of bioreactors to replace existing industrial processes in areas such as chemicals and pharmaceuticals; use of plants and animals to produce pharmaceuticals; production of new antibiotics, vaccines, monoclonal antibodies and biopharmaceuticals such as insulin and human growth hormone; and gene therapy, cloning, designer babies, genetic testing and DNA fingerprinting for forensic science and paternity testing. It is also to be expected that biotechnology will be used both for criminal ends – biocrime – and in law enforcement, as well as for biological warfare (Compston, 2006, pp.48–9).

The few internationally comparable statistics on biotechnology that exist indicate strong growth in this sector. Between 1990 and 1999 the number of biotechnology patents submitted to the European Patent Office grew by 10 per cent per year, and biotechnology venture capital increased between 1995 and 2001 in most EU countries. The number of dedicated biotechnology firms founded per year grew substantially between 1976 and 1998 before dropping back to 1994 levels by 2000 (OECD, 2003d, pp. 14, 20; European Commission, 2002, pp. 35, 38). Meanwhile the number employed in the European health care biotechnology industry increased from 67,445 in 2000 to 77,907 in 2003, while revenues increased from $9872 million in 2000 to $13,937 million in 2003 (EuropaBIO, 2003). As there is no reason to doubt that technological innovation in this area will continue, the growing diversity of practical applications of biotechnology means that its use is highly likely to expand in scope and value over the next 20 years or so.

In these circumstances the logic of policy network theory suggests that the growing economic importance of biotechnology will cause a shift in the policy preferences of elected governments and their officials towards greater stress on policies designed to increase the use of biotechnology, attract biotechnology-related foreign investment, and benefit the biotechnology sector in general. At the same time the increasing economic weight of the biotechnology sector, coupled with the possibility that biotechnology firms that dislike a government's policies might choose not to invest in that country, implies increasing pressure on national governments to alter regulatory and other policies to benefit biotechnology and biotechnology-related firms, for example by expanding incentives for companies that invest in biotechnology and by adapting existing process and product regulation to biotechnology in ways that facilitate its development and use.

The fact that biotechnology, especially genetic engineering, comes with risks as well as benefits, however, means that there is a range of judgements about the wisdom of going ahead with certain applications, especially as in many cases we presently lack sufficient scientific information to be able to estimate the risks with any precision (Manning, 2000, p. 28). This sets the stage for the emergence of two opposing advocacy coalitions: one convinced of the benefits of biotechnology and discounting its risks, the other focussing on possible dangers. And by the beginning of the twenty-first century two such coalitions had emerged: (1) a producer-oriented coalition of biotechnology-using firms, such as agri-chemical companies, supported by molecular biologists, economic authorities and the US government; and (2) a safety-oriented coalition of environmentalist groups with support from environmental authorities, professional ecologists and the European Parliament. Farmers and European governments were divided (Patterson, 2000, Vogler and Russell, 2000, p. 8).

What this means is that for analytical purposes the applications of biotechnology can be divided into two types. First, there are those that are pushed by the producer-oriented coalition but resisted by the safety-oriented coalition, in particular applications involving genetic modification of plants, animals and humans. Although in such cases policy network theory does not provide us with any way of deciding whether such policies will be enacted, except where one of these coalitions obviously has far fewer resources than the other, the increasing pressure on governments to act would over time be expected to result in some policy change unless the opposing coalition is also being strengthened, for example by the occurrence of disasters in which applications of biotechnology are implicated.

The second group of applications of biotechnology consists of those that are not controversial, that is, those that are not opposed by any substantial safety-oriented coalition. In these cases the logic of policy network theory implies that the increasing pressure on governments to act will definitely result in more biotechnology-friendly policies.

As biotechnology has been developing for decades, if these effects exist they should already be apparent. The hypothesis to be tested, therefore, is that *in recent years public policy in the 12 richest EU member states has shifted in the direction of increased emphasis on facilitating the development and use of biotechnology*.

The available evidence suggests that this is indeed the case. Ever since the 1970s, biotechnological processes and products such as single-cell proteins, gasohol, self-nitrating plants and fermentation engineering have been promoted by governments as part of establishing a new and environmentally friendly industry (Bud, 1995; Falkner, 2000, pp. 144–5). Action has been taken to extend the scope of patents to cover biotechnology processes and products in order to encourage innovation in this area by enabling private firms to make money from biological research. The 1995 TRIPS agreement negotiated by WTO member states, for example, established minimum standards for patenting that include allowing patenting for any technology or process for making things, and in 1998 an EU Directive was passed on patentability of biotechnological inventions (Gaisford, Hobbs, Kerr, Perdikis and Plunkett, 2001, pp. 22, 37–9; Williams, 2000, p. 73; Manning, 2000, p. 16, European Commission, 2006). Furthermore, an EU report on national public policies designed to stimulate biotechnology research and its exploitation found that between 1994–98 and 2002–05 average annual budgets for biotechnology rose in 9 of the 12 test countries while decreasing in one country (Sweden) and remaining much the same in the other two (Britain and Belgium) (Biopolis, 2007, pp. 99–100).

There seems little doubt that governments in the 12 test countries have been stepping up policies to encourage the development and use of biotechnology, and there does not appear to be any evidence of policy changes in the opposite direction. This hypothesis is therefore *confirmed.*

6.4 Developments in military technology

This is the dark side of technological progress. In this section two of the policy implications of the spread of weapons of mass destruction (WMDs) are derived and tested. Other types of military technology are also developing, notably technologies for waging computer warfare (cyberwarfare), but for a variety of reasons the policy implications of these were not tested (for further details on these, see Compston, 2006, pp. 76–82, 92–97; Appendix 1 Table A1.4). The proposition that developments in military surveillance technology will lead to increasing use of surveillance by police and security agencies has in effect already been tested, and confirmed, in the more general context of testing the policy implications of developments in surveillance technology made possible by developments in ICT.

The three main types of WMDs are nuclear, biological and chemical weapons. These have the particular advantage for adversaries of Western forces of undermining the technologically based superior conventional capabilities of these forces and could be used to deter allied military action as well as in direct attacks on military forces or civilian populations. Biological weapons in particular are seen as the 'poor man's atom bomb' (Davis and Gray, 2002, pp. 269, 281).

As time goes on it is reasonable to expect that improvements in military technology will continue to spread beyond the Western alliance to other states and to non-state organizations such as armed religious groups and criminals. Export and control regimes and sanctions are thought to be becoming less effective due to diffusion of technology, more porous borders and the dependence of arms manufacturers on foreign sales. ICT-driven globalization is expected to significantly increase interaction among terrorists, narcotraffickers, weapons proliferators and organized criminals, giving them better access to information, technology, finance, and deception and denial techniques. This facilitates the proliferation of WMDs and their means of delivery (CIA, 2000).

Over the next few decades, for example, more and more non-nuclear states are likely to develop and deploy nuclear weapons. Up to now most potential nuclear states have chosen not to do so but instead to sign up to the 1970 Nuclear Non-Proliferation Treaty, which bans the acquisition and transfer of nuclear weapons (US Department of State, undated), but about two dozen such countries have research reactors with sufficient highly enriched uranium to build at least one nuclear bomb (Allison, 2004).

Terrorists are also likely to obtain the capacity to go nuclear. The simplest way to do this would be to make a so-called dirty bomb by wrapping radioactive waste in conventional explosives so that detonation spreads radioactivity over a wide area. Radioactive waste is held at commercial nuclear power plants all over the world and is often transported in large quantities over long distances, so it is at least possible that sooner or later one or more terrorist groups will obtain the capacity to produce and use dirty bombs (Blair, 2001, pp. 1–2; Burgess, 2003). As it is relatively easy to fabricate a workable atomic bomb once the ingredients are obtained but relatively difficult to produce plutonium or highly enriched uranium, the main risk of terrorists obtaining and using an actual atomic bomb appears to be their obtaining diverted fissile material or a full-fledged atomic bomb, such as nuclear artillery shells or nuclear landmines, possibly from Russia, as it is not clear that all Russian nuclear weapons are accounted for (Blair, 2001; Newhouse, 2002, pp. 45–7). If just fissile material were obtained, perhaps by diverting civil mixed-oxide (MOX) from the growing trade in nuclear fuel or by obtaining fissile material either from Russia, where there is thought to be at least 1,000 tons of highly enriched uranium and 150 tons of plutonium scattered around, much of it in badly secured storage sites, or from Pakistan, where Islamic radicals have links to the government and military, a crude atomic bomb based on highly enriched uranium could be designed and fabricated by just two or three people with appropriate skills. Such a device could be transported and detonated in a small van (Barnaby, 2003, pp. 36, 68, 111–17; Newhouse, 2002, p. 46, Blair, 2001).

Biological agents can be delivered in aerosol form by ballistic and cruise missiles, battlefield rocket and artillery shells, spray tanks mounted on aircraft, unmanned aerial vehicles, land vehicles and ships, and clandestine portable devices, or dispersed in food or water (Davis and Gray, 2002, pp. 277–8, MOD, 1999, ch. 1, p. 1). They are cheaper to produce than nuclear and chemical material because they reproduce themselves, and production is easy to disguise because production facilities, equipment and staff are very similar to those used to produce antibiotics and vaccines. Terrorists could also acquire them by theft or from a sympathizer working in a production facility. And it is clear that terrorists are interested, as in the past terrorist groups have been found in possession of typhoid bacteria, botulinium toxin, anthrax and – by order from a legitimate supplier – bubonic plague (Barnaby, 2003, pp. 48–53, 119–24).

Chemical agents are less of a threat to populations than biological agents because those who are affected cannot infect others, but they act more quickly because they do not have an incubation period. They can be spread using shells, mines, missiles, bombs or spray. They are also easier to produce than either nuclear or biological weapons (Sidell and Patrick, 1998; MOD, 1999, ch. 1, p. 2; Donovan, 2001, p. 6; Barnaby, 2003, pp. 63, 84, 119).

Over the next few years more and more states will acquire the technical capacity to develop WMDs, especially biological and chemical weapons, which can be produced at low cost compared to nuclear weapons and are difficult to detect and control because their production can be concealed and many of their components and the equipment needed to produce them also have legitimate uses (Davis and Gray, 2002, pp. 278, 281).

It is also clear that terrorist groups are in fact attempting to acquire WMDs. A survey of open-source material identified 23 incidents involving use, possession, attempted acquisition, plots and threats of chemical, biological, radiological or nuclear (CBRN) materials in 2002, excluding hoaxes, compared to 25 in 2001, 49 in 2000 and 27 in 1999. Reported incidents include the putative theft of radiological material by Chechen rebels, a plot by the Real IRA to steal plutonium from the Sellafield nuclear power plant in Britain, an attempted acquisition of chemicals by Hamas for use against Israel, and a plot by Al Qaeda to detonate a dirty bomb in the United States. CBRN agents were actually used on six occasions, compared with 14 in 2001 and 36 in 2000. The only deaths occurred in Zimbabwe, where seven people were killed and 47 injured in a poisoning incident involving a religious sect (Turnbull and Abhayaratne, 2003).

If we accept that more and more states and terrorist groups are likely to acquire WMDs then it follows, other things being equal, that their use against European countries and/or their nationals and interests abroad is likely to increase in frequency and/or severity, although the chances of a really devastating attack with an atomic bomb or biological agent appear to be small. An attack using WMDs would not be expected to come from sovereign states, because this would invite massive retaliation by NATO forces, but from terrorist groups such as religious groups that believe that the end of the world is at hand. It was, after all, the Japanese millenarian cult Aum Shrinrikyo that first used chemical weapons (sarin) in Tokyo in 1995, an attack that killed 12 people and injured about 5,500 (Kiras, 2002, p. 226; Donovan, 2001, pp. 5–6).

To the extent that European policy actors conclude that continuing proliferation of WMDs means that their use against European countries and their interests is likely to become more frequent and/or destructive, their policy preferences will shift in the direction of placing greater stress on the development and implementation of more vigorous measures to protect against such attacks. Ways in which governments can attempt to protect their countries include stepping up diplomatic efforts to counter WMD proliferation; improving security for WMD-related materials, equipment and expertise; improving civil defence; tightening controls designed to prevent illegal trafficking of WMDs; redoubling efforts to promote international and regional stability; and taking offensive action against possible users of WMDs (European Council, 2003; White House, 2002).

As WMD technology has been developing and proliferating for decades, the logic of policy network theory suggests that consequent growing concern about possible attacks should already have led to at least some of these policies being implemented. Although it is relatively easy to find evidence of some moves in each of these categories, however, the nature of the activities involved make it very difficult to locate comparable data for all 12 test countries. Nevertheless there are two relevant propositions that can be tested, as follows.

1. During the years prior to 9/11 there was a strengthening of the network of WMD-related agreements to which the 12 richest EU member states are signatories.

As it is obvious that efforts to control the proliferation of WMDs were strongly stimulated by the attack on New York in September 2001, which is not itself part of the trend constituted by the development of military technology, or indeed of any king trend, the appropriate test period consists of the decades leading up to 2001 but no further. During this period the network of treaties and agreements relating to WMD proliferation was substantially strengthened.

First, the Treaty on the Non-Proliferation of Nuclear Weapons, which all 12 test countries have ratified, came into force in 1970, followed by other agreements such as the London Guidelines of the Nuclear Suppliers Group (1977, with later revisions), the Convention on the Physical Protection of Nuclear Material (1980), the Missile Technology Control Regime (1987), the International Convention on Nuclear Safety (1994), the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies (1995), and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (June 2001) (IAEA, 2005).

Second, the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, or Biological and Toxin Weapons Convention for short, which all 12 test countries have ratified, came into force in 1975 (BTWC, 1975), and its provisions have been strengthened on a number of occasions since then (FAS, 2008).

Third, the Chemical Weapons Convention, to which all 12 test countries are parties, was signed in 1993 and came into force in 1997. This bans the development, production, stockpiling, transfer and use of chemical weapons, along with requiring the destruction of existing stocks (OPCW, 2008).

Finally, in 1985 a number of exporting and transshipping countries established the Australia Group, which aims at harmonizing relevant national licensing measures to ensure that exports of certain chemicals, biological agents and dual-use chemical and biological manufacturing facilities and equipment do not contribute to the proliferation of biological and chemical weapons. All 12 test countries are members (Australia Group, 2008).

These developments indicate that the network of agreements designed to inhibit the proliferation of WMDs was being strengthened even before 9/11 catapulted this issue to the top of the political agenda, and there do not appear to have been any moves in the opposite direction. This hypothesis is therefore *confirmed.*

2. During the years prior to 9/11 there were moves to tighten control of the external border of the EU.

If the illegal trafficking of WMDs into EU countries is to be stopped, or at least minimized, and the entry of those who wish to use these weapons to launch attacks in Europe is to be prevented, improvements need to be made to the capacity of the governments of the 12 test countries to detect and seize any shipments as they attempt to cross their borders, and to identify and arrest or turn away those who are suspected of malicious intent.

However a distinction needs to be made here between borders between EU member states and borders between EU and non-EU countries. The process of European integration has not been identified as a king trend, as there are few indications that it is likely to proceed much further over the next 20 years or so, but it has clearly been a trend in the past that by its nature has involved lowering barriers between EU member states. Among other things this implies weakening control of borders between member states by means such as removing checkpoints, an effect that counteracts any effects on border control of increasing concern about WMDs. For this reason the hypothesis that border controls have been tightened applies only to the external border between the EU and non-EU countries.

Although comparable data on national laws and practices relating to border control does not appear to be readily available for the 12 test countries, information on decisions at European level approved collectively by EU member states indicates that moves to tighten the security of the EU's external borders were being made even before 9/11 led to increased concern about the possibility of attacks within Europe. In 1992 the Maastricht Treaty made customs and police cooperation a formal constituent of the EU Treaties (European Commission, 2008a). In 1995 the Schengen Information System mentioned earlier was established along with a Customs Information System consisting of a central database accessible via terminals in each member state. Among other things the exchange of information among national immigration and customs authorities that this facilitates reduces the likelihood that people and goods refused entry at a part of the external border controlled by one member state will be able to enter the EU through a part of the border controlled by a different member state (JSA, n.d.; European Commission, 2006k). In 1997 member states agreed to establish a Convention on Mutual Assistance and Cooperation between Customs Administrations of Member States aimed, among other things, at preventing, detecting, prosecuting and punishing infringements of EU and national customs provisions concerning weapons, munitions, explosive materials, nuclear material or materials or equipment intended for the manufacture of atomic, biological or chemical weapons. This Convention, which is in the process of ratification, requires national customs authorities not only to provide assistance to each other in the form of information but also permits the customs administrations of other member states to enter their territories for the purposes of hot pursuit of individuals committing infringements, surveillance of individuals and suspicious or illicit consignments of goods, and covert investigations. Member states are also authorized to set up joint special investigation teams where necessary (European Commission, 2008b; Council of the European Union, 1997).

Moves to tighten controls on entry to the EU subsequent to 9/11 include the introduction in 2002 of a Common Manual on rules and procedures to be followed at external borders (Euractive, 2006), the establishment of a common visa system in 2004 (European Commission, 2004c), and the creation in 2005 of an EU External Borders Agency to improve the management of the external borders of the EU by means such as improving coordination between member states, developing a common integrated risk assessment model, preparing specific risk assessments, and helping member states train their national border guards (Europa, 2008). In relation to the movement of goods the main move consists of a security amendment made in 2005 to the Customs Code which introduced new measures to tighten security around goods crossing international borders, namely a requirement for traders to provide authorities with information on goods prior to import or export, and a mechanism for setting uniform risk-selection criteria for controls, supported by computerized systems and new non-intrusive inspection equipment that uses X-ray and gamma ray technologies to provide visual images of containers' contents (European Commission, 2006j, 2008).

It is clear that even evidence pertaining to the period prior to 9/11 does not contradict the hypothesis that increasing concern about WMDs has at least contributed to the strengthening of border controls. For this reason the hypothesis is judged to be *confirmed*.

6.5 Conclusions

In this chapter a number of hypotheses generated by applying policy network theory to three major long-term technological trends have been tested for the 12 richest EU member states.

The first three hypotheses are that *developments in ICT* have led to

- a shift towards policies designed to facilitate the development and use of ICT;
- deliberate moves to increase state use of surveillance; and
- tighter regulation of ICT and increasing international cooperation in this area.

The next hypothesis is that *developments in biotechnology* have led to increased emphasis on facilitating the further development and use of biotechnology.

The final two hypotheses are that *developments in military technology* have led to

- a strengthening of the network of WMD-related agreements to which the test countries are signatories; and
- moves to tighten control of the external border of the EU.

All of these hypotheses were confirmed in the sense of not being disconfirmed.

7
Growing Affluence, the Shift to Services and the Growth of Women's Employment

7.1 Introduction

This chapter reports the results of testing hypotheses based on the policy implications, according to policy network theory, of three obvious and significant economic king trends: the growth and diversification of production and consumption, the shift to services, and the growth of women's employment.

7.2 The growth and diversification of production and consumption

One of the most significant economic trends of our times is the almost uninterrupted growth in the amount and variety of what is produced and consumed.

First, we are getting richer all the time, and this is expected to continue. Real GDP per head more than doubled between 1970 and 2006 in all of the 12 test countries apart from Sweden, where it almost doubled (OECD, 2008, pp. 348–439). As I write this the world is sliding into recession, but recessions come and go. Official forecasts project that between 2005 and 2030 GDP per capita in Europe will grow by over 60 per cent (OECD, 2008a, p. 480). If this occurs in Europe in general, it is highly likely to occur in our 12 test countries in particular as well.

Growth in production is largely the result of growing productivity made possible by improvements in manufacturing technologies. Developments in information and communications technology (ICT) have enabled applications such as computer-aided design, computer-aided manufacturing and computer-aided engineering. Management applications include the use of databases, data-processing, email, teleconferencing, websites, and automation of processes such as human resources, supply-chain and production planning, financial and customer relationship management, along with surveillance of processes, employees and consumers. Among other things the use of ICT makes it easier to alter production process settings to produce customized products at short notice. Computer simulation, rapid prototyping, use of robots, Flexible Manufacturing Systems and Computer-Integrated Manufacturing all facilitate the transition to so-called agile manufacturing. This capacity for flexible specialization means that high productivity can be achieved just as well through a diversified set of low-volume products as via standardized mass production, which enables a profitable focus on segmented as well as mass markets (Compston, 2006, pp. 21–33, Dicken, 2003, pp. 108–109). Applications of biotechnology are changing manufacturing processes through means such as the use of bioreactors to replace existing industrial processes in areas such as chemicals, pharmaceuticals, paper, textiles and leather, while genetically modified plants and animals are increasingly being used to produce pharmaceuticals, plastics, industrial lubricants, cosmetics and biodegradable detergents. Significant and economically relevant advances are also being made in areas such as nanotechnology and materials technology. Meanwhile old technologies, such as 'old' computer chips, are continuing their 'sidewise' movement into new markets and applications (Compston, 2006, pp. 46–9, 101–4).

One important result of lower costs of production due to technological progress is lower prices for consumers and/or higher profits for employers, and workers can get a share of the profits by securing higher wages. This is in fact what has been happening: real incomes are rising and have been rising for a very long time. By 'real incomes' is meant incomes adjusted for price inflation, so these increases represent real increases in purchasing power. The most consistent and internationally comparable measure of this is wages in manufacturing. Between 1970 and 2000 real hourly earnings in manufacturing grew significantly in all six of the test countries for which statistics are available: Austria (2.4 per cent per year), Belgium (1.9 per cent), France (2.1 per cent), Germany (1.8 per cent), Italy (2.2 per cent) and the Netherlands (1.0 per cent). Statistics are not available for all of this period in Britain, but real hourly earnings grew by 3.4 per cent per year between 1970 and 1973, 2.6 per cent per year between 1979 and 1989, and 1.7 per cent per year between 1989 and 2000 (OECD, 2001d, p. 86). More recent figures for periods varying up to 2004 or 2005, depending on the country, indicate that real manufacturing wages have continued to rise steadily in all countries apart from Italy, where the pattern is unclear (ILO, 2008). This rise in incomes has been occurring right across the income distribution: in most European countries the structure of income inequality remained much the same as average incomes rose, so that poor as well as rich were carried upwards even though inequality did rise in a few countries, notably Britain (LIS, 2003; Förster with Pellizzari, 2000; Förster and Pearson, 2002; Eurostat, 2003).

Rising incomes, of course, imply rising consumption, so it is not surprising that actual individual consumption per head more than doubled in real terms between 1970 and 2006 in 9 of the 12 test countries and almost doubled in Denmark, the Netherlands and Sweden (OECD, 2008, pp. 348–49).

As economic growth is expected to continue, it is reasonable to expect that both incomes and consumption will also continue to rise.

According to policy network theory, the growth and diversification of production and consumption, or rising affluence for short, has two main testable implications for the future of public policy: more vigorous steps to expand and improve education and training, and less union-friendly policies. It should also be noted that rising affluence has indirect implications for public policy via other king trends through its role in increasing energy consumption, mobility and climate change. Although the hypothesis that developments in production technology have led to a shift towards policies designed to facilitate the development and use by business of new technologies was also tested, and confirmed (see the second chapters of OECD, 2000a, 2002e, 2004e, 2006f, 2008e), this had to be dropped from the analysis when it became clear that changes in production technology imply maintenance of such policies rather than their intensification.

1. More vigorous steps to expand and improve education and training

As production-related technology changes more frequently and becomes more sophisticated, the provision of advanced and appropriate education and training for workers (and managers) becomes more important for manufacturers and other producers. Since companies are reluctant to invest much in education and training themselves, among other things because competitors might poach employees they have spent time and money training, the increasing importance of having a sophisticated workforce would be expected to lead them to try to increase pressure on governments to improve education systems through means such as increasing participation in education, making education more technologically and vocationally relevant, and improving opportunities for employees to go back for more training as technology changes: so-called life-long learning.

Given the increasing importance of education and training for economic growth, policy network theory suggests that governments will respond to these appeals by making more vigorous efforts to improve education and training. Because educational qualifications indicate the extent to which the (postulated) objectives of public policy are being achieved rather than state effort in education, since education is not only supplied by the public sector but also, to varying degrees in different countries, by the private sector, and there is no readily available data that measures changes in educational qualifications over time due to state action as distinct from private action, the best available indicator of state effort in this area is public spending on education: if governments are serious about improving education, we would expect this to be reflected in increases in resources devoted to education. As production technology has been increasing in sophistication for many years, if this effect is real we would expect education spending to be on the rise already. The hypothesis to be tested, therefore, is that *in recent years education spending has increased in the 12 test countries.*

The available evidence indicates that this is indeed the case. Public expenditure on educational institutions increased in real terms between 1995 and 2004 in all 11 of the test countries for which data is available (OECD, 2007a, Table B3.1, column 11). Furthermore, over the same period public spending on education increased as a percentage of total public spending in 10 of these 11 countries while remaining unchanged in Austria (OECD, 2007a, Table B4.1, columns 3 and 4).

It is clear that governments in almost all test countries are increasing the resources that they devote to education. This hypothesis is therefore *confirmed.*

2. Less union-friendly policies

Improvements in manufacturing technologies weaken manufacturing unions in at least two ways. First, the contraction of manufacturing employment caused by automation erodes the membership base of such unions. Second, flexible specialization and the consequent diversification of work, plus the associated increase in employer pressure for employee flexibility, make it more difficult for unions to organize the manufacturing workers who remain. Third, increasing affluence means that workers have less economic need for unions, and their increasingly diverse lifestyles make it less likely that they will identify themselves primarily as working-class or as a 'union man' (or woman), thus weakening class and union solidarity (Lash and Urry, 1987, p. 228).

What this implies is that over time direct action taken by unions in support of their objectives is likely to be supported by a diminishing proportion of workers. This weakens one of the principal tradable resources of trade unions in the sense that it is becoming easier for public actors to maintain industrial peace whether they accede to union demands or not. Since manufacturing unions have generally been at the heart of national labour movements, this implies a reduction in the political leverage of labour movements in general in the making of public policy (Kumar, 2005, 72), and therefore a trend away from union-preferred policies.

Since production and consumption have been rising and diversifying for many years, if this effect is real it should already be in evidence. To determine whether this is the case, three specific hypotheses are tested.

2.1 Independence for central banks

One way in which public authorities can try to restrain wage rises is to raise interest rates in order to reduce the capacity of employers to grant big wage rises, but elected governments that raise interest rates risk a loss of electoral support because higher interest rates reduce spending power in the economy and may lead to rising unemployment. If governments delegate decisions about interest rates to a central bank and make it legally independent, however, so that elected officials cannot interfere with its decisions or dismiss those who make them, blame for raising interest rates can be deflected onto officials whose positions cannot be threatened either by the electorate directly or by the elected government. The logic of policy network theory suggests that for this reason interest rates controlled by independent central banks are more likely to be raised in response to wage rises that are considered to be excessive than are interest rates controlled by elected governments, other things being equal, which means greater downward pressure on wages than would otherwise be the case. This downward pressure is strengthened to the extent that trade unions believe that central banks will definitely raise interest rates in response to big wage rises, a position that is much harder for elected governments to sustain due to their vulnerability to electoral pressures.

In short, granting independence to central banks implies increased downward pressure on wages, other things being equal, and therefore represents a move away from union-friendly policies. As we have seen that growing affluence implies erosion of the resources of trade unions, it follows that their capacity to resist moves to grant independence to central banks is likely to be diminishing. For this reason we would expect a trend towards granting independence to central banks. As the 12 test countries have been growing richer for a very long time, if such an effect exists we would expect this trend already to be in operation. The hypothesis to be tested, therefore, is that *in recent years there has been a trend in the 12 test countries towards granting independence to central banks*.

And this is exactly what we see: 9 of the 12 test countries participated in the third stage of Economic and Monetary Union (EMU) in 1999, which among other things involved the creation of an independent European Central Bank, while the central banks of both Denmark and Sweden have long been independent and the Bank of England was made independent in 1997 (Scheller, 2006, p. 25, Danmarks Nationalbank, 2008; Riksbank, 2008). This hypothesis is therefore *confirmed*.

2.2 Reductions in minimum wages

One of the factors that determine economic competitiveness is the level of labour costs: the higher they are, the higher a firm's prices need to be if it is to make a profit. For this reason employers are always interested in restraining wages. In general wage-setting in the private sector is determined by employers, in many cases by negotiation with their employees or relevant trade unions, but there is one type of wage that is controlled by the government instead and which moreover sets a floor to all other wages: statutory minimum wages. Given employer concern about wage costs, we would expect them to press governments to reduce, or at least not raise, relevant minimum wages. If trade unions are being weakened by the growth and diversification of production and consumption, the logic of policy network theory implies that over time governments will in fact reduce minimum wages in real terms, other things being equal, due to the diminishing capacity of trade unions to resist policies to which they are opposed. As the 12 test countries have been growing richer for a very long time, if this effect is real, we would expect that minimum wages will already be falling. The hypothesis to be tested, therefore, is that *in recent years there have been reductions in the real value of minimum wages in the 12 test countries*.

Data on minimum wage levels is available for most of the period since 1990 for all 6 of the 12 test countries that currently have a statutory minimum wage – Belgium, Britain, France, Ireland, the Netherlands and Spain – but no trend towards reducing minimum wages is discernible.

Despite a longer-term trend for minimum wages in general to lag behind median wages, between 1994 and 2004 they fell compared with the median wage in Belgium and Spain but rose relative to the median wage in France. Information was not available for the Netherlands. Meanwhile minimum wages were established for the first time in Britain in 1999 and in Ireland in 2000 (OECD, 2006a, pp. 82–3). Between 1995 and 2004, or the parts thereof for which comparable data exists, the minimum wage rose in absolute terms in all six countries. As a percentage of the average gross wage, it fell in just three of the six countries (European Foundation, 2007). Eurostat data indicates that between 1999 and 2007 the minimum wage rose in absolute terms in all five countries, and that between 2002 and 2006 (2005 for the Netherlands) it fell as a percentage of average monthly earnings in industry and services in just one of the four countries for which data is available, namely the Netherlands (Eurostat, 2008d, 2008e).

The hypothesis that growing affluence causes reductions in minimum wages is therefore *disconfirmed*.

In these circumstances the methodology set out in Chapter 5 stipulates that both the hypothesis derivation and the test procedure must be checked for errors before the judgement that the hypothesis is disconfirmed is definitively accepted, as it would be unfortunate if policy network theory were judged to be disconfirmed on the basis of a hypothesis that was incorrectly derived or a test procedure that was flawed.

Carrying out this check revealed that an error had in fact been made in the derivation of the hypothesis, namely a failure to recognize that one of the policy implications of another king trend, population ageing, is that minimum wages should be raised rather than lowered. The policy implications of population ageing are considered in detail in Chapter 10 but, in brief, one of the consequences of population ageing is a reduction in the size of the labour force relative to the total population, which means a reduction in economic growth per capita unless the percentage of the working-age population that is in employment is raised. One way of raising this employment ratio is thought to be via strengthening the work incentives of the unemployed by making work pay better relative to not working. This implies not only reducing the level of unemployment benefits but also raising the level of the lowest wages that those in employment receive, which means raising the minimum wage.

As evidence that the governments of the 12 test countries do think this way it is possible to cite the EU Employment Guidelines agreed by at least a qualified majority of all member states (Consolidated Treaty, 2008, Article 128). None of the various versions of these guidelines mention cutting low wages in general or minimum wages in particular. While neither the original 1998 guidelines nor the 2000 guidelines mention making work pay either (Council of the European Union, 1997a, 2000), the Employment Guidelines approved in 2003 state that member states should 'make work pay through incentives to enhance work attractiveness' and even stipulate that 'Member States should develop appropriate policies with a view to reducing the number of working poor' (Council of the European Union, 2003a). This orientation is picked up in Guideline 19 for 2005–08 (Council of the European Union, 2005). A communication from the European Commission is explicit in relation to the minimum wage in particular:

> If set sufficiently above the level of unemployment and other related benefits the minimum wage may increase the attractiveness of low-paid jobs and hence contribute to make work pay. (European Commission, 2003, pp. 9–10).

Similarly, the Joint Employment Report 2006/2007 adopted by Council included increases in minimum wages as one measure utilized by member states to make work more attractive (Council of the European Union, 2007).

The other factor that the original derivation of this proposition should have taken into account is the fact that from the employer's point of view it is not the minimum wage as such that matters but the total cost of employing someone on the minimum wage, which includes non-wage labour costs such as employer social security contributions as well as the minimum wage itself. What this means is that governments can cut the cost to employers of employing people on the minimum wage, while not weakening work incentives, if they reduce these non-wage labour costs rather than the minimum wage itself. Accordingly it is not surprising that we find that Guideline 2 of both the original 1998 EU Employment Guidelines and the 2000 Guidelines state that member states should sets targets 'for gradually reducing the fiscal pressure on labour and non-wage labour costs, in particular on relatively unskilled and low-paid labour' (Council of the European Union, 1997, 2000), a recommendation that is repeated in later versions (Council of the European Union, 2003a, 2005).

In summary, according to policy network theory the net policy implication of king trends in relation to minimum wage levels is indeterminate because growing pressure to reduce them, due to the growth and diversification of production and consumption, is counteracted by growing pressures to raise them, due to increasing concern to maximize employment levels in order to offset the effects of population ageing. This means that the hypothesis that minimum wages have been falling should never have been formulated, let alone tested. Its disconfirmation is therefore of no consequence.

Why, then, has this test been reported at all? One of the temptations faced by analysts who carry out these sorts of wide-ranging tests is to leave out mention of results that do not fit their hypotheses. In order to guard against this, I report the results of *all* completed tests, including those of hypotheses that later turn out to be flawed.

2.3 Reforms to employment regulation designed to increase labour flexibility

Another of the factors that contributes to business success is the efficiency and effectiveness with which employees are organized and deployed. While this is in part controlled by employers, their freedom of action in this respect is limited by the provisions of employment regulation designed to protect employees from unscrupulous bosses. Relevant regulation here includes employment protection legislation (EPL), legislation relating to working conditions and working hours, and legislation relating to the reconciliation of work and family life. For this reason employers would be expected to press governments to reform legislation in this area in such a way as to ease the constraints that it imposes on them. If the capacity of trade unions to take direct action is diminishing, as argued earlier, policy network theory implies that this will reduce the political cost to governments of acceding to employer demands in this area and thereby lead to a trend towards weakening of employment regulation, other things being equal.

In the case of some types of employment regulation, of course, other things are *not* equal because, according to policy network theory, other king trends imply that there will be a trend towards *strengthening* these types of regulation. Regulation designed to facilitate reconciliation of work and family life, as we shall see, is subject to cross-pressures from the increasing pressure on governments to expand employment and make it more women-friendly due to the effects on employment of population ageing. These forms of employment regulation are therefore not hypothesized to strengthen or weaken.

However this is not true of employment protection legislation, which is therefore expected to weaken as time goes on. If rising affluence is weakening trade unions, this effect should already be discernible. The hypothesis to be tested is therefore that *in recent years there has been a trend in the 12 test countries towards a weakening of employment protection regulation.*

Testing this hypothesis is facilitated by the existence of an OECD study that specifically investigates the direction of recent changes to employment regulation. The results of this, which are summarized in Table 7.1, reveal

Table 7.1 Employment protection legislation (EPL), 12 test countries, mid-1980s to 2004

Type of employment protection legislation	Countries in which weakened	Countries in which strengthened	Overall weakening?
Regular employment	***3***	***3***	***No***
Regular procedural inconveniences	*3*	*0*	*Yes*
Procedures	2	0	Yes
Delay to start of notice	3	0	Yes
Overall strictness of protection against dismissal	*3*	*3*	*No*
Definition of unfair dismissal	0	1	No
Trial period before eligibility arises	1	1	No
Unfair dismissal compensation at 20 years tenure	2	3	No
Extent of reinstatement	0	0	No
Difficulty of dismissal	2	3	No
Notice and severance pay for no-fault individual dismissals	*4*	*4*	*No*
Temporary employment	***7***	***3***	***Yes***
Fixed-term contracts	*5*	*4*	*No*
Valid cases other than the usual objective reasons	4	2	Yes, just
Maximum number of successive contracts	4	3	No
Maximum cumulated duration	3	3	No
Temporary work agencies (TWAs)	*7*	*1*	*Yes*
Types of work for which TWA employment is legal	6	1	Yes
Restrictions on number of renewals	1	0	No
Maximum cumulated duration of temporary work contracts	7	1	Yes
Collective dismissal (late 1990s to 2003)	***0***	***1***	***No***
Overall strictness of EPL, excluding collective dismissals	**9**	**3**	**YES**

Overall weakening of each type of EPL is judged according to the difference between the number of countries in which it has weakened and strengthened.
Source: OECD Employment Outlook 2004 (2004a), Tables 2.A2.1–2.A2.4, pp. 110–17.

that between the late 1980s and the late 1990s employment protection legislation as measured was liberalized in nine of the test countries and tightened in just three: Britain, France and Ireland (OECD, 2004a, p. 117). This weakening was especially pronounced in relation to the legalizing of temporary work agencies and liberalization of their regulation. There is also some indication of weakening of legislation pertaining to notice and severance pay for no-fault individual dismissals and for fixed-term employees, although the evidence is weak on this point, but no indication of liberalizing (or strengthening) of legislation relating to difficulty of dismissal of individual regular employees or collective dismissals (OECD, 2004a, pp. 110–17). This pattern suggests that employers are not so much concerned to weaken employment protection for all employees as to ensure that there is at least a certain proportion that can easily be offloaded if necessary, and that pressure to weaken employment protection tends to be directed at those aspects on which trade union resistance is weakest.

The evidence, then, is clear: there has indeed been a trend towards weakening of employment protection legislation. This hypothesis is therefore *confirmed*.

There was one further hypothesis that I tried to test, but without success, namely the idea that the hypothesized trend away from union-friendly policies involves the introduction of explicitly anti-union legislation in the 12 test countries. The situation is that although the available evidence threatens to disconfirm this hypothesis, this consists of just two pieces of information, both of which relate to collective bargaining in particular, namely that the Charter of Fundamental Rights of the European Union adopted in 2000 included the right to collective bargaining, and that the only major change since 1990 in the legal framework for collective bargaining occurred in Italy as a result of a tripartite agreement in 1993 (European Foundation, 2005). Comparable evidence was not available on other relevant issues such as rights to take industrial action, internal structure of trade unions, or political funding. What this means is that although it looks like the hypothesis has been disconfirmed, as no anti-union laws have been identified, this may be due to failure to locate relevant data rather than the non-existence of such laws. For this reason it would not be appropriate to count it as a definite disconfirmed hypothesis.

7.3 The shift to services

For decades now employment in EU countries has been falling in agriculture and industry (mining and quarrying, manufacturing, utilities and construction) and rising in services, especially professional and business services, and health and social work. In 1980 employment in agriculture exceeded 10 per cent of civilian employment in 5 of the 12 test countries, the numbers employed in industry ranged between 30 and 43 per cent of civilian employment, and the numbers employed in services ranged from 46 to 64 per cent, but by 2003 employment in agriculture did not exceed 7 per cent of civilian employment in any of the 12 test countries, employment in industry ranged between 23 and 32 per cent and employment in services ranged between 63 and 77 per cent of civilian employment (OECD, 2004d, pp. 32–5).

Service sector workers are defined by the OECD as individuals working for pay in a local establishment whose major activity is the provision of services rather than goods (OECD, 2000, p. 81). The many different types of services can be grouped into four subsectors. Producer services (business and professional services, financial services, insurance and real estate) provide intermediate inputs to further production activities. Distributive services (retail trade, wholesale trade, transportation and communications) move commodities, information and people. Personal services (hotels and restaurants, recreational and cultural services, domestic services and other personal services) are provided directly to households. Social services (government proper, health, education and miscellaneous social services) are provided mainly by the state directly to households (Elfring, 1988; OECD, 2000, pp. 82–3, 117).

It seems likely that this long-established shift to services will continue because (1) the greater scope for technologically driven productivity improvements in the goods-producing sector makes it possible to increase goods production while cutting jobs whereas in services more production generally requires more employees, and (2) demand for services is increasing as consumer incomes rise (OECD, 2000, pp. 97–105).

The shift to services has a number of implications for public policy, although not all of these could be tested (see Appendix 1). Two propositions that can be tested, however, are that the shift to services will lead governments to take steps to open up international markets for services, and to move away from policies favoured by the industrial working class and trade unions.

1. More vigorous measures to open up international markets for services

The increasing economic importance of services means that the economic dividends of helping services firms are growing. One way in which governments can assist the services sector is to open up new international markets for services. In the EU context this means removing barriers to cross-border provision of services between member states, and removing barriers in non-EU countries to the provision of services by EU-based firms.

Services can be provided across borders in four main ways. Services such as consumer advice from call centres can be supplied from the territory of one country to the territory of another (cross-border supply). Consumers and firms can make use of services when temporarily in another country, such as services for tourists (consumption abroad). Firms based in one country, such as banks, may set up subsidiaries or branches in another country to provide services in that country (commercial presence). And individuals such as consultants or construction workers may temporarily travel from their own country to another country in order to provide services there (presence of natural persons) (WTO, 2004a, p. 2).

The logic of policy network theory suggests that the increasing economic importance of services strengthens the economic and electoral incentives for governments to increase efforts to expand international markets for EU services firms by removing barriers to cross-border supply of services. As the services sector has been growing for decades, if this effect exists it should already be evident. The hypothesis to be tested, therefore, is that *in recent years the governments of the 12 test countries have taken steps to open up new international markets for services.*

The available evidence suggests that this has in fact occurred.

Within the EU there has been a concerted effort by member states collectively to remove barriers to cross-border provision of services in the context of the programme launched by the 1986 Single European Act (SEA) to establish a Single Market by 1993, this being defined by Article 8A of the SEA as 'an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured' (European Commission, 2007a). The principle of freedom of establishment, which was subsequently incorporated into the Treaty as Article 43, establishes the right of a person or company to carry on an economic activity in one or more member states, while the freedom to provide cross-border services, incorporated as Article 49, establishes the right of a person or firm to offer services on a temporary basis in another member state without having to be established. Member states are obliged to modify any national laws that restrict these two freedoms either explicitly or by implication (European Commission, 2008c). Subsequent EU-level legislation has removed further barriers in specific areas such as financial services, telecommunications, broadcasting and recognition of professional qualifications, and in 2006 a Services Directive was introduced to try to break down the remaining legal, administrative, and practical obstacles to establishing a business in any member state by means such as simplifying administrative procedures and outlawing restrictions on establishment such as nationality requirements. Although this Directive does not apply to areas such as financial services, electronic communications services, transport, health care, audiovisual services and social services, for the services it does cover it stipulates, among other things, that procedures and formalities relating to access to a service activity and its exercise must be simple, clear and possible to complete through single points of contact. Authorization schemes must be non-discriminatory, justified by the public interest, exercised in a swift and non-arbitrary manner, and not duplicate equivalent requirements to which the provider is already subject in another member state. Member states may not make access to, or the exercise of, a service activity subject to discriminatory requirements based directly or indirectly on nationality, the location of the provider's registered office, conditions of reciprocity with the member state in which the provider already has an establishment, proof of the existence of an economic need or demand, decision processes in which competing operators are involved, or the obligation to provide a financial guarantee (European Commission, 2008d; European Commission, 2006a, Directive 2006/123/EC).

It is also clear that the EU has been pressing hard for markets in non-EU countries to be opened to EU firms that provide services.

First, the EU was a leading player in the WTO negotiations that led up to the 1995 General Agreement on Trade in Services (GATS), which established multilateral rules for international trade in all services sectors apart from public services provided on a non-commercial and non-competitive basis, such as social security schemes, and measures affecting air traffic rights and services directly related to the exercise of such rights. Among other things signatories are obliged to implement the principle of most-favoured-nation treatment for the services that are covered, which means treating all their trading partners equally. The GATS also includes specific negotiated commitments by individual WTO members that specify service sectors in which they undertake to remove discriminatory measures that benefit domestic services or service suppliers at the expense of foreign firms (national treatment), as well as commitments to provide certain defined levels of market access to specified sectors. GATS also provides for the progressive further opening of markets on a negotiated basis (WTO, 2004a, 2008). In 1997, for example, a 'major negotiating objective' of the EU was achieved when the financial services sector was added to those covered by the GATS, as this obliged many countries to permit foreign financial institutions to establish a new commercial presence in their country, expand current operations and maintain existing shareholdings in these operations (European Commission, 2004f).

Second, the EU has pressed hard for markets in other countries to be opened further to EU services firms in the Doha round of negotiations that started in 2001, arguing that the EU has a 'paramount interest' in the further liberalization of services trade because removing barriers that either restrict access by foreign firms or discriminate against them once they are in the market would provide more opportunities for European services firms to grow and thereby contribute more to growth and employment within the EU. The 'requests' made by the EU in 2005 in the course of these negotiations for improved market access for services in non-EU countries, for example, cover professional services, other business services, telecommunications, postal and courier services, distribution, construction and related engineering services, financial services, environmental services, tourism, news agency services, and transport and energy services (European Commission, 2005d). Similar demands have been made in other trade negotiations, such as those with other countries in the Mediterranean region (European Commission, 2005e).

It is clear that EU countries collectively, including the 12 test countries, have indeed been taking determined action to open up international markets for services both inside and outside the EU. As there is no indication of any developments that point in the opposite direction, this hypothesis is therefore *confirmed*.

2. A trend away from policies favoured by the industrial working class and trade unions

One effect of the shift in employment from production to services is a reduction in the number of blue-collar voters and an increase in the number of white-collar voters. This is likely to affect election results insofar as the political attitudes of blue-collar and white-collar workers are different, for example by reducing the core vote for explicitly labour-based parties. Among other things this implies that the electoral rewards for introducing policies that favour the industrial working class are shrinking, as are the electoral penalties for policies to which blue-collar workers are opposed. The logic of policy network theory suggests that this will lead to a trend away from policies that favour working class voters, other things being equal.

In addition, it is generally acknowledged that industrial workers are more likely than service workers to join trade unions. This is certainly true for the seven test countries for which comparable relevant data is available for the period from the beginning of the 1960s to the middle of the 1990s – Austria, Belgium, Denmark, Germany, Italy, the Netherlands and Sweden – as measures of union density by economic sector for these countries show that during this period union density in industry was consistently higher than in services, apart from the transport subsector of services (Ebbinghaus and Visser, 2000, pp. 64–5). It follows from this that the shift in employment from the more unionized industrial sector to the less unionized services sector implies a loss of members for national trade union movements as a whole. To the extent that this results in a diminishing capacity on the part of trade unions to take effective direct action, this implies a reduction in the benefits for governments of implementing union-friendly policies, as well as a reduction in the costs of not doing so. The logic of policy network theory suggests that in these circumstances there will be a shift towards less union-friendly public policies.

As these two policy implications are effectively two sides of the same coin, as they both relate ultimately to the policy preferences of the shrinking industrial working class, they can both be tested using hypotheses based on the idea that public policy is becoming less union-friendly. As you will have noticed, two hypotheses associated with this proposition have already been successfully tested in relation to the growth and diversification of production and consumption, namely that there has been (1) a trend towards granting independence to central banks, and (2) a trend towards weakening employment protection legislation. Both of these hypotheses were *confirmed*.

7.4 The growth of women's employment

Ever since the 1960s, women have been entering the paid workforce in increasing numbers. Between 1970 and 2006 the female labour force participation rate in the 15 countries of the EU as it was prior to the 2004 enlargement (EU-15) grew from 41.4 per cent to 64.8 per cent. Female labour force participation rose steadily for all 12 test countries over the varying periods for which data was available except for Denmark, Finland and Sweden, where growth leveled out once the female labour force participation rate exceeded about 70 per cent (OECD, 2008b).

Will this trend towards higher employment rates for women continue? One reason to think that it will is that women are disproportionately employed in the growing services sector whereas men are disproportionately employed in the shrinking goods-producing sector (OECD, 2000, p. 109). Reasons cited by the OECD for the growth of women's employment include women becoming more highly educated, the outsourcing of traditional female household activities to the labour market, the diversification of employment and working-time arrangements in areas such as part-time work, the increased importance of women's earnings in household income, women's increasing aspirations for independence and fulfillment, and the interest of governments in raising female employment for economic reasons (OECD, 2002c, pp. 63, 66). Most if not all of these factors remain operative.

But how much further can the level of women's employment rise? In fact we find that female labour force participation appears to level out once it gets much beyond 70 per cent. If we conservatively take 80 per cent of the workforce as the upper limit for the proportion of women who are in the labour force, this implies continued growth in women's labour force participation in most EU countries up to around 2010 but in fewer countries thereafter as more approach the 80 per cent figure (OECD, 2008b).

Although the growth of women's employment does seems likely to level off over the next 20 years or so, its implications for public policy will take time to percolate through the system. In part it affects public policy through contributing to the growth and diversification of production and consumption, while the increasing economic independence of women brought about by paid work contributes to the trend towards smaller households, another king trend, because it enables more women to leave loveless or abusive relationships to form single-person and single-parent households.

Over and above these indirect effects, the growth of women's employment has two main implications for public policy: more women-friendly employment policies, and more women-friendly policies in general.

1. More women-friendly employment policies

The increase in women's employment implies that over time more and more women will be affected by work-related problems, including problems that affect women more than men such as sexual discrimination in relation to pay and other matters, sexual harassment and violence, lack of quality affordable childcare or other family benefits and services, and lack of permanent well-paid part-time work with opportunities for advancement. It follows from this that demands for public policy measures to address these problems will be shared by more and more people (women) as time goes on.

These demands can be expressed via women's organizations, trade unions and voting as well as by women in positions of influence in government and elsewhere. Women's organizations are already active in this area, and government awareness of the increasing numbers of women affected by work-related problems should add credibility to the arguments of these organizations concerning the electoral benefits for governments of taking action.

To the extent that women join trade unions, women's issues would be expected to become more prominent among union demands and to be pursued more vigorously than previously. This effect should be strengthened to the extent that women themselves come to hold official positions in unions. Other things being equal this increases the likelihood that government responses to union demands will include measures to address the distinctive work-related demands of women. Between 1950 and 1997 women increased as a proportion of the membership of the major union confederations in all eight of the 12 test countries for which data is available (Ebbinghaus and Visser, 2000, pp. 66–7). More recent figures for the 11 countries for which data is available for at least some union centres (Italy is the exception) indicate an upwards trend during the 1990s, so that by 2003 female union membership for these 11 countries ranged from a low of 28.9 per cent of all union members in the Netherlands to a high of 53.5 per cent in Finland (EIRO, 2004). Women are also making at least some progress inside trade unions, with many unions setting up sectional forms of representation for women, while issues of particular interest to women are increasingly reaching union bargaining agendas in countries such as Britain as unions try to attract new members and the number of women trade unionists and trade union officers increases (Dølvik and Waddington, 2002, p. 367, Heery, Kelly and Waddington, 2003, pp. 84, 92, Healy and Kirton, 2000, p. 349).

A similar pattern applies to the electoral arena: more women working implies greater electoral support for women's work-related demands, which increases the electoral incentives for political parties to promise action in this area when competing for government and to implement appropriate policy measures when in government. This effect is likely to be strengthened to the extent that women themselves gain more senior positions in political parties and in the public sector.

The logic of policy network theory suggests that the net result of all this is that the growth of women's employment will lead to the progressive implementation of measures such as improved equal pay and equal treatment legislation, better legal protection against sexual discrimination and harassment, an expansion of affordable childcare, improved maternity and parental leave, improved rights for part-time workers (women are overrepresented in part-time work), improved provisions for flexible working hours, improved occupational health and safety regulation, and more equal treatment in social security schemes.

Although lack of adequate data means that not all of these propositions could be tested, it is possible to test the idea that employment regulation is becoming more women-friendly. The hypothesis to be tested, therefore, is that *in recent years there has been a trend in the 12 test countries towards more women-friendly employment regulation*.

A study of changes over the last few years in national and EU-level employment regulation relating to the reconciliation of work and family life revealed that many of these obviously benefit women. Since 1990 the 12 countries have become subject to EU Directives formulated by the EU-level organizations representing employers and employees (UNICE, CEEP and the ETUC) and formalized by Council, which of course includes representatives of the governments of all EU member states, that established minimum standards in areas including part-time work (1997), fixed-term work (1999) and parental leave (1996). These followed on from a Directive passed in 1992 to regulate the safety and health at work of pregnant workers (European Foundation, 2006, pp. 3–6). In addition to transposing these Directives into national law, since 1990 governments have introduced measures at national level designed at least in part to facilitate the reconciliation of work and family life in 10 of the 12 test countries, although admittedly in some countries these measures were rather minor. Measures introduced in at least one of these countries include establishing, extending or improving benefits for different forms of leave (maternity leave, paternity leave, career breaks, educational leave, bereavement leave), reducing working hours (Austria, Belgium, France), strengthening regulation of working time arrangements (flexitime, compressed working week, annualized hours schemes), strengthening regulation of flexible and atypical forms of employment (job sharing, homeworking, teleworking, term-time working, temporary working and temporary agency working) and expanding childcare support (European Foundation, 2006, pp. 8–64).

The hypothesis that in recent years there has been a trend in the 12 test countries towards more women-friendly employment regulation is therefore *confirmed*.

A second look, however, reveals that this hypothesis should not have been formulated or tested at all because other king trends imply weakening of employment regulation relating to women. We have already seen that one of the policy implications of both the growth and diversification of production and consumption and the shift to services is less union-friendly policies. Among other things this implies that employment regulation will be progressively weakened, including employment regulation relating to women. As we shall see in Chapter 9, the increasing economic importance of trade, and the increasing economic vulnerability that accompanies it, strengthens the economic and electoral incentives for national governments to help exporters and import-competing firms by means including weakening of employment regulation. The increasing economic importance of transnational companies (TNCs), and the increasing ease with which these companies can shift investment between countries, also strengthens the incentives for national governments to weaken employment regulation. For similar reasons weakening of employment regulation is also implied by the internationalization of finance. Finally, as we shall see in Chapter 11, a trend towards weaker employment regulation is implied by the weakening in union membership and solidarity that we would expect as a consequence of increasing independence of mind among employees caused by the expansion of education.

On the other hand, the expansion of education, another king trend, also implies more women-friendly employment policies because the level of education of women, and therefore presumably their cognitive skills and thus their capacity to affect public policy, is rising more quickly than for men. Perhaps more significantly, as we shall also see in Chapter 11, efforts by governments to counteract the tendency of population ageing to reduce the size of the labour force relative to the total population are likely to include efforts to increase the proportion of women in the paid workforce, which again implies more rather than less women-friendly employment policies.

But are these effects strong enough to outweigh the hypothesized effects of the growth and diversification of production and consumption, the shift to services, the expansion of trade, the internationalization of production, the internationalization of finance and the expansion of education?

Consider the following. First, the increasing stress placed by trade unions on women's issues that is implied by the growth in women's employment must at least partly counterbalance the effects of the weakening in union membership and solidarity implied by other king trends. Second, while business might be prepared to accept more women-friendly employment policies in return for more business-friendly policies in other areas, such as cuts in corporate tax, for working women there can be no substitute for making employment regulation more women-friendly. Third, the economic argument that more women-friendly employment regulation is needed in order to help maximize the size of the labour force directly contradicts the argument that economic progress requires a weakening in employment legislation, including employment regulation relating to women. It can also be argued that business as a whole benefits from expanding the labour force by making it easier for women to combine work and family obligations.

What this suggests is that governments could try to pursue more business-friendly and more women-friendly policies at the same time by strengthening employment regulation as it relates to women while compensating business for this by making public policy more business-friendly in other respects than would otherwise be the case.

The problem is that it is impossible to tell how likely this scenario is. Even though the results of testing the hypothesis that there has been a trend towards more women-friendly employment regulation are reported on the basis that the results of all completed tests are reported, therefore, the logic of policy network theory obliges us to drop this hypothesis, even though it was confirmed, on the grounds that the pressure exerted on governments by some king trends for more women-friendly employment regulation is counterbalanced by pressure exerted by other king trends to weaken employment regulation in general.

2. More women-friendly policies in general

Along with the growth of women's employment has come increasing numbers of women in positions of influence, although parity with men has not (yet) been reached. A study of ten West European countries found that between 1945 and 1999 the average proportion of women MPs in national parliaments increased from 5.8 to 25.7 per cent, with substantial increases in every country. By August 2007 the proportion of parliamentary seats occupied by women exceeded 40 per cent in Finland and Sweden; ranged between 30 and 40 per cent in Austria, Belgium, Denmark, Germany, the Netherlands and Spain; and then, a long way back, languished at less than 20 per cent in Britain, France, Ireland and Italy. At the end of 2006 the proportion of cabinet posts occupied by women exceeded 40 per cent in Austria, Germany, Spain and Sweden, was in the 30–40 per cent range in Britain, Denmark and Finland, between 20 and 30 per cent in Belgium, Ireland, Italy and the Netherlands, and less than 20 per cent only in France (16 per cent) (Henig and Henig, 2001, pp. 53, 105, European Commission, 2007b, p. 138, Bale and Van Biezen, 2007, p. 857).

While we cannot assume that women in positions of power will necessarily pursue distinctively women-oriented goals, there is evidence that at least in Britain and Sweden the attitudes of women and men politicians do differ on values directly related to women's interests such as gender equality, affirmative action, equal opportunities policy, family policy, and men's and women's roles in the workforce (Lovenduski and Norris, 2003; Wängnerud, 2000). Although holding a certain attitude does not necessarily mean that a person will act on it, where that attitude is widespread one would expect at least some of those who share it to act accordingly. To the extent that women in positions of influence in areas such as business and the civil service also hold distinctive attitudes towards issues related to women's interests, therefore, we would expect the increasing numbers of women in influential positions to exert increasing pressure on governments to implement policies to improve women's rights and reduce or eliminate gender-based hierarchies not only in relation to employment, as discussed above, but in general. We should also expect improvements in funding and/or provision of affordable childcare; a strengthening of equal opportunities policy; more women-friendly family law policy in relation to issues such as divorce and inheritance; reproductive rights policies that give women more control over their own bodies by means such as improving access to contraception and liberalizing abortion laws; and improvements in protection for women against violence (including rape and domestic violence), as well as against sexual harassment and exploitation, by means such as legal reform and increases in funding for women's refuges (Kilkey, 2004, p. 332; Mazur, 2002).

Again a lack of relevant data means that not all of these propositions can be tested. However it is possible to test hypotheses relating to abortion and sexual violence.

2.1 In recent years abortion laws in the 12 test countries in which these laws were not already liberal have been liberalized

The rationale here is that liberal abortion laws are pro-women in the sense that they enable pregnant women to decide for themselves whether to have an abortion, rather than having this decision made for them, in the negative, by (mainly male) lawmakers.

It is clear that abortion laws have in fact been becoming more liberal over the past few decades. Since 1960 major liberalizing reforms of abortion law have taken place in 10 of the 12 test countries: Austria (1974), Belgium (1990), Britain (1967), Denmark (1970 and 1973), Finland (1970), France (1975), Italy (1978), the Netherlands (1981), Spain (1985) and Sweden (1974) (United Nations 2008). In Germany the story is more complex, as legislation designed to liberalize abortion had to be replaced by less 'radical' legislation both in the 1970s and in the 1990s when the original reforming legislation was struck down by the Constitutional Court. That is, German governments have attempted to liberalize abortion, as policy network theory suggests, but have been repeatedly blocked by the Constitutional Court. Ireland is the only country in which abortion remains illegal, although even here legislation was passed in 1995 to define the right to impart and receive information about abortion (United Nations, 2008).

The trend towards more liberal abortion laws is very clear. This hypothesis is therefore *confirmed.*

2.2 In recent years there has been a trend in the 12 richest EU countries towards greater legal protection of women from sexual violence

It hardly needs saying that greater legal protection against sexual violence is obviously of benefit to women. The available evidence suggests that relevant laws are indeed moving in this direction. Although data on state regulation relating to sexual violence towards women is fragmentary, all of the relevant regulatory changes made since the 1960s that are reported in the *International Encyclopedia of Sexuality* were in the direction of broadening the scope of relevant legislation and providing for harsher punishment for those convicted, although wide variations in the law remain. In Austria, rape within marriage/cohabitation was made illegal in 1989, and sexual harassment at work was made illegal in 1993. Sexual harassment was made illegal in Britain in 1975, and in 1997 the Protection from Harassment Act was passed. In addition, new dedicated non-police station units have recently been made available for questioning of victims. In Denmark the onus of proof in cases of sexual harassment was moved from the alleged victim to the alleged offender in 2002. In Ireland the definition of rape was widened in 1990 and now includes rape within marriage. In 1989 in Spain the Statute for Workers included provisions relating to sexual harassment, and the rape law was updated and widened in scope. Legislation in Italy in 1996 provided for more severe treatment of rape, and rape within marriage was criminalized in the Netherlands in 1991 (Francoeur, 1997–2001, 2004).

The trend towards stronger legal protection for women against sexual violence is clear. This hypothesis is therefore *confirmed.*

7.5 Conclusions

This chapter has reported the results of testing a number of hypotheses generated by applying policy network theory to three major king trends in relation to the 12 richest EU member states.

The first three hypotheses are that *the growth and diversification of production and consumption* has led to

1. increasing public spending on education;
2. a trend towards granting independence to central banks; and
3. a trend towards a weakening of employment protection regulation.

The next three hypotheses are that *the shift to services* has led to

1. steps to open up new international markets for services;
2. a trend towards granting independence to central banks; and
3. a trend towards a weakening of employment protection regulation.

These last two hypotheses are, of course, identical to the last two tested in relation to the growth and diversification of production and consumption. The reason for this is that policy network theory suggests that both of these king trends lead to diminishing pressure on governments to implement union-friendly policies, which among other things implies trends towards granting independence to central banks and weakening employment protection regulation.

The final two hypotheses are that *the growth in women's employment* has led to:

1. liberalization of abortion laws;
2. a trend towards greater legal protection of women from sexual violence.

All eight of these hypotheses (six unique hypotheses) have been confirmed in the sense that they are not disconfirmed by the available evidence.

Four other hypotheses were tested but then had to be set aside. The hypothesis that the growth and diversification of production and consumption implies lower minimum wages, which was disconfirmed, had to be dropped because it is contradicted by the hypothesis that the effects of population ageing implies higher minimum wages as governments react to the effects of ageing on the size of the labour force by taking steps to try to ensure that work pays. The hypothesis that the growth of women's employment implies more women-friendly employment legislation had to be dropped, despite being confirmed, because it is contradicted by the hypothesis that a number of economic king trends, including rising affluence and the shift to services, imply more business-friendly policies that include a progressive weakening in employment legislation in general. That is, policy network theory does not in fact generate any determinate prediction about either minimum wages or employment legislation as it relates to women. The hypothesis that developments in production technology have led to a shift towards policies designed to facilitate the development and use by business of new technologies had to be dropped, despite being confirmed, because in fact changes in production technology imply maintenance of such policies rather than their intensification. An attempt to test the hypothesis that the growth and diversification of production and consumption and the shift to services have led to the introduction of explicitly anti-union legislation failed due to lack of adequate evidence.

The next chapter sets out the results of testing hypotheses based on the policy implications of three economic king trends that are closely related: the trend towards greater energy use, the trend towards greater mobility, and climate change.

8
Energy, Mobility and Climate Change

8.1 Introduction

Growing energy consumption, increasing mobility and climate change are closely connected king trends that together set up strong yet conflicting policy imperatives. After briefly reviewing what these trends consist of, this chapter draws out their policy implications and tests four hypotheses based on these.

8.2 The king trends described

1. Increasing use of energy

Energy consumption in Europe has been increasing for a long time. Between 1973 and 2004 total energy demand in the 12 test countries increased by nearly 30 per cent to just under 1,500 million tonnes of oil equivalent (Mtoe) per year. Energy demand increased in all 12 test countries by amounts ranging from 1.5 per cent (Denmark) up to 171.4 per cent (Spain) (IEA, 2006, Table A5).

This trend is expected to continue in the years ahead but also to flatten out somewhat, although it is important to bear in mind that energy projections are highly sensitive to varying assumptions about factors such as oil prices, economic growth, use of renewables and energy efficiency. Projections by the International Energy Agency (IEA) for 11 of the test countries (information is not available for Spain) suggest that between 2004 and 2020 total energy demand in the 12 test countries will increase by just under 6 per cent, rising in 10 of the countries but falling slightly in Germany and Sweden (IEA, 2006, Table A5). For the post-2004 European Union of 25 states (EU-25) as a whole, gross inland consumption of energy over the somewhat longer period

2000–30 is expected by the European Commission's Baseline Scenario to increase by just under 20 per cent. Most of the extra demand for energy is expected to be met by natural gas, use of which is expected to rise by two thirds to constitute 32 per cent of total energy consumption. However oil is expected to remain the single largest fuel at 34 per cent of gross inland consumption despite the fact that oil consumption is only expected to increase in absolute terms by 6 per cent. Solid fuels consumption is expected to fall steeply in the short term but then to rise again as a replacement for nuclear power and as its price competitiveness improves due to increases in gas prices. The nuclear contribution is expected to fall from 14 per cent of total energy consumption in 2000 to 9.5 per cent in 2030 as reactors are phased out in several member states after 2010. Renewables under this particular scenario are expected to grow by 76 per cent over this period but would still amount to just 8.6 per cent of total energy consumption in 2030 (European Commission, 2004g, pp. 31–48).

One effect of growing energy consumption is likely to be growing dependence on imported energy. Because the Commission's Baseline Scenario projects that production of primary energy in Europe itself will fall by about a quarter due to steep declines in fossil fuel and nuclear energy production, the scale of expected increases in energy use implies an increase in imports from 47 per cent of energy consumption in 2000 to 67 per cent in 2030. All scenarios, including those that assume maximum use of nuclear power and renewables, project an increase in import dependency (European Commission, 2004g, pp. 40, 161, 170).

Another consequence of expected rises in energy use is an increase in energy-related greenhouse gas (GHG) emissions. The big increases in energy consumption that are projected, and the expectation that by 2030 fossil fuels will still provide for 82 per cent of gross inland consumption, leads the Baseline Scenario to project that carbon dioxide emissions will grow by 17 per cent to 4,304 million tonnes per year between 2000 and 2030. These increases in emissions are expected to be driven mainly by the power generation sector growing and becoming more carbon intensive as the contribution of nuclear power falls and coal makes a comeback, and by increases in fossil fuel use by transport (European Commission, 2004g, pp. 40–7, 157–70).

One possibility that needs to be noted, however, is that global oil production may peak earlier than expected, as a number of industry analysts argue that estimates of oil reserves have in the past been inflated for political reasons while the results of recent oil exploration have been disappointing and the growth of demand for oil has been underestimated by organizations such as the IEA (Goodstein, 2004; Hirsch, Bezdek and Wendling, 2005, pp. 13–19; Illum, 2005). The significance of this is that once production peaks and starts to decline, continuing growth in demand for oil would be expected to drive up oil prices indefinitely. For transport in particular there are no ready alternative fuels for motor vehicles, aircraft or ships (Hirsch et al., 2005, pp. 27, 64). The impact of this on European economies would be profound. Among other things, higher oil prices directly raise price inflation and input costs while reducing non-oil demand and investment. The resulting lower level of economic activity reduces tax revenues and increases the size of budget deficits, which tends to lead to higher interest rates. Employee resistance to loss of purchasing power due to price inflation caused by increasing oil prices puts upward pressure on wages, which in conjunction with reduced demand tends to lead to higher unemployment. The experience of the last three decades provides empirical evidence of the damage that oil price rises can cause: economic growth fell sharply in most oil-importing countries following the oil price rises of 1973–74 and 1979–80, and most of the major economic downturns in Europe in recent decades were preceded by sudden oil price increases (IEA, 2004, pp. 5–6).

The significance of this is that under this scenario total consumption of energy might in fact fall during the period up to 2030 as less oil is consumed and the accompanying economic slowdown reduces demand for other types of energy as well. In these circumstances the relevant energy king trend could well be rising oil prices rather than rising energy consumption. For the purposes of this analysis, however, I stick with the orthodox belief that energy use in the 12 test countries will in fact continue to increase.

2. Increasing mobility

As time goes on, people and goods are moving around more and more both within Europe and between Europe and other parts of the world as a result of factors such as increasing demand both for personal travel and for goods for which the trade and distribution networks are becoming longer and more complex.

Between 1970 and 2006 mobility of people and goods increased in all 12 test countries. For people this essentially means big increases in travel by cars and aeroplanes. Passenger car travel increased by just over 150 per cent for the 12 countries as a whole to 3,855 million passenger kilometres (pkm), which is over ten times as far as travel by either railways or buses. Car travel increased by 100–200 per cent in 7 of the 12 countries and exceeded 200 per cent in three (Ireland, Italy and Spain). The only countries in which passenger car travel did not at least double were Denmark and Sweden (European Commission, 2007c, Tables 3.3.4–3.3.7). Comparable data for air transport is only available for the period 1990–2000, but during this period air travel grew strongly in terms of passenger kilometres in all 12 test countries. Average annual rises ranged from 4.1 per cent in Finland up to 9.5 per cent in Ireland (European Commission, 2008e, Appendix 2).

Freight transport also increased in all 12 countries. Comparable data for road haulage is only available for the period 1995–2006, but even in this short time it increased by 35 per cent to reach 1,450 million tonne kilometres (tkm) by 2006, compared with just 277 million tkm for rail and 127 million tkm for inland waterways (European Commission, 2007c, Tables 3.2.4c–3.2.6). Meanwhile the total tonnage of goods handled in the major maritime ports of the 11 test countries with a coastline grew between 1997 and 2006 by just over 20 per cent (Eurostat, 2008f, p. 2).

This rise in mobility seems set to continue, as the European Commission projects under its Baseline Scenario that both passenger and freight transport will grow decade on decade between 2000 and 2030 in all 12 test countries, apart from a slight fall in freight transport in Belgium between 2000 and 2010. Aviation is expected to grow fastest in terms of passenger kilometres in all 12 countries apart from Ireland. In contrast to the past, road transport is not expected consistently to grow more quickly than other modes of transport (European Commission, 2008e, Appendix 2). Authoritative estimates of EU seaborne traffic up to 2030 do not appear to be available, but if trade continues to increase, as argued in the next chapter, it seems reasonable to expect that sea transport will continue to grow as well.

3. Climate change

The idea that the climate is changing as a result of human activities is based on scientific findings that (1) carbon dioxide, methane, nitrous oxide, the chlorofluorocarbons (CFCs) and ozone warm the Earth by absorbing some of the reflected solar radiation from the Earth that would otherwise radiate back out into space (the greenhouse effect), (2) concentrations of these gases in the atmosphere are rising, (3) these rises are caused primarily by the increasing scale of human activities and in particular by the burning of fossil fuels, and (4) average temperatures are in fact rising as time goes on. Although not everyone accepts these propositions, there is a broad scientific consensus based on very extensive research coordinated and summarized by the UN Intergovernmental Panel on Climate Change

(IPCC) that climate change is occurring as a result of human activities and that it is likely to continue for the foreseeable future unless current trends in GHG emissions are reversed (Houghton, 2004, pp. 10, 28–52, Forster et al., 2007, p. 135).

Its effects on Europe are expected to be serious. Climate models indicate that the significant warming that is expected to occur will be greater in winter in the north and in summer in the south, while precipitation is projected to increase in the north and decrease in the south. This is expected to lead to more heat waves and more deaths from heat stress, on the one hand, but also fewer cold winters and fewer deaths from cold. It is also expected to lead to increased flooding, especially along the coast, along with more frequent and intense extreme events such as gales and windstorms, storm surges, intense precipitation events and droughts. Southern Europe is expected to be especially seriously affected, with its hotter drier summers leading to problems in areas such as agriculture. There is also expected to be an extension of some vector-borne diseases from the south (Alcamo et al., 2007). Insurance companies calculate that economic losses from extreme weather events have increased tenfold since the 1950s, and by mid-century such events are expected to lead to annual economic costs of 1 to 2 per cent of GDP for rich countries such as EU member states (Houghton, 2004, p. 180–7).

8.3 Policy implications

1. Rising energy consumption

The logic of policy network theory suggests that the main policy implications of rising energy consumption are more vigorous measures to ensure security of energy supply, and the introduction and strengthening of measures designed to reduce energy-related carbon dioxide emissions. There are also indirect implications for public policy through the contribution of rises in energy use to the growth and diversification of production and consumption, and to the increasing mobility of people and goods.

Increasing demand for energy means continued pressure on governments to ensure that energy supply meets demand: both businesses and households want continued and easy access to energy and object to disruptions such as blackouts. They also object to big price rises. Energy disruptions and big energy price rises also lead to economic and therefore electoral problems for governments in power when they occur. This all gives governments powerful incentives to do whatever is necessary to ensure security of supply.

The problem for governments is that increasing dependence on energy imports, due to rising energy consumption combined with falling domestic energy production, reduces their ability to ensure energy security. Given the importance of security of energy supply to the economic and electoral goals of governments, the logic of policy network theory suggests that in these circumstances governments will attempt to compensate for this loss of control by taking new initiatives in this area, such as more vigorous measures to ensure that imports of energy are not disrupted as well as measures aimed at improving energy efficiency and conservation and encouraging new energy technologies.

But there is a problem. One of the main unintended consequences of increased energy use, as we have seen, is climate change. As will be argued in the section on climate change, the logic of policy network theory suggests that learning about climate change and its causes implies the introduction of policies designed to reduce GHG emissions. Since the burning of fossil fuels is estimated to generate over 80 per cent of GHG emissions (IEA, 2003, p. 90), this implies the introduction of measures designed to reduce energy-related emissions of carbon dioxide that, as we shall see, partly conflict with policies designed to ensure energy security.

2. Increasing mobility

The main policy implications of increasing mobility are similar to those of rising energy consumption, although the details differ: more vigorous measures to ensure fuel security for transport, and the introduction of policies designed to limit transport-related carbon dioxide emissions.

In relation to fuel security the rationale is the same as for energy security in general: growing demand, in this case for oil in particular, means greater dependence on oil imports and therefore growing electoral vulnerability to shortages and/or big price rises. According to the logic of policy network theory, this will lead governments to take more determined action to ensure that global investment in oil production is adequate and imports of oil are not disrupted, as well as more vigorous measures to encourage or mandate improvements in fuel efficiency, reduce traffic congestion in order to reduce the amount of fuel wasted in traffic jams, and progressively switch to fuels that are less vulnerable to disruption than oil both within and between transport modes. The incentives for governments to take such steps would of course strengthen if oil peaks earlier than expected and oil prices skyrocket. The tendency of growing mobility to increase traffic congestion is also likely to lead businesses and voters to maintain pressure on governments to take steps to reduce congestion by means such as improving transport infrastructure, improving management of transport, and reducing the demand for transport. As this implies policy continuity rather than any particular policy trend, however, since governments have been working to keep traffic flowing for a very long time, the issue of traffic congestion is disregarded except insofar as increasing dependence on energy imports increases pressure on governments to reduce congestion as a fuel-saving measure.

In relation to climate change the policy network rationale is again similar to that relating to rising energy consumption in general: as the growing transport sector is almost completely dependent on fossil fuels, efforts to tackle climate change must obviously include action in this sector if they are to have any chance of success. As with rising energy consumption, however, policies designed to reduce transport-related GHG emissions are not altogether compatible with policies designed to ensure security of energy supply.

3. Climate change

Policy network theory can be used to delineate a detailed picture of the causal pathways that link climate change and public policy, as demonstrated in Chapter 5 where these pathways were described in detail as an example of policy network theory in action. Here the emphasis is on sketching just the essential features of this picture.

First, it is clear that the scientific discovery of climate change has led many policy actors (including many voters) to learn from scientific and other expert evidence that climate change is a problem and what the technically and economically viable solutions are believed to be, and then as a consequence to change their policy preferences to include the introduction of at least some climate policies unless to do so would conflict with other strongly held preferences. Changes in perceptions of problems and solutions that alter policy preferences may also be caused by the direct effects of climate change, such as flooding where the phenomena in question are framed as being caused by climate change. If scientists are correct and the effects of climate change become more damaging as time goes on, more and more people and organizations will be directly affected in the years ahead and are therefore likely to become more supportive of strengthening climate policy.

Where measures to combat climate change impose economic costs, however, these are likely to be opposed by those for whom such policies might be costly or damaging, such as large industrial energy users, as well as by associated ministers, departments and agencies in government. Consumers also object to additional costs, as the British fuel tax protests of 2000 demonstrated (Doherty, Paterson, Plows and Wall, 2003).

Public actors with the appropriate legal powers can translate their changed policy preferences directly into public policy by acting unilaterally without engaging in resource exchange with other actors, but if they wish to obtain (or retain) needed resources from other actors, such as political support, they are likely to have to amend their preferred climate policies. In particular, such governments need to avoid policies that lead affected firms to move to other countries, cause significant numbers of voters to defect to opposition parties, or require the cooperation of actors who are not prepared to play ball. This implies a trend towards stronger climate policies that (1) do not elicit strong opposition from business or voters, (2) are inflected by the policy preferences of business and/or voters, and/or (3) involve trade-offs in other areas.

Insofar as actors outside government change their preferences to include climate policies, the policy amendments that they seek from public actors in the course of resource exchange will include measures to mitigate and/or adapt to climate change. This implies that over time there will be a trend towards those climate policies that these private actors favour, provided they do not elicit strong opposition from other actors, in particular government, business or voters, are inflected as necessary by the policy preferences of these other actors, and/or involve trade-offs in other areas.

Climate policies also face a number of further obstacles.

First, some of the specific policy implications of climate change contradict the policy implications of growing energy use. Refusing permits for new coal-fired power stations, for instance, could substantially reduce GHG emissions but at the cost of undermining energy security by limiting use of a fuel the total global recoverable reserves of which are estimated at 1000 billion tons, enough to last about 190 years at current consumption levels (US EIA, 2005, p. 50).

Second, in the chapter on the policy implications of increasing trade and the internationalization of production it is argued that it is becoming easier for transnational companies (TNCs) to shift investment between countries. This is obviously a problem for any government contemplating the introduction of climate policies that impose costs on business, such as big energy or carbon taxes.

Third, a number of climate policies would, if implemented, be likely to endanger the re-election chances of governments by impeding economic growth. Requiring all new coal-fired stations to install carbon capture and storage, for instance, would undermine economic growth by significantly raising energy costs.

Because the economic and electoral costs to governments of failure to control climate change are not only mostly well in the future but also outside the control of any one government, while the economic and electoral costs of failure to ensure energy security and economic growth while keeping business and voters happy are much more immediate, the logic of policy network theory suggests that climate policies will not be introduced where this would be likely significantly to undermine energy security, economic growth, business confidence or electoral support in general. Furthermore, as mentioned earlier, where climate policies are introduced they are likely to have to be inflected by the preferences of voters, firms that the government believes might otherwise leave the country, and actors who would otherwise block their passage or implementation.

The other major policy implication of climate change consists of more vigorous measures to facilitate adaptation to the effects of climate change, such as improving flood defences and planning for agricultural change. Unlike policies designed to reduce GHG emissions, adaptation policies seem unlikely to elicit determined opposition, except possibly to the extent that they are very expensive. They are also likely to be strengthened periodically following severe weather events, such as flooding, where these events are framed as being caused by climate change.

8.4 Test

It follows from the discussion in the previous section that the net policy implications of growing energy consumption, increasing mobility and climate change are as follows.

First, we should expect more vigorous measures to ensure energy security, such as policies designed to ensure that global investment in energy production is adequate, imports of energy are not disrupted and domestic utilities deliver power reliably and at affordable prices, as well as policies aimed at improving energy efficiency and conservation, encouraging new energy technologies and expanding the production of renewable energy. These would also be the policy implications if oil production peaks earlier than expected.

Second, we should expect more vigorous measures to ensure fuel security for transport, in particular measures designed to ensure that global investment in oil production is adequate and imports of oil are not disrupted, as well as more vigorous measures to encourage or mandate improvements in fuel efficiency, relieve traffic congestion in order to reduce the amount of fuel wasted in traffic jams, progressively switch to fuels that are less vulnerable to disruption than oil both within transport modes (such as switching from cars fuelled by gasoline to electric cars) and between transport modes (such as switching from cars to electrified rail transport), and reduce the demand for travel.

Third, we should expect the introduction or strengthening of measures designed to mitigate climate change provided that these do not undermine energy security, economic growth, the trend to more business-friendly policies, or electoral support in general, and are inflected as necessary to secure acceptance not only by voters but also by firms that the government believes might otherwise leave the country, and by actors who would otherwise block passage or implementation of relevant policies. Relevant policies here include more vigorous measures to encourage less carbon-intensive energy and transport technologies, energy conservation and efficiency (including in relation to transport), fuel switching within and between transport modes, expansion of energy production from renewable sources, and voluntary agreements with particular industrial sectors according to which companies in these sectors undertake to reduce GHG emissions.

Finally, we should expect more vigorous measures to facilitate adaptation to the effects of climate change, such as improving flood defences and planning for agricultural change.

On the other hand, policy network theory does not make any determinate predictions in relation to emissions trading, the process by which countries or companies are allocated credits, or 'rights to emit' GHG gases within an agreed international cap, and then buy or sell credits depending on the relative costs of (1) *not* reducing emissions and buying extra credits if necessary to cover these emissions, or (2) reducing emissions and selling any unused credits. This is because although emissions trading imposes costs on some companies, which runs counter to the pressure on governments to introduce more rather than less business-friendly policies, those companies that manage to reduce emissions cheaply may make money from selling their unused credits, which weakens business opposition to this type of scheme.

Carbon and other climate change–oriented energy taxes, by contrast, impose taxes on all companies to which they apply – although even here opposition can be weakened by exempting selected sectors from such taxes and/or by using the revenue raised to reduce other taxes and charges, such as employers' social contributions, so that the net cost to business as a whole is nil. While the logic of policy network theory does rule out consistent across-the-board carbon or climate change–oriented energy taxes, therefore, because this runs counter to the pressure they are under to implement more rather than less business-friendly policies, it has no determinate prediction in relation to such taxes where exemptions are made and/or companies are compensated. And we find that carbon or climate-oriented energy taxes have in fact been introduced in 6 of the 12 test countries (UNFCCC, 2007, pp. 18–19).

In relation to nuclear power the situation is slightly different: concerns about energy security and climate change both imply a shift towards nuclear power, and moreover its role in improving energy security means that nuclear power is a business-friendly policy, but its unpopularity in at least some of the test countries means that in these countries action at this stage would be highly politically damaging, so is not expected. Although in 2006 those opposed to nuclear power exceeded 50 per cent of citizens in just 2 of the 12 test countries (Austria and Denmark), the percentages opposed exceed the percentages in favour in 10 of the 12 countries, and by more than 20 percentage points in six (Eurobarometer, 2007, p. 32). At present nuclear reactors are in operation in 8 of the 12 test countries. New reactors are under construction in two (Finland and France), being upgraded in two (Netherlands and Sweden) and are under consideration in three (Britain, Finland and France), while 10 reactors are being retired (4 in Britain, 1 in France and 5 in Germany) (OECD, 2008c, p. 5, 30).

As energy use and mobility have been increasing for a long time, if their hypothesized effects on public policy are real they should already be in evidence. This should also be the case for climate change despite the fact that this was only discovered fairly recently, as climate change has been recognized as a problem by governments of the 12 test countries at least since 1992 when they were among the original signatories to the United Nations Framework Convention on Climate Change (UNFCCC). A preliminary indication of this is given by the fact that by the end of 2007 all 12 test countries had adopted national climate change strategies, action plans and programmes, and report that by 2010 existing and planned measures will have significantly reduced GHG emissions compared business as usual (UNFCCC, 2007, pp. 14, 47).

Numerous hypotheses that are specific enough to be tested can be drawn from these general policy implications. Although lack of relevant information means that not all of these hypotheses can be tested in practice, it is possible to identify four major hypotheses that are testable and to test them using information drawn from a summary of national reports on policies and measures implemented to fulfill commitments made under the UNFCCC as of October 2007 (UNFCCC, 2007, pp. 14–38).

1. More vigorous measures to encourage or mandate energy conservation and efficiency, including in relation to transport

There is abundant evidence that the governments of the 12 test countries have worked at national and EU levels to raise energy efficiency and improve energy conservation.

At EU level the Energy End-use Efficiency and Energy Services Directive agreed by at least a qualified majority of EU member states instructs national governments to set national targets of 1 per cent of energy savings per year, and 1.5 per cent per year for their public sectors. Measures used at national level to achieve these targets include quota and certificate programmes (Belgium, Britain, Denmark, France, Italy and the Netherlands). The Energy Performance of Buildings Directive requires member states to set energy performance standards for new buildings and major renovations. Mandatory energy standards have been set in all 12 test countries for household appliances, home entertainment devices and office equipment. Information programmes (labels, ratings and certifications) are also widely used (UNFCCC, 2007, pp. 28–30).

In relation to transport, mandatory labels are used in the EU to provide information on fuel economy (and CO_2 emissions) of new cars, and voluntary agreements were struck between the EU and European, Japanese and Korean car manufacturers to increase fuel efficiency in order to reduce CO_2 emissions. Fiscal incentives for energy efficiency improvements, such as differentiated vehicle taxes and fees, were used in 9 of the 12 test countries, with infrastructure charging in addition in Austria and Germany (UNFCCC, 2007, pp. 30–1).

It is clear that the governments of all 12 test countries have acted individually and collectively to encourage and mandate energy efficiency and conservation. This hypothesis is therefore *confirmed.*

2. More vigorous measures to encourage or mandate fuel switching within or between transport modes

Here the main development relates to biofuels: the EU Biofuels Directive sets indicative biofuels share targets for each member state with the aim of raising the biofuels share at the EU level to 5.75 per cent of the EU-25's transport fuels by 2010, and 10 of the 12 countries have moved to encourage or mandate an increase in biofuels use by introducing either tax reductions/exemptions for biofuels or regulations that require fuel suppliers to meet a minimum proportion of their sales with biofuels (UNFCCC, 2007, p. 27). Nothing is reported on other types of fuel switching, such as measures designed to move passengers from cars to trains. Nevertheless, it is clear that this hypothesis as formulated is *confirmed.*

3. More vigorous measures to encourage expansion of energy production from renewable sources

The EU Renewable Electricity Directive sets indicative targets for the renewable energy sector in each member state. Fiscal incentives (guaranteed feed-in tariffs) are used in 7 of the 12 test countries, market incentives (quotas and tradable green certificates) in a further four, and fiscal incentives (tax incentives and investment grants) in the remaining one (Finland) (UNFCCC, 2007, p. 26). This hypothesis is therefore *confirmed*.

4. Voluntary agreements with particular industrial sectors to reduce GHG emissions

Voluntary agreements whereby companies within a particular sector agree to reduce their collective GHG emissions by a specific amount have been signed at EU level with car manufacturers, as mentioned above, as well as at national level in six of the test countries, which means that this hypothesis is *confirmed* (UNFCCC, 2007, p. 21).

8.5 Conclusions

This chapter reports the results of testing four hypotheses based on the policy implications of *growing energy consumption*, *increasing mobility of people and goods*, and *climate change,* namely that in recent years governments in the 12 test countries have

1. implemented more vigorous measures to encourage or mandate energy conservation and efficiency, including in relation to transport;
2. implemented more vigorous measures to encourage or mandate fuel switching within or between transport modes;
3. implemented more vigorous measures to encourage expansion of energy production from renewable sources; and
4. struck voluntary agreements with particular industrial sectors to reduce GHG emissions.

All of these hypotheses were *confirmed*.

9

Trade Expansion and the Internationalization of Production and Finance

9.1 Introduction

This chapter reports the results of testing hypotheses based on the policy implications, according to policy network theory, of three closely related economic king trends: the expansion of trade, the internationalization of production, and the internationalization of finance. Together these trends are close to what is meant by economic globalization, but as they apply more to Europe, North America and East Asia than to poorer countries such as those in Africa (UNCTAD, 2003, p. 23; 2004, pp. 48–49), internationalization is a more accurate term than globalization, and separating out trade, production and finance delineates more precisely what is being examined.

The account begins by briefly describing exactly what these trends consist of and the evidence that leads them to be identified as king trends, then goes on to derive and test hypotheses on the basis of those policy implications that can be tested.

9.2 The nature of these trends

1. The expansion of trade

Trade involving European countries has been growing for many years and looks set to continue growing for many years to come. Since 1960 the value of imports and exports of goods and services in the 12 test countries has increased steadily in real terms decade by decade in all 12 test countries and has outstripped economic growth in these countries during most of this period (European Commission, 2008f, pp. 100–3, 108–11). In addition, at least some of the factors that are thought to have caused growth in trade in the past are likely to continue to operate into the foreseeable future, in particular the spread of transnational corporations (internal trade within such companies is estimated to account for about 30 per cent of world trade), increases in demand for capital and consumer goods due to rapid income growth, and improvements in communication and transportation (OECD, 2001a, p. 48). Trade involving OECD countries in general is expected to increase faster than economic growth until about 2015, and then at about the same rate (OECD, 2008d, 96–9), and it is reasonable to suppose that this will also be true for most if not all test countries. Perhaps the main threat to the continued expansion of trade is the possibility of that oil production may peak sooner rather than later, as this could result in falling demand for traded goods as rising fuel prices raise the prices of traded goods and economic demand in general falls as a consequence of the economic slowdown that would almost certainly accompany a steady rise in energy prices. The analysis in this chapter, however, is premised on the assumption that even if oil does peak early, it will not be enough to halt the expansion of trade altogether.

2. The internationalization of production

As time goes on, economic activities in European countries are increasingly coming under the control of foreign firms while at the same time domestic firms continue to expand their operations beyond national borders to control foreign enterprises. Transnational corporations (TNCs) are defined by the UN as:

> incorporated or unincorporated enterprises comprising parent enterprises and their foreign affiliates. A *parent enterprise* is defined as an enterprise that controls assets of other entities in countries other than its home country, usually by owning a certain equity capital stake. An equity capital stake of 10 per cent or more of the ordinary shares or voting power for an incorporated enterprise, or its equivalent in an unincorporated enterprise, is normally considered as a threshold for the control of assets. A *foreign affiliate* is an incorporated or unincorporated enterprise in which an investor, who is resident in another economy, owns a stake that permits a lasting interest in the management of that enterprise (an equity stake of 10 per cent for an incorporated enterprise or its equivalent in an unincorporated enterprise).
>
> (UNCTAD, 2003, p. 231)

Greenfield investments involve setting up new productive facilities in the host country. Mergers and acquisitions take place when an enterprise merges with, or acquires control of all or part of, another enterprise. Strategic alliances differ from mergers and acquisitions in that the participating firms remain independent, and are designed to enable participating firms to economize on costs of production and research, strengthen market position or access other firms' intangible assets. Alliances can link firms horizontally to similar firms or vertically to suppliers and customers, and can take the form of (1) joint ventures in which a separate corporation is set up by the partners, (2) minority equity investments and equity swaps, or (3) non-equity agreements to collaborate in areas such as R&D, manufacturing, marketing, sourcing, distribution, service provision or standards setting (OECD, 2001b, pp. 13–14, 27).

The principal indicator of the internationalization of production is foreign direct investment (FDI), defined as:

> an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy … in an enterprise resident in an economy other than that of the foreign direct investor.… FDI implies that the investor exerts a significant degree of influence on the management of the enterprise resident in the other economy. Such investment involves both the initial transaction between the two entities and all subsequent transactions between them and among foreign affiliates.
>
> (UNCTAD, 2003, p. 231)

The minimum ownership level required for a direct investment to be deemed to exist is set by the UN at the same level as that used to define an enterprise as a foreign affiliate of a TNC, namely 10 per cent of the voting shares. FDI thus defined is therefore a direct indicator of the transnational links that connect the parent enterprises of TNCs with their foreign affiliates. Foreign control of firms, by contrast, is defined as ownership of 50 per cent or more of ordinary shares or voting power on the board of directors (OECD, 2001c, p. 18; UNCTAD, 2004, p. 32). FDI is therefore an appropriate indicator of the internationalization of production, as it gives a general indication of trends in international financial stocks and flows as they relate to international (foreign) control and coordination of production in terms of what is produced, how and where. FDI stock consists of the value of the share of capital and reserves (including retained profits) of foreign affiliates attributable to the parent enterprise, plus the net indebtedness of affiliates to the parent enterprise. FDI flows consist of equity capital (shares purchased in another country), reinvested earnings by affiliates, and intra-company loans or debt transactions. Non-equity (non-share) forms of FDI mainly comprise subcontracting, management contracts, turnkey arrangements, franchising, licensing and product sharing. FDI also involves packages of assets such as expertise, technology and access to markets (UNCTAD, 2003, p. 231–2; Dunning, 1993, p. 4).

It is clear that production in Europe has been internationalizing for many years as European companies expand into other countries, including other European countries, while non-European companies expand their presence in Europe. Between 1980 and 2006 the stock of both inward and outward FDI increased as a percentage of GDP in all 12 test countries apart from Ireland, which instead saw large fluctuations in inward FDI in particular (UNCTAD, 2008a, 2008b). This trend seems likely to continue, as it is long-standing in nature; there are no obvious obstacles in its path even though governments could quickly reinstate barriers to foreign investment if they wished; the incentives for firms to engage in cross-border activities, such as market access and cost reduction, remain in operation; and experts believe that global flows of FDI will increase as intense competition continues to force TNCs to invest in new markets and seek access to low-cost resources and factors of production such as labour (UNCTAD, 2003, p. xv).

3. The internationalization of finance

We have seen in the previous section that FDI is increasing. The same is true, albeit with considerable short-term fluctuations, of other types of international financial stocks and flows (IMF, 2007, pp. 64–5, 93). Between 1992 and 2007 the amount of money traded on foreign exchanges, for example, increased in all 12 test countries, albeit with a dip following the replacement of several national currencies by the euro in 1999 (BIS, 2007, p. 82). Between December 1995 and January 2008 the value of external loans and deposits of banks rose significantly in all test countries. This is also true of the external positions of banks in general, for which information is available over the longer period of 1977–2008 (1990–2008 for Finland and Spain) (BIS, 2008, Tables 2A, 3A). Between 1995 and 2005 the value of foreign-controlled bank assets in Western Europe in general increased from 23 to 29 per cent of total bank assets (IMF, 2007, p. 101). The value of financial derivatives, such as forwards, futures, options and swaps, is also rising. Derivatives, which derive their value from the price movements of some underlying product, were originally designed to enable hedging but can also be used for speculative purposes. Forward contracts, for example, have long been used to fix a product price now for delivery at a specific point in the future in order to insure farmers, for instance, against possible falls in the price of their harvest. The same principle can be applied to financial products such as bonds, shares and currencies. Options, for instance, give the purchaser the right to buy a given product (such as shares) at a certain price at a specific point in the future. If the share price rises above the stipulated price by the due date, the purchaser can buy the shares at the stipulated price and profit by selling them on at the new higher market price. If it falls below this price, the purchaser leaves the shares but loses whatever he or she paid for the option (Brett, 2000, pp. 288–303). Country-specific information on derivatives is not readily available, but the notional principal amounts outstanding on European exchange–traded derivatives in general (futures and options), which means the value of the underlying financial products to which they relate, rose every year between 1995 and 2006 (IMF, 2008, Table 6). Information on derivatives traded outside exchanges (over-the-counter or OTC derivatives) is even more difficult to obtain due to the decentralized nature of these transactions, but a study of 13 industrialized countries that included Belgium, Britain, France, Germany, Italy, the Netherlands, Spain and Sweden found that between 1992 and 1999 the notional values of OTC derivatives in these countries quadrupled from $24,600 billion to $94,600 billion (G10, 2001, p. 459), and a separate measure indicates that between 1998 and 2007 the notional amounts outstanding on OTC derivatives in G10 countries plus Switzerland, seven of which are test countries (Belgium, France, Germany, Italy, the Netherlands, Sweden, the United Kingdom) rose from $72,134 billion to $516,307 billion (BIS, 2008, Table 19).

Finance is also internationalizing in the sense that the financial system itself is becoming more internationally integrated in a trend the ultimate destination of which would be a global financial system in which investments were made regardless of borders by global financial firms and institutions operating within a single financial market. An increasing number of firms are listed on more than one national exchange, for example, while financial firms are becoming bigger and more internationally integrated by means of mergers, acquisitions, joint ventures and strategic alliances (IMF, 2001, p. 11; G10, 2001; BIS, 2007a, pp. 134–5; IMF, 2007, pp. 98–9).

It seems likely that financial internationalization will continue for the foreseeable future despite possible short-term fluctuations: it is a well-established and consistent trend with no obvious obstacles in its path unless a series of financial crises persuade national governments to re-impose national financial controls; experts in the area generally agree that the trend will continue; and at least some of the causal factors to which it is attributed are likely to continue to operate, including increasing use of ICT, financial liberalization, financial innovation, the growth of funded pension schemes, and booming cross-border economic activity on the part of traditional customers (Greenspan, 2003; Walter and Smith, 2000, pp. 227–8; BIS, 2007a, p. 132; IMF, 2007, pp. 64, 99).

9.3 Policy implications

1. The expansion of trade

The application of policy network theory suggests that the main policy implications of the expansion of trade are more vigorous measures to open foreign markets; more business-friendly policies in general; greater international cooperation to limit foreign competition by means of establishing minimum international standards in areas such as labour law, taxation and environmental regulation; more vigorous measures to help workers displaced by trade-related structural adjustment; and more vigorous measures to combat illicit trafficking.

1.1 More vigorous measures to open foreign markets

The increasing importance of exports for economic prosperity adds to the economic and electoral incentives for governments to assist exporters to increase sales by pressing harder for foreign markets to be opened to them.

1.2 More business-friendly policies in general

As trade expands, exporters face increasing competition for foreign markets while domestic industries face increasing competition from imported goods and services. Other things being equal this means that increasing numbers of existing industries are likely to lose out to foreign competition, leading to their decline and possible elimination and thus to growing economic and social costs such as long-term unemployment, family disruption, and devastation of towns and regions. This increases the economic and electoral incentives for governments to increase their efforts to assist exporters and import-competing industries to compete with foreign firms.

Governments can do this in a number of ways. Moves to improve and extend transport and communications infrastructure help to reduce costs for resident firms. Improving education and training improves the quality of employees. Providing assistance with R&D helps firms produce new, higher quality, more advanced and/or cheaper products. Loans, subsidies and tax breaks assist firms by providing access to lower-cost capital and reducing costs in general. Relaxation of product market regulation (state control, barriers to entrepreneurship and barriers to trade and investment) creates new business opportunities for firms. Firms' costs can also be reduced by cutting taxes that apply to firms, such as corporation tax and employers' social contributions; taking steps to secure wage restraint; reforming employment regulation in areas such as working conditions, working hours, minimum wages and employment protection; and reducing costs associated with environmental regulation through reforming existing regulation to reduce compliance costs while maintaining the benefits to the environment (for instance by moving from command-and-control regulation to market instruments such as emissions trading), or by downgrading existing regulation and/or enforcing existing regulation less rigorously.

In short, policy network theory suggests that increasing trade leads national governments to adopt more business-friendly policies in relation to infrastructure, education, financial aid, R&D, product market regulation, tax, labour costs, labour flexibility and environmental regulation.

1.3 Greater international cooperation to limit locational competition

As well as stimulating governments to do what they can to improve the competitiveness of home-based exporters and import-competing industries, the growth of trade and its economic importance increases the incentives for governments to take steps to blunt the competitive edge of foreign firms competing on the basis of lower taxes, labour costs or environmental standards by pressing for international standards to be strengthened, for example by incorporating minimum labour and environmental standards into trade agreements.

1.4 More vigorous measures to help workers displaced by trade-related structural adjustment

Even if the expansion of trade has positive employment effects overall, it is likely to cause short-term job losses in some sectors, due to loss of export markets or competition from imports, even if employment opportunities increase in more successful sectors. As trade affects more and more of the economy, such job losses are likely to become more widespread and frequent, increasing the economic and electoral incentives for governments to help workers who lose their jobs in these circumstances by means of measures such as help with job search, relocation and retraining, plus the provision of financial assistance in the meantime, in order to facilitate the transfer of labour from declining sectors to growth sectors and thereby raise employment levels and economic growth.

1.5 More vigorous measures to combat illicit trafficking

Although the hidden nature of illegal trade in people and goods makes it impossible to be sure whether it is increasing or decreasing, it seems reasonable to assume that it is just as likely as legal trade to be stimulated by increases in consumer demand due to income growth and facilitated by improvements in transport and communications. It therefore seems likely that illicit trafficking in goods such as drugs and toxic waste, as well as in people, is increasing. Police certainly seem to think so. According to the European Police Office (Europol), for example, liberalization of the EU market, the opening of borders and the sheer volume of trade have weakened controls on the transport of people and goods and created more opportunities for illegal traffic (Europol, 2007, pp. 19, 22). Europol also asserts that organized crime groups are becoming more active in cross-border smuggling and in facilitating illegal immigration and human trafficking (Europol, 2006, p. 2; 2006a, p. 2; 2008, 1).

Given this, and bearing in mind that in the absence of reliable data it is perceptions that matter, it would appear reasonable to conclude that the heightened sense of threat created by perceptions of increased illicit trafficking will lead the police, customs and other law enforcement agencies, as well as groups inside and outside of government with concerns about specific issues such as drugs, prostitution and illegal immigration, to increase their efforts to persuade or pressure governments to take further steps to counteract this apparent trend by means such as expanding the use of surveillance, increasing police and customs cooperation, improving border controls and increasing penalties – although Europol reports that increasing border controls in the sense of stop and search is not an option because 'the slightest increase in controls would cause a bottleneck with cascading effects on traffic, backlog, access points, waiting times, delays in deliveries, decaying goods and so on' (Europol, 2007, p. 22). The net result is likely to be increasing pressure from relevant agencies and groups, plus increasing voter concern fed by negative media coverage on which opposition parties are likely to try to capitalize, for law enforcement to become more intrusive and repressive in these areas both nationally and internationally.

2. The internationalization of production

The main policy implications of the internationalization of production are more TNC-friendly policies; more business-friendly policies in general; greater international cooperation to limit locational competition by means of establishing minimum international standards in relation to labour law, taxation and environmental regulation; more vigorous policies to limit transfer pricing by TNCs; greater assistance for workers displaced by structural adjustment; and greater international cooperation in law enforcement.

2.1 More TNC-friendly policies

As TNCs become more important in the economy and inward investment increases in significance for economic growth and employment, national governments become more dependent on their activities to secure prosperity and thereby less dependent on purely domestic firms. If we assume that it is easier for TNCs to transfer production elsewhere than it is for purely domestic firms, increasing internationalization of production means that an increasing proportion of national production can be transferred elsewhere relatively easily. Inwards FDI in particular provides resources that can be withdrawn at any time. Such withdrawals can have especially serious consequences where the FDI has entered via a merger or acquisition or has driven local firms out of business (Dunning, 1993, p. 531). Put another way, expansion of the scale of international production increases the economic costs for a country of TNCs disinvesting if they don't like what a government is doing, thus increasing the bargaining power of these corporations. Other things being equal, the logic of policy network theory suggests that this will increase the likelihood of public policy becoming more supportive of the distinctive policy preferences of TNCs as time goes on, which implies that we should expect further liberalization of national and international investment regulation and/or expansion of targeted assistance and incentives for inward FDI.

2.2 More business-friendly policies in general

The increasing economic dependence of governments on TNCs, in conjunction with their capacity to locate investment where business conditions are best, implies increasing pressure on governments to improve their country's attractiveness to TNCs by implementing more business-friendly policies in general in areas such as infrastructure, education and training, financial assistance, product market regulation, R&D, labour costs, labour flexibility, tax and environmental regulation.

Policy network theory suggests that such developments are made more likely by the internationalization of production causing a reduction in the capacity of trade unions to resist more business-friendly policies where they come into conflict with their own policy preferences. If it is easier for TNCs to transfer production elsewhere than it is for purely domestic firms, increasing internationalization of production means that an increasing proportion of firms are in a position to transfer production elsewhere relatively easily. Since relocation of production would mean job losses for their members, this weakens the bargaining power of unions by providing more and more firms with an additional bargaining chip or threat to use in negotiations. Put another way, the internationalization of production renders the demand for labour more elastic, in that workers in one country can more easily be substituted for workers in another. This reduces the pressure on employers to pay a share of non-wage labour costs such as social insurance or to accede to union demands for better wages and working conditions. To the extent that the capacity of trade unions to exert pressure on employers is a significant resource for unions in their dealings with government, this loss of bargaining power vis-à-vis business would be expected to reduce the bargaining power of unions within the policy process. Other things being equal this implies that public policy is likely to become less union-friendly in areas such as wages and employment regulation.

2.3 Greater international cooperation to limit locational competition

Instead of competing with each other for inward investment by implementing policies that may be damaging in other ways, such as introducing tax cuts that undermine state finances, national governments that are not benefiting from locational competition may choose to try to restrict this by moving to establish or strengthen international minimum standards in areas such as labour law, taxation and environmental regulation. The increasing dependence of countries on TNCs and their locational decisions implies increasing incentives for governments with high standards in these areas to press for the strengthening of such standards.

2.4 More vigorous policies to limit transfer pricing

Even if the internationalization of production creates higher economic growth and more jobs overall, these benefits are vitiated to the extent that TNCs use transfer pricing to evade tax, as this impairs the re-election prospects of incumbent governments by undermining tax revenue and therefore their capacity to expand public services or cut tax rates. Transfer pricing occurs when the price of an intra-firm transaction deviates from the price that would have occurred if the seller and buyer had not been related. This practice is difficult to detect, especially where the transferred assets are specialized or intangible, as in the case of technology, for example, but it is generally agreed that many TNCs do undertake transfer pricing in order to reduce tax by choosing transfer payments that increase apparent costs in high-tax jurisdictions, in order to reduce or even eliminate the declared profits on which tax is payable, and increase apparent income in low-tax jurisdictions so that most if not all declared profits are taxed at the lowest possible rate. In response, national tax authorities employ a number of methods to impute the price that would have obtained between independent parties, including using comparable arm's length prices for similar transactions, adding a profit margin to estimated costs, subtracting profits from the eventual sales price, and splitting profits between vendor and purchaser. Tax evasion by foreign earnings concealment can be countered by means such as limiting bank secrecy and sharing information between governments (Navaretti, Haaland and Venables, undated, pp. 59–60; Kudrle, 2000, p. 216).

In general one would expect that as the value of international transactions within TNCs grows, so will the revenue loss from transfer pricing. This puts increasing pressure on host governments to reduce incentives for TNCs to engage in transfer pricing by reducing national differences in relation to tax rates, tax base definitions and capital gains tax (Dunning, 1993, p. 521). In practice this means increasing pressure on high-tax countries either to reduce corporate tax or to put in place international agreements that limit the capacity of tax jurisdictions to set very low (or zero) rates of corporate tax.

2.5 Greater assistance for workers displaced by structural adjustment

Increasing internationalization of production means increasing competition for local firms from foreign TNCs and increasing investment in other countries by home-based TNCs. Both are likely to lead to changes in what is being produced at home and therefore to job gains in some areas but job losses in others. Competition from incoming TNCs may lead hitherto competitive local industries to reduce production, change what they produce or even close altogether, while home-based TNCs investing in other countries may relocate local production to these other countries. Even if the internationalization of production produces net gains in production and employment, job losses caused by relocation of production or competition from incoming TNCs are likely to reduce the popularity of governments because they often take the form of highly visible plant closures in areas such as textiles and clothing, steel, the motor vehicle industry and, more recently, electronics and digitizable services. The popularity of governments may also be reduced by increasing feelings of economic insecurity due to increasing job turnover, especially among the low skilled (European Commission, 2004i, pp. 220–1; Scheve and Slaughter, 2004).

As the internationalization of production increases, we would expect the incidence both of highly visible job losses and of job turnover in general to increase. As with the expansion of trade, this implies increasing electoral problems for incumbent governments as more and more people are threatened or affected and the media highlight job losses more frequently. This puts governments under increasing pressure to do what they can to minimize the political cost of job losses associated with the internationalization of production. Since for EU member states the scope for providing affected firms and industries with financial and other assistance to keep them afloat is limited by EU rules on state aid (European Commission, 2005f), while placing further restrictions and conditions on inward investment in order to blunt the competitive edge of foreign TNCs risks reducing inward investment and the jobs that this brings, the one unequivocal policy implication here, according to policy network theory, is that governments will increase their efforts to assist laid-off workers to find new jobs by means of measures such as help with job search, relocation and retraining, while providing financial assistance in the meantime.

2.6 Greater international cooperation in law enforcement

If it is worthwhile for legitimate firms to internationalize their operations, and easier to do than it used to be, it stands to reason that criminal organizations will also find it profitable to expand internationally. Criminal organizations as well as legitimate firms may seek access to new markets, for example, and the foreign expansion of both is facilitated by advances in telecommunications and transport. Although the clandestine nature of crime means that it is impossible accurately to identify crime trends, Europol argues that organized crime groups in Europe are increasingly acting on a transnational scale (Europol, 2006a, p. 1).

To the extent that international crime is perceived to be increasing, demands on governments from its individual and organizational victims to implement more effective countermeasures will become more numerous and vociferous, other things being equal. Policy actors that by function or purpose are concerned about crime, such as the police and socially conservative political parties, would also be expected to become more concerned and therefore more active in pressing governments for action. Ultimately governments that fail to address the perceived increase in international crime risk electoral damage. It follows that perceived increases in international crime increase pressure on governments to internationalize law enforcement, as effective action against international crime obviously requires international cooperation, if not full international integration of national law enforcement agencies.

3. The internationalization of finance

According to policy network theory the main policy implications of the internationalization of finance, which were derived well before onset of the global financial crisis of 2008 (Compston, 2006, pp. 204–16), are more liberal policies on international finance, more vigorous measures to prevent financial crises and minimize their impact when they do occur, more business-friendly policies in general, and more vigorous measures to combat international financial crime.

3.1 Support for further financial liberalization

The main economic rationale for the internationalization of finance is that it improves economic efficiency by enabling finance to flow to the world's most productive investment opportunities. From a country-specific point of view, access to international capital markets facilitates economic growth by enabling resident firms to finance their activities without being constrained by the level of savings that the domestic economy can muster. The greater range of finance available should also mean that obtaining finance costs less in terms of interest rates. At the same time domestic savers should be able to obtain higher returns because they can now invest in other countries as well as domestically. It is also claimed that the competitiveness of resident firms, and thus their efficiency and productivity, is improved by having to compete with firms in other countries for investment (OECD, 2002d, p. 14; Walter and Smith, 2000, pp. 197, 273).

To the extent that the internationalization of finance has these effects, and in the absence of financial crises, we would expect higher growth than would otherwise be the case and therefore greater electoral support for incumbent governments, other things being equal. We would also expect governments to be able to obtain lower interest rates on government debt, which should be of electoral benefit because lower interest payments means that more money is made available to be spent in other areas or returned to tax payers in the form of tax cuts. For these reasons policy network theory suggests that the internationalization of finance strengthens incentives for governments to support further financial liberalization – except, as we shall see, to the extent that this substantially increases the perceived risk of financial crises or financial crime.

3.2 More vigorous measures to prevent financial crises and minimize their impact when they do occur

Even before the financial crisis of 2008 there were good reasons for thinking that the internationalization of finance increases both the likelihood and the potential severity of financial crises (Compston, 2006, pp.

209–11), especially as past booms in cross-border financial investment have been followed by crises (IMF, 2007, p. 63). First, the increasing integration of international financial markets means that crises in one market or country are more likely to create knock-on crises in other financial markets and countries. It also means that there are more countries in which a financial crisis can originate and then spread to other countries. If a country defaults on its foreign loans, for example, this may lead to the collapse of the international banks that provided the loans and thereby cause serious problems for other international financial institutions and for firms and governments in other countries. Second, the increasing scale of international capital stocks and flows exacerbates the consequences for a country of any capital flight, so that attempts by small countries to manage market risk, for example, can be overwhelmed by the scale and speed of capital movements (Eatwell and Taylor, 2000, p. 225; IMF, 2007, p. 80). Third, the growth of derivatives increases the risk of financial crisis due to their volatility, complexity and (mostly) speculative nature. Of particular concern are hedge funds that borrow large sums from banks in order to speculate using derivatives, as this raises the possibility that sudden speculative losses could lead to loan defaults, the collapse of a very large financial conglomerate and substantial damage to the financial system in general (Porter, 2005, p. 73, 78; Coleman, 2003, pp. 278–80). Finally, corporate consolidation in the financial sector may increase systemic risk. The larger and more complex a financial institution becomes, the harder it becomes to resolve any difficulties that may arise and the more serious the consequences of a collapse become. Interdependencies between large and complex financial institutions are thought to be increasing as consolidation increases, for example in the form of interbank loan exposures, market activities such as trading in OTC derivatives, and payment and settlement systems, and this increases the risk that a common shock will be transmitted to many firms. The possibility of contagion is also increased by the blurring of differences between commercial banks, investment banks, insurance companies and other forms of financial intermediary (G10, 2001, p. 15).

Because the knock-on economic effects of financial crises tend to undermine electoral support for incumbent governments, the increasing likelihood of severe financial crises that accompanies financial internationalization increases the incentives for governments to take steps to try to minimize the likelihood of their occurring and, when they do occur, to reduce their impact. Since national regulators that respond to financial threats or crises with unilateral strict regulations risk putting their financial sectors at a competitive disadvantage vis-à-vis foreign rivals, this implies that governments will instead increase their efforts to strengthen international prudential regulation of finance. Although governments of countries that currently attract financial activity and investment by means of light regulation may oppose moves in this direction, one would nevertheless expect that this increasing pressure for international prudential regulation will result in at least some further progress in this direction – especially, as we saw in 2008, when financial crises actually occur.

3.3 More business-friendly policies in general

Insofar as government policies are perceived to affect the value of financial assets, investors will take them into account when making their investment decisions. It follows that they will be more likely to invest in a given country when public policy is perceived to be favourable to their interests, other things being equal, than when it isn't. Given that governments have economic and electoral incentives to realize the benefits of financial internationalization, as we have seen, this implies pressure on them to establish and maintain policies that are optimal from the point of view of international financial markets. Because the increasing scale of actual and potential international financial stocks and flows is magnifying the rewards and punishments for 'good' and 'bad' policies as time goes on, this means that the internationalization of finance is increasing pressure on national governments to adopt policies that are considered to be sound by international financial markets. Among other things this means more business-friendly policies in general, as discussed earlier, in areas such as infrastructure, education, financial aid, R&D, product market regulation, labour costs, labour flexibility and environmental regulation.

3.4 More vigorous measures to combat international financial crime

The international integration of financial markets, along with developments in ICT and the creation of the EU single market, have made it easier to perpetrate frauds across borders and to launder money by moving it rapidly across several national jurisdictions, and the increase in electronic commercial activities that is under way is likely to create new opportunities for criminals in these areas as well (UN, 2000; Europol, 2006, p. 1). Criminals may hack into foreign computer systems to divert funds or acquire sensitive data such as payment card details. They may extort money by threatening denial-of-service attacks or by using information obtained by hacking into foreign computer systems to threaten to expose security flaws in bank systems. Another form of internationalizable financial fraud is to plant misleading stories on the Internet to inflate a company's share prices and then to sell one's own shares before the ruse is discovered (Jewkes, 2003; Grabosky and Smith, 1998). Money laundering, which invariably includes a cross-border element, is especially important for criminals because it enables them to spend illegally obtained money legitimately (FATF, 2003).

To the extent that international financial crime and its economic costs are perceived to be increasing, demands on governments from its individual and organizational victims to implement more effective countermeasures are likely to become more numerous and vociferous, other things being equal. Policy actors that by function or purpose are concerned about crime, such as the police and socially conservative political parties, would also be expected to become more concerned and therefore more active in pressing governments for action. Other things being equal this implies that the economic and therefore electoral costs of ignoring international financial crime are increasing, which according to the logic of policy network theory implies a trend towards more vigorous efforts to deal with it. Among other things this implies increasing cooperation in law enforcement, as effective action against international crime obviously requires international cooperation, although the extent to which this occurs is likely to be limited by opposition from a number of quarters. Moves to facilitate state access to private computer and telecommunications systems in the pursuit of criminal investigations, for example, obviously have the potential to compromise the confidentiality of private and commercial information, while moves to make money laundering more difficult by imposing more stringent reporting requirements on financial institutions mean additional administrative burdens that may both compromise commercial confidentiality and – for the less scrupulous – lead to a loss of business (Grabosky and Smith, 1998, pp. 196–209; European Commission, 2001, p. 21). Nevertheless, perceptions that international financial crime is increasing would be expected to lead to at least some further internationalization of law enforcement in this area.

9.4 Test

The close connections between the expansion of trade, the internationalization of production and the internationalization of finance mean that it is not surprising that some of the policy implications of one of these king trends are also policy implications of one or both of the other two. For this reason the policy implications of these three king trends are consolidated into a list of eight distinct propositions about the future of public policy, namely that we should expect:

1. More business-friendly policies in areas such as inflation, infrastructure, education, financial aid, R&D, product market regulation, tax, labour costs, labour flexibility and environmental regulation (all three king trends)
2. Greater international cooperation to limit locational competition by means of establishing minimum international standards in relation to labour law, taxation and environmental regulation (expansion of trade and internationalization of production)
3. More vigorous measures to help workers displaced by structural adjustment by means such as help with job search, relocation and retraining, plus the provision of financial assistance (expansion of trade and internationalization of production)
4. More vigorous efforts to open foreign markets (expansion of trade)
5. More TNC-friendly policies, such as further liberalization of national and international investment regulation and expansion of targeted assistance and incentives for inward FDI (internationalization of production)
6. Support for further financial liberalization (internationalization of finance)
7. More vigorous measures to prevent financial crises and minimize their impact when they do occur (internationalization of finance)
8. More vigorous measures to combat international crime such as illicit trafficking and international financial crime (all three king trends).

The proposition that the internationalization of production will lead to more vigorous efforts to counter transfer pricing by TNCs is not included because lack of adequate evidence means that it has not been possible to test this idea.

If the expansion of trade and the internationalization of production and finance do have the effects listed above, then the fact that these three king trends have already been operating for decades means that these policy trends should already be in evidence.

Let's see if this is the case.

1. More business-friendly policies in general

Although lack of adequate evidence means that it was not possible to test all of the different aspects of this policy implication, it was possible to test some of them.

1.1 More vigorous measures to control inflation expectations via establishing/maintaining appropriate institutions and policies

Low inflation is obviously a competitive advantage for countries seeking to maximize exports and home sales of home-produced products and services, attract and keep foreign investments and avoid punishment by international financial markets. Perhaps the most obvious way in which public authorities can try to restrain wage and price rises is to raise interest rates in order to reduce the capacity of employers to raise prices or wages. Because elected governments that do this risk a loss of electoral support due to the fact that higher interest rates reduce spending power in the economy and tend to lead to rising unemployment, however, interest rates are more likely to be raised, other things being equal, if governments delegate decisions to an independent central bank, as this means that the blame can be deflected onto officials whose positions cannot be threatened either by the electorate directly or by the elected government. That is, interest rates controlled by independent central banks are more likely to be raised in response to wage or price rises that are considered to be excessive than are interest rates controlled by elected governments, other things being equal, which means greater downward pressure on wages than would otherwise be the case. For this reason we would expect a trend towards more pro-business policies to include a trend towards granting independence to central banks. The hypothesis to be tested, therefore, is that *in recent years there has been a trend in the 12 test countries towards granting independence to central banks.*

As pointed out in relation to the growth and diversification of production and consumption, this is exactly what we see: 9 of the 12 test countries participated in the third stage of Economic and Monetary Union (EMU) in 1999, which among other things involved the creation of an independent European Central Bank complete with inflation target and requirements that budget deficits be restricted to a maximum of 3 per cent of GDP and debt to a maximum of 60 per cent of GDP (European Commission, 2005a), while the central banks of both Denmark and Sweden have long been independent and the Bank of England was made independent in 1997 (Scheller, 2006, p. 25; Danmarks Nationalbank, 2008; Riksbank, 2008).

This hypothesis is therefore *confirmed.*

1.2 More vigorous steps to improve education and training

Since having a sophisticated workforce is a competitive advantage, but companies are reluctant to invest much in education and training themselves because competitors might poach employees they have spent time and money training, more vigorous steps by governments to improve education and training clearly constitute a pro-business policy. Among other things this implies an upwards trend in public spending on education. The hypothesis to be tested, therefore, is that *in recent years education spending has increased in the 12 test countries*.

As we saw in relation to the growth of production and consumption, public expenditure on educational institutions increased in real terms between 1995 and 2004 in all 11 of the test countries for which data is available (Belgium is the exception), and increased as a percentage of total public spending in 10 of the 11 test countries for which information is available (OECD, 2007a, Table B3.1 column 11, Table B4.1 columns 3 and 4). This hypothesis is therefore *confirmed.*

1.3 Deregulation of product market regulation

If public policy is becoming more business-friendly, then among other things we would expect a relaxation of product market regulation, defined as state control (public ownership, involvement in business operations), barriers to entrepreneurship (regulatory and administrative opacity, administrative burdens on start-ups, and barriers to competition) and barriers to trade and investment (foreign ownership barriers, discriminatory procedures, tariffs and regulatory barriers) (Conway, Janod and Nicoletti, 2005, p. 8). The hypothesis to be tested, therefore, is that *in recent years there has been a trend towards relaxation of product market regulation in the 12 test countries.*

OECD evidence indicates that between 1998 and 2003 product market regulation overall was relaxed in all 12 test countries in all three respects. Reductions in state control mainly took the form of easing or eliminating command-and-control measures and price controls and reducing state interference in the decisions of public and private enterprises rather than outright privatization. Removal of barriers to trade and investment reflects the fact that many of these regulations are determined by multilateral agreements and/or supranational institutions. Barriers to entrepreneurship also fell, but not by much. In general it was the most highly regulated countries (which include France, Italy and Spain) that deregulated (Conway et al., 2005, pp. 13–19).

This hypothesis is therefore *confirmed.*

1.4 Cuts in business taxes

One way in which governments can assist firms to increase their profits is to cut taxes on business. The most obvious specific business-friendly policy implication here is that rates of taxes on the profits of firms will gradually fall over time. Although one might also expect employers' social contributions to be reduced, any pressure in this direction is likely to be countered by the tendency of population ageing, another king trend, to lead to increasing spending on pensions and thereby to increasing pressure for social security contributions to be raised in order to offset the consequent tendency of pension finances to go into the red. The specific hypothesis to be tested here, therefore, is that *in recent years rates of corporate tax in the 12 test countries have been cut.*

Between 1980 and 2008 (2002 for Finland and Germany) the top rate of corporate tax levied by central government on domestic companies fell in 11 of the 12 test countries (see Table 9.1). The same is true for the period 1990–2008, and even over the short period 2002–2008 corporate tax rates were cut in 8 of the 10 test countries for which adequate data is available. Although the listed rates do not necessarily apply to non-resident or foreign firms, the incentive for governments to cut rates of corporate tax is not just to attract foreign firms but also to retain the investment of firms currently classified as domestic, so the logic underlying the hypothesis still applies. These cuts in corporate tax rates were often financed, at least in part, by measures to broaden the corporate tax base. Such reforms benefit TNCs in particular, as it is the more profitable firms that tend to be the most internationally mobile

Table 9.1 Top corporate tax rates (per cent), 1980–2008

	1980	1990	2002	2008
Austria	55	30	34	25
Belgium	48	41	39	34
Denmark	40	40	30	25
Finland	43	25	29	26
France	50	37	33.3	33.3
Germany	56	50	25	30
Ireland	45	43	16	12.5
Italy	25	36	36	27.5
Netherlands	48	35	34.5	25.5
Spain	33	35	35	30
Sweden	40	40	28	28
United Kingdom	52	35	30	28

Data for 1980–2002 refer to the top marginal tax rate on corporations. Unless otherwise mentioned, this is the tax rate applicable at the federal level on domestic companies. Different rates apply on non-resident/foreign-owned companies. Provincial and local governments may levy additional taxes. The effective corporate tax rate may be higher due to the imposition of corporate level taxes on dividend or other distributions. Between 1994 and 2001, the corporate tax rate in Belgium was increased by a 3 per cent crisis tax levied on the 39 per cent corporate tax, making the effective tax rate 40.17 per cent. In 2001–02 surcharges were imposed in France and Germany. European Commission data refers to 'the statutory corporate tax rate'. Figures match at 2002 apart for minor discrepancies for Finland and Germany.
Source: World Tax Database (2006); European Commission (2008g), Part III.

and revenue-neutral rate cutting and base broadening have the effect of reducing the tax rate on highly profitable projects while raising it on less profitable projects (World Tax Database, 2006; Swank and Steinmo, 2002, p. 643, Eurostat, 2006c, pp. 33–4, 101–201; OECD, 2004, pp. 156–8; Devereux et al., 2002).

This hypothesis is therefore *confirmed.*

1.5 Reforms to employment regulation designed to increase labour flexibility

Another of the factors that contributes to business success is the efficiency and effectiveness with which employees are organized and deployed. While this is in part controlled by employers, their freedom of action in this respect is limited by the provisions of employment regulation designed to protect employees from unscrupulous bosses, such as employment protection legislation (EPL), legislation relating to working conditions and working hours, and legislation relating to the reconciliation of work and family life. For this reason reforms to employment regulation designed to increase labour flexibility constitute a business-friendly policy.

In some cases, however, as pointed out in relation to the growth and diversification of production and consumption, other king trends imply that there will be a trend towards *strengthening* these types of regulation. In particular, as we shall see later in the book, the logic of policy network theory suggests that the tendency of population ageing to reduce the relative size of the working-age population increases pressure on governments to take steps to expand employment by means including making employment more attractive to women by strengthening regulation designed to facilitate reconciliation of work and family life. This means that policy network theory has no determinate prediction as to whether this type of employment regulation will be strengthened or weakened. As this consideration does not apply to employment protection legislation, however, this type of employment regulation is expected to weaken as time goes on. The hypothesis to be tested is therefore that *in recent years there has been a trend in the 12 test countries towards a weakening of employment protection regulation.*

As pointed out earlier in relation to the growth and diversification of production and consumption, the available evidence indicates that this is indeed the case, as an OECD study that specifically investigates the direction of recent changes to employment regulation reveals that between the late 1980s and the late 1990s employment protection legislation as measured was liberalized in nine of the test countries and tightened in just three (OECD, 2004a, p. 117).

This hypothesis is therefore *confirmed.*

2. Greater international cooperation to limit locational competition

In some instances the implementation of more business-friendly policies can create problems for democratic governments. Competing with other countries for business investment and markets by progressively reducing taxes on business would, if taken far enough, eventually undermine state revenue, while weakening labour and environmental standards risks loss of popularity. This creates incentives for governments to limit this type of competition by reaching international agreements that establish common minimum standards in relation to business taxes and labour and environmental standards. Even governments that are keen to compete in this way are unlikely to want to eliminate business taxes and labour and environmental standards altogether. For this reason the logic of policy network theory suggests that in general governments will both compete on low standards and try to establish floors for these standards. If so, the fact that trade has been expanding for decades alongside the progressive internationalization of production implies that governments have already been trying to establish minimum international standards in this area where they don't already exist, as well as trying to raise these standards, widen their application and improve their implementation where they do already exist.

2.1 Minimum standards in relation to business taxes

The hypothesis to be tested here is that *in recent years the 12 countries have participated in strengthening international agreements on minimum rates of taxes on business.*

In fact there is no sign of any such trend at global level, or at the EU level apart from the long-standing agreement on a minimum standard rate of VAT of 15 per cent (European Commission, 2008h). Moves at EU level to harmonize corporate tax have so far come to nothing despite the fact that the continued existence of separate national corporate tax systems potentially undermines state revenue by creating incentives for governments to compete for investment by offering lower corporate tax rates or special regimes and by enabling companies to exploit differences between systems to reduce their tax bills via transfer pricing (Bond et al., 2000). The European Commission has been pushing for various forms of tax harmonization for decades, including proposing a directive in 1975 that included aligning rates of corporate tax and withholding taxes on dividends, but the requirement that EU legislation in this field must be approved by all member states, combined with the opposition to such measures of countries such as Britain, has meant that the only result so far is a non-binding Code of Conduct on business taxation that does not cover corporate tax rates or general aspects of corporate tax bases but is rather directed at restricting 'measures which unduly affect the location of business activity by being targeted merely at non-residents and by providing them with more favourable tax treatment than that which is generally available in the member state concerned' (Chetcuti, 2001; European Commission, 2006c, 2006d).

This hypothesis is therefore *disconfirmed.*

Before accepting this disconfirmation at face value, however, it is necessary to check the test procedure and the derivation of the hypothesis in case either is flawed, as prescribed in these circumstances by the methodology set out in Chapter 5, because discovery of any significant flaw could mean that this disconfirmation is of no consequence.

One possible problem with the test procedure is that the unanimity requirement for action at EU level in this area means that it is possible that moves to harmonize business taxes have been blocked even though nine or more of the test countries were in favour. Unfortunately, however, reliable information on the attitudes of all test countries in relation to initiatives to harmonize business taxes is not available. In the absence of this information, acceptance of the proposition that failure to agree does not necessarily disconfirm the hypothesis would mean that the hypothesis is not falsifiable. It would follow from this that not only this hypothesis but also all other hypotheses relating to international agreements would have to be removed from this study, since the same logic applies to them as well.

The alternative option, and the one adopted here, is to accept that failure to agree at the international level does indeed disconfirm relevant hypotheses despite the fact that this imposes a much tougher criterion for confirmation than the standard one of consistency with relevant policy trends in 9 out of 12 test countries, namely, that all countries involved must agree whether they are a test country or not. This means that the above disconfirmation stands.

If we turn to the hypothesis itself, however, it becomes evident that its derivation is in fact flawed, as it is based on a false premise.

Recall that the logic of this derivation holds that governments will want to limit tax competition because they fear that it will undermine tax revenue. Otherwise why worry? In the case of corporation tax in Europe, however, the losses of revenue that would be expected to have accompanied past tax competition in this area have not materialized: despite the fact that between 1990 and 2001 rates of corporate tax were cut in 8 of our 12 test countries, over the nearly identical period between 1990 and 2003 corporate tax revenue rose as a percentage of GDP in exactly the same proportion of countries (World Tax Database, 2006; OECD, 2006e).

Why has this occurred? There appear to be two main reasons. First, a number of studies indicate that in recent years governments have balanced cuts in corporate tax rates with measures to broaden the legal definition of the tax base. Between 1981 and 1995, for example, a number of our 12 test countries eliminated a range of investment credits, exemptions and grants that had lowered effective tax rates on reinvested profits (Swank and Steinmo, 2002, p. 643), and since the mid-1990s several countries at least partly financed cuts in corporate tax rates by restricting special incentive schemes and tax allowances for depreciation of capital equipment (Eurostat, 2006c, pp. 33–4, 101–201; OECD, 2004, pp. 156–8). Furthermore, between 1982 and 2001 eight of the 11 test countries for which information is available cut their allowance rates for investment in plant and machinery, while the remaining three kept their allowances constant (Devereux, Griffiths and Klemm, 2002, Figure 3).

The second reason why revenue from corporate tax has been rising despite cuts in tax rates is that corporate profits have been rising sharply: between 1993 or 1995 (depending on the country) and 2003 the unweighted average of gross corporate operating surplus as a percentage of GDP rose in all but one (Sweden) of the 10 test countries for which data is available (OECD, 2006b, 2006c).

What this increase in corporate tax revenue means is that the main incentive cited in the derivation of the hypothesis for governments to seek harmonization of corporate tax rates, namely fear of loss of revenue, is missing. In these circumstances the application of policy network theory to king trends does not in fact generate the hypothesis that governments would be expected to move to harmonize corporate tax. For this reason its disconfirmation is of no consequence and should be disregarded.

2.2 Minimum labour standards

The hypothesis to be tested here is that *in recent years the 12 test countries have participated in strengthening international agreements on minimum labour standards*.

Although there has been little if any progress towards establishing enforceable minimum labour standards at a global level, the EU has moved some way towards establishing EU-wide minimum labour standards by establishing a body of EU-wide employment regulation in areas such as health and safety, working time, and fixed-term and temporary employment. More specifically, since 1990 the EU has adopted directives obliging employers to inform employees of the conditions applicable to the contract or employment relationship and to end discrimination against fixed-term contract workers, as well as directives that regulate the posting of workers in the framework of the provision of services, implement the framework agreement between the social partners on part-time work aimed at ending discrimination against part-time workers, and raise minimum safety and health requirements in relation to daily rest periods, breaks, weekly working time and rest, annual leave and certain aspects of night work and shift work (Europa, 2003; European Foundation, 2006, pp. 3–4).

At global level there is already a substantial body of international labour standards agreed under the auspices of the UN's International Labour Organization (ILO) in relation to labour rights such as freedom of association, the right to organize, collective bargaining, the abolition of forced labour, and equality of opportunity and treatment. New conventions continue to be passed, and the 12 test countries continue to ratify them (ILO, 2005, 2005a, 2006; WTO, 2006a). The problem, however, is that ILO conventions are not enforceable in the way that trade rules, for example, can be enforced by the WTO, and developing countries have blocked an initiative by several developed countries to remedy this by enabling trade action to be used to put pressure on countries that violate core labour rights, on the grounds that this would be an excuse for protectionism and is in fact a bid by rich countries to undermine the comparative advantage of low-wage countries (WTO, 2006).

Nevertheless, it is the case that the 12 test countries have participated in a trend towards the establishment of binding international labour standards, albeit only at EU level. This hypothesis is therefore *confirmed*.

2.3 Minimum environmental standards

The hypothesis to be tested here is that *in recent years the 12 test countries have participated in strengthening international agreements on minimum environmental standards*.

It seems clear that this is the case. The increasing extent of EU-level environmental regulation is itself evidence of increasing international cooperation in this area. Since 1990 the EU has continued to strengthen environmental regulation with a series of directives that have tightened regulation of air pollution, water pollution, noise, waste (for example end-of-life vehicles, and electrical and electronic equipment) and product labelling, while a directive passed in 2004 provides for the repair of damage caused to the environment by the person responsible for the damage. In addition, since 1990 the EU itself has become party to a number of significant international environmental agreements, such as the UN Conventions on Biological Diversity and on Climate Change, the Kyoto Protocol, and the Cartagena Biosafety Protocol (SCADPlus, 2006).

This hypothesis is therefore *confirmed*.

3. More vigorous measures to help workers displaced by structural adjustment

If trade expansion and the internationalization of production are exerting pressure on governments to implement more vigorous measures to help workers displaced by the effects of these king trends on the labour market, then among other things we would expect moves to strengthen active labour market policy. The hypothesis to be tested is therefore that *in recent years measures designed to increase the effectiveness of active labour market policy have been introduced in the 12 test countries*.

Reforms designed to increase the effectiveness of active labour market policies took place between 1994 and 2004 in all 12 test countries even though spending in this area is trending down as a proportion of GDP. These reforms include increasing evaluations of individual job-seekers (Belgium, Britain, Denmark, Finland, France, Germany, Ireland, the Netherlands and Sweden), increasing job-search monitoring (Austria, Britain, Denmark, Finland, Germany, the Netherlands and Sweden), introducing or expanding profiling and/or individual action plans (Austria, Belgium, Britain, Denmark, Finland, France, Germany, Ireland and the Netherlands), expanding cooperation between, or integration of, public employment services and benefit administration (Belgium, Britain, Denmark, Finland, France and Germany), introducing competition into the provision of public employment services via contestability of placement (Germany, Italy and the Netherlands), contracting out the administration of active labour market policies (Denmark and the Netherlands), using active labour market policies as a work availability test (Spain), using participation in active labour market policies as a means of instigating the early activation of job-seekers (Belgium, Finland, France, Germany, Ireland and the Netherlands), and making participation compulsory (Britain, Denmark and Sweden) (European Commission, 2006i, Context Indicator 19.9; OECD, 2006a:, pp.69–70).

Furthermore, between 1994 and 2004 all 12 test countries also introduced measures designed to strengthen the incentives for the unemployed to get a job. These included lowering replacement rates for unemployment benefits (Denmark, Ireland and Spain); shortening the duration of unemployment benefits (Britain, Belgium, Denmark, France, Germany and the Netherlands); tightening work availability conditions by means such as restricting the scope for the unemployed to reject job offers and applying sanctions more systematically where unemployed people fail to comply (Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Spain and Sweden); making benefits conditional on training (Britain, Denmark, Finland, Italy and Sweden); restricting eligibility conditions (Austria, Belgium, Denmark, Finland, the Netherlands and Sweden); introducing waiting periods (Austria, Finland and Sweden); and reducing work disincentives by means such as permitting benefits and work earnings to be combined for limited periods or lowering withdrawal rates as earnings rise (Austria, Belgium, Denmark, Finland, France, Ireland and Spain) (OECD, 2006a, pp. 57–8).

It is noticeable that many of these measures do not constitute help in the sense of making the lives of displaced workers easier. In fact imposing more restrictive conditions on unemployment benefits is explicitly designed to make life harder to strengthen incentives to look for, and accept, jobs. Nevertheless, such measures do constitute help in that they are designed to get displaced workers into jobs sooner than would otherwise be the case, and as such constitute additional moves to make active labour market policy more effective.

It seems clear that there have been frequent moves by the 12 test countries in recent years to make active labour market policy more effective. This hypothesis is therefore *confirmed*.

4. Greater efforts to open up new markets in foreign countries

The increasing importance of exports for economic prosperity adds to the economic and electoral incentives for governments to assist exporters to increase sales by pressing harder for foreign markets to be opened. The hypothesis to be tested, therefore, is that *in recent years the governments of the 12 test countries have taken steps to open up new foreign markets for their exports*.

This can hardly be in doubt. Opening markets in Europe has been central to European integration from the beginning. In recent years there has been a concerted effort by EU member states collectively to remove barriers to trade in the context of the programme launched by the 1986 Single European Act (SEA) to establish a Single Market by 1993, this being defined as 'an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured' (European Commission, 2007a). Between 1986 and 1992 the EU adopted nearly 280 items of legislation designed to open national markets and in so doing create the Single Market (European Commission, 2008i). Since then the Single Market has been extended into new sectors, such as energy and financial services (European Commission, 2002a, pp. 4, 10). For those test countries that were not members of the EU in 1986, joining the EU constitutes, among other things, a move to obtain better access to markets in other European countries.

The 12 test countries along with other EU member states have also worked consistently via the European Commission to open markets in countries outside the EU. One aspect of this has been the signing of a number of major multilateral agreements, under the aegis of the General Agreement on Tariffs and Trade (GATT) and its successor the World Trade Organization (WTO), that are designed to open markets worldwide. These include a raft of agreements concluded in 1994 at the end of the Uruguay Round negotiations which included the General Agreement on Trade in Services (GATS), the Agreement on Trade-Related Aspects of Investment Measures (TRIMS) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), as well as major amendments to the GATT agreement itself (WTO, 2008a). The EU has also pressed hard in the Doha round of negotiations that started in 2001 for markets in other countries to be opened further (European Commission, 2005d). Similar demands have been made in other trade negotiations, such as those with other countries in the Mediterranean region (European Commission, 2005e).

This hypothesis is therefore *confirmed*.

5. Policies that favour TNCs in particular

Perhaps the most obvious type of policies that favour TNCs in particular, as distinct from purely domestic companies, are those that make it easier for them to move investment between countries. The hypothesis to be tested here, therefore, is that *in recent years the 12 test countries have participated in liberalizing the regulation of foreign direct investment (FDI).*

It seems clear that there has indeed been such a trend.

Within the EU, the Single Market process facilitated the movement of investment among member states by lifting capital controls, allowing businesses approved in one member state to set up in other member states without acquiring a new license, and facilitating cross-border portfolio investments, while the introduction of the single currency in 1999 eliminated intra-EU currency risk (Krogstrup, 2003, p. 1). The proliferation, growth and spread of TNCs has also been made easier by the removal of barriers to foreign ownership and by privatizations that opened previously public firms to foreign control (OECD, 2003e, pp. 171–2).

At global level the 1994 TRIMS agreement, to which all test countries are signatories, limited the range of policy measures that may be used by governments to influence flows of investment, for example by prohibiting them from requiring particular levels of local procurement by TNCs (WTO, 2005; European Commission, 2000).

In addition, between 1990 and 2007 (2006 for Belgium), all 12 test countries signed at least one bilateral investment treaty. These are agreements designed both to promote and protect investment, and typically cover the scope and definition of foreign investment, admissions and establishment, national treatment in the post-establishment phase, most-favoured-nation treatment (which means that firms from both countries must be treated equally), guarantees and compensation in the event of expropriation, guarantees of free transfers of funds and repatriation of capital and profits, and dispute settlement provisions between states and between investors and states (Raines, 2004, pp. 121–3; UNCTAD, 2003, pp. 19–21, 36; UNCTAD, 2008c, 2008d). This stress on liberalization of FDI regulation was also reflected in domestic law: of the 1,640 changes by 165 countries in their laws regulating FDI between 1991 and 2002, for example, 95 per cent were in the direction of greater liberalization (UNCTAD, 2003, p. 20).

It is clear that in recent years the 12 test countries have in fact participated in the liberalizing of regulation relating to FDI. The fact that this is just as consistent with the proposition that liberalization of FDI regulation is a cause of the internationalization of production as well as, or instead of, a consequence does not change the fact that the finding is in line with the hypothesis being tested (see ch. 5 for details of how the problem of endogeneity is handled in this study). This hypothesis is therefore *confirmed*. Efforts to check the direction of causation must await another occasion.

6. Support for further financial liberalization

If, as policy network theory suggests, the internationalization of finance leads governments of the 12 test countries to support further liberalization of regulation of international finance, except to the extent that this substantially increases the perceived risk of financial crises or financial crime, the fact that finance has been internationalizing for decades implies that this international financial liberalization has been in progress for some time. The hypothesis to be tested, therefore, is that *in recent years the 12 test countries have participated in liberalizing the regulation of international finance apart from prudential regulation and relevant criminal law.*

There is in fact a long history of moves in this direction in addition to the liberalization of investment regulation described in the previous section.

Within the EU, the First Bank Directive in 1977 allowed banks based anywhere in the EU to set up branches or subsidiaries in any Member State, the Second Bank Directive in 1988 established a single EU banking license, and the Investment Services Directive provided for non-banking securities firms based in the EU to be regulated by their home country and to operate anywhere within the EU on that basis. By the early 1990s capital movements within the EU were completely liberalized, as mentioned earlier, and in 1992 a provision guaranteeing freedom of movement of capital was included in the Maastricht Treaty. The replacement of national currencies by the euro means, among other things, that pension funds and other important financial institutions that had been restricted to domestic currency investments are now able to invest in assets anywhere in the EU. And the Financial Services Action Plan agreed in 1999 set out further measures that have been progressively implemented in order to further the integration of the European market in financial services (OECD, 2003, pp. 171–2; Walter and Smith, 2000, pp. 40–1, 82–3, 99; European Commission, 2004b, 2008j, 2008k, pp. 42–3).

At global level the main move to liberalize the regulation of international finance took place in 1997 when a 'major negotiating objective' of the EU was achieved with the addition of financial services to the sectors covered by the General Agreement on Trade in Services (GATS), as this obliges signatory countries to permit foreign financial institutions to establish a commercial presence in their country, expand current operations and maintain existing shareholdings in these operations (European Commission, 2004f).

It seems clear that financial liberalization has been proceeding for some time, especially within the EU. The fact that this is probably as much a cause as a consequence of financial internationalization does not alter the fact that the finding is in line with the predictions of the hypothesis. This hypothesis is therefore *confirmed*. Further investigation must wait.

7. More vigorous measures to prevent international financial crises and minimize their impact when they do occur

One means of reducing the likelihood of financial crises, and of minimizing their impact when they do occur, is to strengthen international prudential regulation of finance. The hypothesis to be tested, therefore, is that *in recent years the 12 test countries have participated in the strengthening of international prudential regulation of finance.*

Since the end of Bretton Woods in the early 1970s the centre for international regulation of finance has been the Bank of International Settlements (BIS) and in particular one of its expert committees, the Basel Committee on Banking Supervision (BCBS). This is made up of central bankers and bank regulators from the G10 countries plus Luxembourg, and includes in its number eight of the twelve test countries (Belgium, Britain, France, Germany, Italy, Netherlands, Spain and Sweden). The Basel Accord of 1988 between G10 countries, which set minimum capital adequacy standards for banks in order to reduce the risk of bank collapse, was widely implemented around the world. This was updated and strengthened in 2004 by the Basel II capital adequacy framework, which in turn was strengthened in 2008. However international regulation of other areas of finance is weaker, as agreements reached through the International Organization of Securities Commissions (IOSCO) and other public and private organizations are generally rather vague and undemanding (BIS, 2004, 2008a; Porter, 2005, pp. 31–6, 59–70, 80–1).

Within the EU, compliance with EU Directives and Basel principles has led to substantial harmonization of prudential regulation of banks, a partial convergence of prudential regulation of securities markets, some minimum standards in relation to insurance, fairly consistent accounting regulation and, in 2002, a new organizational framework for financial regulation, supervision and stability (Flockton, Grout and Yong, 2004, pp. 143–4, 151; European Commission, 2004h; ECOFIN, 2002; European Commission 2008k, p. 43).

Although the financial crisis of 2008 demonstrated that this gradual tightening of prudential regulation of international finance was completely inadequate, the fact remains that there was a trend in this direction. For this reason this hypothesis is *confirmed.*

8. More vigorous measures to combat international crime

As there is no obvious single and comprehensive indicator of more vigorous measures to combat international crime overall, this section sets out the results of testing two more specific hypotheses, namely that governments have been implementing more vigorous measures against trafficking in people and goods, and that there has been a steady increase in international cooperation designed to combat financial crime.

8.1 More vigorous measures against trafficking of people and goods

Perhaps the most obvious means of reducing the extent of illegal trafficking of people and goods is to take steps to tighten border controls. As border checkpoints between EU member states have been abolished as part of the process of European integration, this essentially means tightening controls on the external border between the EU and non-EU countries. Since Europol reports that tightening border controls in the sense of increasing the incidence of stop and search is not an option because this would create bottlenecks ‘with cascading effects on traffic, backlog, access points, waiting times, delays in deliveries, decaying goods and so on’ (Europol, 2007, p. 22), however, the proposition to be tested is that *in recent years there have been moves in, or involving, the 12 test countries to tighten control of the external border of the EU by means other than increasing the incidence of stop and search.*

Although comparable data on national laws and practices relating to border controls does not appear to be readily available for the 12 test countries, information on decisions at European level indicate as noted in ch. 6, that moves to tighten the security of the EU’s external borders were being made even before the attack on the World Trade Centre in New York on 11 September 2001 (9/11) led to a sharp increase in concern about the possibility of attacks within Europe. In 1992 the Maastricht Treaty made customs and police cooperation a formal constituent of the EU Treaties (European Commission, 2008a). In 1995 the Schengen Information System was established for the use of state agencies such as police departments and immigration offices. Among other things this database, which is supplemented by a network of national databases, holds checkable information on criminals, previous asylum applications, stolen cars and other stolen property, extradition, third-country nationals refused entry to the EU, and individuals subject to a European arrest warrant or under surveillance for criminal activity. It is currently in the process of being upgraded to include the EU’s new member states and to improve technical features, for example by enabling the inclusion of biometric data such as fingerprint and photographic data (European Commission, 2005; JSA, 2003; JSA, nd; House of Lords European Union Committee, 2007). A Customs Information System was also established in 1995, consisting of a central database accessible via terminals in each member state. Among other things the exchange of information among national immigration and customs authorities that this facilitates reduces the likelihood that people or goods refused entry at a part of the external border controlled by one member state will be able to enter the EU through a part of the border controlled by a different member state (JSA, nd; European Commission, 2006k). In 1997 member states agreed to establish a Convention on Mutual Assistance and Cooperation between Customs Administrations of Member States aimed, among other things, at preventing, detecting, prosecuting and punishing infringements of EU and national customs provisions concerning drugs, weapons, cross-border traffic in taxable goods to evade tax or to obtain unauthorized state payments, and illegal goods in general. This Convention, which is in the process of ratification, requires national customs authorities not only to provide assistance to each other in the form of information but also to permit the customs administrations of other member states to enter their territories for the purposes of hot pursuit of individuals committing infringements, surveillance of individuals and suspicious or illicit consignments of goods, and covert investigations (European Commission, 2008b; Council of the European Union, 1997).

Moves to tighten controls on entry to the EU subsequent to 9/11 include the introduction in 2002 of a Common Manual on rules and procedures to be followed at external borders (Euractive, 2006), the establishment of a common visa system in 2004 (European Commission, 2004c), and the creation in 2005 of an EU External Borders Agency to improve the management of the external borders of the EU by means such as improving coordination between member states, developing a common integrated risk assessment model, preparing specific risk assessments, and helping member states train their national border guards (Europa, 2008). In 2005 a security amendment to the Customs Code introduced new measures to tighten security around goods crossing international borders, namely a requirement for traders to provide authorities with information on goods prior to import or export, and a mechanism for setting uniform risk-selection criteria for controls, supported by computerized systems and new non-intrusive inspection equipment that uses X-ray and gamma ray technologies to provide visual images of containers' contents (European Commission, 2006j, 2008).

There have also been moves to require member states to impose an obligation on carriers to collect information on passengers for the relevant national authorities, in order to improve border controls and combat illegal immigration (Directive 2004/82/EC). Another decision in 2004 requires all newly-issued EU passports to contain digital facial images and biometric fingerprints by the end of 2007 (Euractive, 2006), while in June 2007 agreement was reached on the creation of the Visa Information System, a database that makes information on every visa application available to law enforcement and security agents across the EU (European Commission, 2007e).

It is clear that EU member states collectively, including the 12 test countries, have been taking steps to strengthen border controls. This hypothesis is therefore *confirmed*.

8.2 More vigorous measures to combat international financial crime

The hypothesis to be tested here is that *in recent years there has been an increase in the extent of the participation of the 12 test countries in international cooperation designed to combat international financial crime.*

It is clear that this has been happening in the form of increasing cooperation on law enforcement in general as well as cooperation targeted at financial crime in particular.

To some extent law enforcement within the EU has already been internationalized with the creation of Europol in 1992, a gradual expansion in its activities since then, and strengthening of its mandate in 2002 to deal with all serious forms of international crime; the establishment in 2002 of a network of judicial national authorities (Eurojust); the setting up of EU-wide databases such as the Schengen Information System; and EU framework decisions designed to establish common definitions and penal sanctions for cybercrime, which often involves financial crime. EU Directives designed to combat money laundering in particular were passed in 1991, 2001 and 2005 (Europol, 2008a; Eurojust, 2008; Euractive, 2005; Directive 2005/60/EC). In 2000 the way was opened for cooperation between national financial intelligence units, and this was followed by EU legislation on identifying, tracing, freezing and confiscating criminal assets and the proceeds of crime (European Commission, 2004c, p. 18), while the Council of Europe's Convention on Cybercrime of 2001 requires signatories to establish a rapid and effective system for international cooperation, including permitting law enforcement agencies in one country to collect computer-based evidence for those in another (COE, 2001).

At a broader international level, all 12 test countries have signed the non-binding but widely accepted Forty Recommendations of the Financial Action Task Force on Money Laundering (FATF) established by the G7 in 1989. Among other things these specify that signatory countries must make money laundering a criminal offence and require financial institutions and others to identify customers, retain identification data and transactions records for at least five years, pay attention to all complex, large and unusual patterns of transactions that have no apparent economic or visible lawful purpose, and report any suspicions. Signatories are also required to ensure that financial institutions are subject to adequate regulation and supervision and that law enforcement authorities have adequate resources and the power to conduct inspections, compel production of records held by financial institutions, search persons and premises, and seize evidence (FATF, 2003, p. 8; FATF, 2003a).

It seems clear that international efforts involving the 12 test countries to combat financial crime have in fact been increasing. This hypothesis is therefore *confirmed*.

9.5 Conclusions

In this chapter policy network theory has been used to derive the main implications for the future of public policy of the expansion of trade and the internationalization of production and finance. No fewer than 15 hypotheses based on these policy implications were then tested. These hypotheses posit that in recent years the 12 countries included in the test have:

1. Participated in a trend towards granting independence to central banks.
2. Increased public spending on education.
3. Relaxed product market regulation.
4. Cut rates of corporate tax.
5. Weakened employment protection legislation.
6. Participated in strengthening international agreements on minimum rates of taxes on business.
7. Participated in strengthening international agreements on minimum labour standards.
8. Participated in strengthening international agreements on minimum environmental standards.
9. Introduced measures designed to increase the effectiveness of active labour market policy.
10. Taken steps to open up new foreign markets for their exports.
11. Participated in liberalizing the regulation of foreign direct investment.
12. Participated in liberalizing the regulation of international finance, apart from prudential regulation and relevant criminal law.
13. Participated in the strengthening of international prudential regulation of finance.
14. Participated in tightening control of the external border of the EU by means other than increasing the incidence of stop and search.
15. Participated in increasing international cooperation designed to combat international financial crime.

Just one of these was disconfirmed, namely the hypothesis that posited that the test countries have participated in strengthening agreements on minimum rates of taxes on business. Further investigation, however, revealed that the main premise on which its derivation was built, namely the proposition that past cuts in rates of corporate have led to cuts in revenue from corporate tax, is false. This means that this hypothesis does not in fact logically follow from the application of policy network theory to king trends, and that its disconfirmation should therefore be disregarded.

The essential result, then, is that all 14 correctly derived hypotheses were confirmed.

10
Sex and Secularization

10.1 Introduction

It may seem strange to group together sexual liberalization and secularization, but the Christian churches that have dominated religion in Europe for two millennia take a great deal of interest in sex, and it turns out that the testable policy implications are the same for both trends.

For the sake of narrative convenience, the chapter begins with the trend towards more liberal sexual attitudes and less constrained sexual behaviour.

10.2 Sexual liberalization

1. Description

It is widely held that in recent decades there has been a sexual revolution. Despite the biological and emotional centrality of sex to the lives of all of us, however, reliable internationally comparable time-series evidence about trends in mass sexual behaviour and attitudes towards sex is hard to find. For this reason this section necessarily focuses on those sexual trends for which reasonable evidence does exist for a significant number of the 12 test countries. This reveals a long-term process of sexual liberalization in the sense of people having sex earlier, with more people over the course of their lifetimes, using more varied sexual positions and techniques, and increasingly outside the confines of marriage. People are also becoming more tolerant of sexual activity in general and of homosexuality, premarital sex and cohabitation in particular.

To identify trends in sexual behaviour and attitudes I rely mainly on information collected for the country chapters of the *International*

Encyclopaedia of Sexuality built up between 1997 and 2004 (Francoeur, 1997–2001, 2004). The 11 test countries covered comprise Austria (Perner, 2001), Britain (Wylie et al., 2004), Denmark (Graugaard et al., 2004), France (Meignant et al., 2004), Finland (Kontula and Haavio-Mannila, 2001), Germany (Lautmann and Starke, 2001), Ireland (Kelly, 2001), Italy (Wanrooij, 2001), the Netherlands (Drenth and Slob, 2001), Spain (Nieto et al., 2001) and Sweden (Trost and Bergstrom-Walan, 2001). The following account is based on these country chapters except where indicated otherwise.

1.1 Sexual behavior

First, there is substantial evidence that sexual activity is starting earlier. In four of the five test countries for which information is provided (Britain, Finland, Germany and Italy) the age of first heterosexual intercourse is reported to be falling, although it is possible that this trend may be flattening out, as surveys in Denmark found that after 1980 no further decrease in the age of first heterosexual intercourse occurred, while in Germany the age at which males and females have sexual intercourse for the first time has remained constant at 17 for about a decade.

The evidence also indicates that people are having sex with more partners over the course of their lifetimes in all four of the test countries for which information is available (Britain, Denmark, Finland and Germany). Among other things this means having more sex outside marriage in the form of premarital sex, sex within marriage-like cohabitation and sex outside one's main relationship. In relation to premarital sex the evidence is a little equivocal, but cohabitation in the sense of couples living together as man and wife without being married is reported to have increased in all three countries for which information on trends over time is available, namely Finland, the Netherlands and Sweden (European Commission, 2003a, p. 181). There is also evidence that sexual contact outside the main relationship is increasing in Britain, Denmark, Finland and Germany (relevant information was not available for the other test countries).

1.2 Attitudes towards sex

As with sexual behaviour, empirical evidence on trends in attitudes to sex is fragmentary. Nevertheless there is reasonable evidence that attitudes have become more tolerant towards sexual activity in general and towards homosexuality, premarital sex and cohabitation in particular. Data from the World Values Survey indicates that between 1981 and 1995 the proposition that individuals should have the chance of complete sexual freedom met rising approval, or at least falling disapproval, in all six of the eleven test countries in which there was a consistent trend (that is, in which changes between 1981 and 1995 in the percentages of respondents agreeing and disagreeing with the statement moved in opposite directions), namely Britain, Denmark, Germany, the Netherlands, Belgium, and Spain (World Values Study, 2004). Although for Ireland it is reported that sexual activity is still supposed to be restricted to marriage, in Austria, Italy and Germany sex is reported to be tied not to marriage but rather to love within a long-term monogamous relationship, married or unmarried, and in Finland and the Netherlands it is reported that there is growing tolerance towards the uncoupling of sex and love.

There is good evidence that attitudes towards homosexuality are becoming more tolerant. Between 1981 and 1995 the percentages of World Values Survey respondents saying that homosexuality is never justified fell in 9 of the 11 test countries included (Belgium, Britain, Finland, France, West Germany, Italy, the Netherlands, Spain and Sweden), while rising in just two (Denmark and Ireland) (World Values Study, 2004). Separate survey evidence for Finland and the Netherlands reported in the *International Encyclopaedia of Sexuality* corroborate this finding.

In relation to sex outside marriage it is reported that there is growing toleration and acceptance of premarital sex in three of the four countries for which information is available – Ireland, Greece and Portugal – while in Britain acceptance of sex before marriage is reported to have become almost universal (Wellings, Field, Johnson and Wadsworth, 1994, p. 244). Another indication of changing attitudes is that in Finland the proportion of women setting the promise of marriage as the condition for beginning a sexual relationship fell from two-thirds in 1971 to just 16 per cent in 1992. It is also reported that there is growing acceptance of cohabitation in Italy and Portugal despite the fact that living together without being married is not widespread in these countries.

In general most people disapprove of sex outside one's main relationship, and there is little evidence that this is changing. The World Values Study found that between 1981 and 1990 there was little change in the percentages saying that it is never justified for married men and women to have an affair (Inglehart, 1997, pp. 366–67), and national studies on Finland and the Netherlands reported in the *International Encyclopaedia of Sexuality* yield conflicting findings.

Although the reluctance of victims to report child sexual abuse, rape and sexual harassment means that it is impossible to identify with any confidence any general trends in their incidence, it is reported that awareness of the extent of coercive sex and preparedness to report it to the authorities is increasing in Austria, Britain, Denmark, Ireland and the Netherlands. This is sexual liberalization not in the sense of greater tolerance of coercive sex but rather as a process of removing taboos on talking about it.

1.3 The future

It seems likely that liberalization of sexual attitudes and behavior will continue. Sexual liberalization is a well-established trend that has been in progress for decades. There is also considerable scope for further liberalization of sexual behavior. As many people still do not engage in sexual intercourse until their late teens or even later, it seems clear that there is scope for more people to engage in sex in their early teens, bringing down the average age of first intercourse further, although strong disapproval of sex among children, and especially between adults and children, is likely to inhibit further falls in the lowest age at which people first have sex. There is also scope for a further increase in the proportion of people engaging in premarital sex even though in some countries the incidence of this is now very high, and there is considerable scope for further increases in cohabitation as well as in the number of sexual partners that people have during their lifetimes. However although there is some evidence that the incidence of concurrent sex outside one's main relationship is increasing, the fact that attitudes to this remain solidly antagonistic would be expected to inhibit the further development of this tendency.

In terms of attitudes the current high levels of disapproval of homosexuality mean that there is plenty of scope for the trend towards greater tolerance of homosexuality to continue (World Values Study, 2004). There also appears to be scope for further increases in the reporting of sexual attacks to the authorities. Another reason to expect sexual liberalization to continue is the declining political leverage of mainstream Christian churches detailed in the next section, as this weakens the political position of those who want to keep the traditional Christian model of sexual morality. Finally, there is no counteracting tendency in sight. Even the onset of HIV/AIDS in the 1980s did little to slow the process of liberalization.

The evidence also indicates, however, that the liberalizing trend in sexual attitudes is not without limit, as none of the surveys referred to above found that attitudes have softened towards sex involving children, coercive sex or sex outside one's main relationship. Instead the general consensus of experts in this area seems to be that there is a trend away from approving only monogamous sex within lifelong marriage, the traditional

Christian moral position, towards tolerance of any sexual activity between consenting adults that takes place within steady, monogamous, loving but not necessarily long-term relationships. Here the words 'consenting', 'adults', 'monogamous' and 'loving' seem to delineate the new moral dividing line. In this light what appears to be happening is that the 12 test countries are moving along a trajectory from the Christian model to a liberal model of sexual behaviour and attitudes, with northern countries in the lead and Mediterranean countries following.

2. Policy implications

Sexual liberalization as defined above has three main implications for public policy: liberalization of sexual regulation, liberalization of laws relating to abortion, and measures to improve sex education and widen the availability of contraception.

2.1 Liberalization of sexual regulation

The liberalization of sexual attitudes and behavior would be expected to increase political pressure to liberalize legal regulation of sexual activities. Sexual liberalization in the electorate implies more support for parties that advocate liberalization and less support for parties that support the old Christian sexual morality, such as Christian Democratic parties. This in turn implies a smaller role in government for these parties and therefore a reduction in political pressure within governments to keep or extend policies designed to enforce Christian sexual morality. More generally it means less electoral incentive for parties and governments of all complexions to support such policies. In these circumstances Christian parties might be expected to dilute the extent to which their policies are distinctively Christian in order to broaden their electoral appeal and thereby avoid electoral decline, which again would make it easier for governments to liberalize state regulation in this area.

Although lack of evidence means that it is not possible to test this proposition as a whole, it is possible to test the idea that sexual liberalization causes a liberalization of laws relating to homosexuality, as greater political support for liberalizing laws regulating sexual activities, and weaker opposition, implies that we should expect increasing pressure to liberalize these laws. If this effect is real, the fact that sexual liberalization has been proceeding for many years means that it should already be in evidence. The hypothesis to be tested, therefore, is that *in recent years laws relating to homosexuality in the 12 test countries have been liberalized.*

Over the past few decades homosexual acts have in fact been legalized in all 12 test countries, and in a number of these there have been moves to outlaw discrimination against homosexual men and lesbian women, reduce the age of consent for homosexuals to the heterosexual age of consent, and introduce legal recognition of homosexual unions (Francoeur, 1997–2001, 2004). In 1989, for example, Denmark pioneered the introduction of legal registration for same-sex unions (Graugaard et al., 2004).

The trend towards more liberal laws on homosexuality is clear. This hypothesis is therefore *confirmed*.

2.2 More liberal abortion laws

Earlier sexual debut, more sexual partners and more sex outside marriage would be expected to increase the number of unplanned pregnancies, other things being equal, and therefore increase the demand for cheap, accessible, safe, legal abortions. This in turn would be expected to strengthen electoral pressure to liberalize abortion laws. If this effect is real, it should already be in evidence. The hypothesis to be tested, therefore, is that *in recent years laws relating to abortion in the 12 test countries have been liberalized.*

As we saw in relation to the growth of women's employment, major liberalizing reforms of abortion law have taken place since 1960 in 10 of the 12 test countries, while in Germany governments have made efforts to liberalize abortion laws but have been forced to water these down due to more 'radical' legislation being struck down by the Constitutional Court. Ireland is the only country in which abortion remains illegal, although even here legislation was passed in 1995 to define the right to impart and receive information about abortion (United Nations, 2008).

The trend towards more liberal abortion laws is very clear. This hypothesis is therefore *confirmed*.

2.3 Improvements in sex education and availability of contraception

Earlier sexual debut, more sexual partners and more sex outside marriage imply not only an increase in unplanned pregnancies but also an increase in the incidence of sexually transmitted diseases (STDs), other things being equal, including HIV/AIDS. Given that both unplanned pregnancies and STDs are seen as problems, the issue for policymakers is what to do about them. One possibility would be to try to reverse the trends that are fuelling increases in these phenomena but, as we have already noted, electoral pressures favour more liberal policies, not more restrictive ones.

However there is an alternative that is much more in line with the tenor of the times, namely to implement policies designed to increase the extent to which sexually active people use contraception, especially condoms, since wider use of appropriate contraception should reduce rates of both unplanned pregnancies and STDs. What this implies is policies designed to improve the availability of contraception, such as moves to facilitate widening the range of retail outlets, plus policies designed to improve knowledge about contraception, in particular expanded public education programmes and improvements in sex education in school. In the past, programmes such as these have often been weakened or blocked by inhibitions about talking about sex, but these should be weakening as sexual liberalization proceeds, clearing the way for more determined efforts.

If the trend towards more liberal attitudes to sex does in fact lead to state moves to make contraception more widely available, the fact that sexual liberalization has been proceeding for many years means that this effect should already be discernible. The hypothesis to be tested, therefore, is that *in recent years governments in the 12 test countries have taken steps to make contraception and sex education more widely available.*

The available evidence indicates that this is indeed the case, as the regulatory changes reported in the *International Encyclopaedia of Sexuality* for the 12 test countries since the 1960s are all in the direction of making contraception more widely available, although wide variations in availability remain. Contraception was made legal in Italy during the late 1960s and in Ireland in 1979. In Britain, NHS advice on contraception was made free in 1974. In France, contraceptive prices were reduced in 1993 to encourage their use, and in 2000 school nurses were permitted to distribute the morning-after pill. In Greece, family planning centres were established by the government in the 1980s. And recent Dutch governments have strongly pushed contraception (Francoeur, 1997–2001, 2004).

Data on sex education is also fragmentary, but all the changes in provision of sex education reported in the *International Encyclopaedia of Sexuality* for the 12 test countries since the 1960s are, with the possible exception of Britain during the 1980s, in the direction of making sex education more widely available. Sex education in schools was established in Austria during the 1970s and in Portugal in 1984. Funding for sex education in Britain was first provided in 1968 and, despite placing it within a strict moral framework during the 1980s (including prohibiting the ‘promotion of homosexuality’), is becoming more firmly established as time goes on. Sex education was made mandatory in Swedish schools in 1956 and in Danish schools in 1970. In Finland most schools provided sex education by 1996. In Spain legislation passed in 1991 promotes sex education in schools. And in 1987 the Irish government issued a recommendation that sex education be included in the curricula of post-primary schools (Francoeur, 1997–2001, 2004).

This hypothesis is therefore *confirmed.*

10.3 Secularization

1. Description

It seems clear that there is a process of secularization in the 12 test countries in the sense of a decline in self-declared religious affiliation and attendance at religious services. On the other hand there does not appear to be a corresponding decline in religious belief as such. What this means is that what we have is the decline of mainstream organized Christianity rather than the decline of religion as such.

There is abundant evidence that affiliation with mainstream Christian churches is falling in Europe. Figures from national censuses and social surveys show that between 1960 and 1990 declared religious adherence fell in all 14 European countries for which data is available. This trend appears to have continued in the 1990s, as the International Social Survey Programme reports that over the period 1991–98 the proportion of the population who identify themselves with a denomination fell in all of the European countries covered, which included five of the test countries. World Values Survey data for 11 of the 12 test countries, and covering various periods between 1981 and 1997, indicate declines in self-reported affiliation to Christian denominations in nine of these countries, while affiliation remained steady in Finland and rose slightly in Sweden. These results are corroborated by figures put together by the Center for the Study of Global Christianity on a best-available-estimate basis, as these indicate a steady decline over the entire twentieth century in the proportion of Christians in all regions of Europe apart from former communist Eastern Europe (Crouch, 1999, pp. 272–3; De Graaf and Need, 2000, p. 127; World Values Study, 2004; CSGC, 2003).

There is also abundant evidence that religious participation in the test countries has fallen in recent years. Eurobarometer data for 12 EU member states indicates that between 1970 and 1998 the proportion of people reporting that they attended religious services at least once a week fell in all nine of the test countries included in the survey, although in Italy religious participation rose slightly between 1981 and 1998. The World Values Surveys of 1981, 1990 and 2001 report that the proportion of people reporting that they attend religious services at least once a week fell in 6 of the 11 of the test countries covered (Belgium, France, Germany, Ireland, the Netherlands and Spain), remained stable (and low) in

Britain, Denmark, Finland and Sweden, and rose significantly only in Italy. This downwards trend is also evident for the sub-period 1990–2001 considered alone. The International Social Survey Programme surveys for 1991 and 1998 show small falls in the percentages of respondents attending church at least once a month in all four of the test countries covered (Britain, Germany, Ireland and Italy). There is also evidence that participation in religious rites of passage is in decline, as national census and survey data reveal a fall in the number of religious weddings as a proportion of total weddings between 1960 and 1990 in all 11 European countries for which there exists data at both time points, while the number of baptisms fell in four of the five test countries for which this data is available (Belgium, Britain, Finland and France) with a rise in Denmark (Norris and Inglehart, 2004, pp. 72–3; De Graaf and Need, 2000, p. 127; Crouch, 1999, pp. 267–69).

By contrast the long-term decline in religious belief may have come to an end. On the one hand figures from national censuses and social surveys show that between 1960 and 1990 'in almost every country for which we have data for both periods, there is a clear increase in the proportion of Western Europeans … not associated with any religion at all' (Crouch, 1999, pp. 272–73). In addition, the International Social Survey Programme reports that between 1991 and 1998 the percentages of respondents who believe in God fell in four of the five test countries covered (Austria, Britain, Germany and Ireland) and remained stable in the remaining one (Italy), while the European Values Study reports that between 1981 and 1999 belief in a personal God fell slightly in eight of the ten test countries for which data is available, with a slight rise in West Germany and a substantial rise in Italy. However although data from a combination of Gallup opinion polls and the World Values Survey indicate that between 1947/68 (data is available earlier for some countries than for others) and 2001 belief in God declined in all nine of the test countries covered, during the period 1990–2001 belief in God rose in six of the eight test countries for which data was available at both time points. The same pattern is true of belief in life after death: a long-term decline over the period 1947–2001 as a whole, except for Italy, but a widespread rising trend during the 1990s (De Graaf and Need, 2000, p. 129; EVS, 2003; Norris and Inglehart, 2004, pp. 89–91).

For our purposes here, then, secularization means declining religious affiliation and participation rather than a decline in religious belief as such.

Will secularization thus defined continue over the next 20 years or so? There are two main reasons to think that it will.

First, at least some of the factors that have undermined religious belief in the past continue to operate. The success of science in explaining natural phenomena continues to undermine traditional Christianity by rendering at least some of its central empirical claims implausible, while the growing scientific mastery of nature demonstrates the clear superiority of science and technology in practical terms as well (Norris and Inglehart, 2004, pp. 7–8). The religious pluralism that resulted from the breakup of European Christendom in the Reformation, and wide acceptance of the value of religious freedom, both continue to undermine the idea that there is one religious truth (Norris and Inglehart, 2004, pp. 12–13; Hamilton, 2001, p. 207). The functional differentiation of society, which among other things has involved churches handing over much of their responsibility for functions such as education and social welfare to separate secular bodies, continues to deprive churches of much of their traditional social purpose and relevance to the lives of most people (Norris and Inglehart, 2004, p. 9).

Second, there is the theory that religion is in large part a response to existential insecurity, since people living on the edge need reassurance that a higher power will ensure that things work out and that if you follow the rules everything will turn out well in this world or the next. This implies that greater economic security lessens the need for religion, which in turn implies that growing affluence is a major driving force behind secularization. This view is supported by World Values Study findings that secularization is more advanced in rich countries, among rich people, and, for post-industrial nations such as the 12 test countries, in recent times (Norris and Inglehart, 2004). Given that economic growth is expected to continue, this implies that we should therefore expect secularization to continue as well.

2. Policy implications and test results

The decline in the proportion of the population reporting affiliation with a religious denomination implies a decline in the proportion of the population whose political identity is at least in part based on religious affiliation, while fewer people participating in religious practices means that fewer people are subject to regular reinforcement of religious beliefs and values or to explicitly political instruction by the clergy. Other things being equal this implies that the proportion of the population with political beliefs and values closely aligned with those of mainstream Christian churches is falling, which in turn implies a weakening in the electoral incentive for political parties and governments to support the sorts of policies that churches want.

This has at least three policy implications.

First, we would expect declining state support for churches, for example a decline in financial support in forms such as subsidies and tax breaks. Unfortunately, however, this proposition cannot be tested due to lack of comparable data on state support for churches.

Second, we would expect declining state support for church involvement in education, especially as declining religious affiliation and participation implies a reduction in the proportion of the electorate who send their children to church schools, other things being equal, and therefore progressive erosion of electoral support for religious involvement in education. Unfortunately, however, this policy implication cannot be tested either because again reliable internationally comparable data is not available.

The final policy implication, which can be tested, is that there will be a weakening of state regulation relating to sex and reproduction. To the extent that falling religious affiliation and participation means rejection of church authority on morality, one would expect that the proportion of the population that behaves in ways defined by Christian values as being immoral is increasing as time goes on. Norris and Inglehart argue that virtually all traditional religions aim at strengthening the family by encouraging women to stay at home and raise children while forbidding anything that interferes with high rates of reproduction, such as contraception and abortion, in line with optimum survival strategies in traditional poor societies (Norris and Inglehart 2004, p. 23). Thus the Catholic Church, from which the Protestant churches derive much of their teachings and which still predominates in a number of the test countries, forbids any action specifically intended to prevent procreation as well as prohibiting abortion, homosexuality, masturbation and prostitution (Parrinder, 1996, pp. 237–9). As we have already seen in the first part of this chapter, however, attitudes to sex in the 12 test countries are becoming more liberal and sexual behavior is becoming less constrained. This increase in the number of people who act contrary to Christian morality in these areas, or who want to, implies, other things being equal, that popular pressure will build over time to liberalize or remove laws enforcing those aspects of Christian morality that are no longer in accord with broad societal norms. At the same time the declining political leverage of mainstream churches, in conjunction with the declining proportion of the population that shares traditional Christian norms, means that resistance to liberalization in these areas is weakening. This implies that we should expect a progressive weakening or removal of state regulation designed to enforce Christian morality where this conflicts with widely shared secular norms. Among other things this implies liberalization of laws relating to abortion, homosexuality, contraception and sex education.

We might also expect that rejection of Church morality would in the case of some people weaken inhibitions on anti-social and criminal behavior, but whether this results in a net increase in crime or anti-social behavior overall is unclear due to the fact that another king trend, population ageing, implies a steady reduction in the proportion of young men in the population and therefore less crime rather than more.

If secularization does in fact lead to liberalization of state regulation relating to sex and reproduction, the fact that religious affiliation and attendance have been declining for many years implies that this liberalizing process is already under way. The hypotheses to be tested, therefore, are that *in recent years there has been a trend in the 12 test countries towards liberalization of state regulation relating to (1) abortion, (2) homosexuality, (3) contraception and (4) sex education.*

As we have just seen in relation to sexual liberalization, all these hypotheses are *confirmed.*

10.4 Conclusions

This chapter has tested a number of hypotheses based on the policy implications, according to policy network theory, of two rather different yet closely related king trends: sexual liberalization in relation to attitudes and behavior, and secularization in the sense of declining religious affiliation and participation. The stress placed by traditional Christian churches on matters relating to sex and reproduction, in combination with a lack of available evidence in relation to other policy implications of secularization, such as declining state support for churches and church schools, has meant that the hypotheses tested were the same for both of these king trends, namely that in recent years governments in the 12 test countries have weakened or removed restrictive state regulation relating to:

- Abortion
- Homosexuality
- Contraception
- Sex education

All of these hypotheses were *confirmed.*

11
Population Ageing and the Expansion of Education

11.1 Introduction

This final empirical chapter tests hypotheses based on the policy implications of two long-standing social trends: the ageing of populations and the expansion of education.

11.2 Population ageing

Population ageing, in the sense of a steady increase in the median age of inhabitants, is one of the best known of all social trends. Over the past few decades life expectancy at birth has increased steadily in all 12 test countries with the partial exception of the Netherlands, where life expectancy for women has been broadly steady since 1980 (Eurostat, 2007c, p. 141). As a result the proportion of older people in the populations of the test countries has increased. More specifically, the number of inhabitants aged 65 and over as a percentage of the working population aged between 55 and 64 (the old age dependency ratio) increased between 1980 and 2004 in 7 of the 12 countries, while remaining broadly steady in four and decreasing only in Ireland (Eurostat, 2007c, p. 126).

This trend is set to continue. Although demographic projections become more uncertain the further one goes into the future, they constitute reliable evidence for continuing population ageing over the next 20 years or so because they depend largely on past fertility rates and the age profile, both of which are known, plus the life expectancy of those currently alive, which only changes gradually. What these projections suggest is that between 2010 and 2035 the old-age dependency ratio will increase in all 12 test countries (EPC, 2001, p. 13; Eurostat, 2008g).

One obvious implication of this is that age-related public spending on pensions, health care and old-age care services is likely to increase, other things being equal. Projections by the EU's Economic Policy Committee indicate that pension spending will rise over the period 2004–50 in all 12 test countries apart from Austria, where recent pension reforms will eventually result in lower spending. Spending on health care and on long-term care is also expected to rise over this period in all 12 countries (EPC, 2006, pp. 8–9). At the same time the proportion of working age inhabitants in the population is projected to fall over the period 2010–50 in all test countries apart from Austria and Britain, where this trend levels out around 2040 (Eurostat, 2007c, p. 151). Among other things this implies a downwards trend in state revenue, other things being equal. This juxtaposition of an increasing proportion of old people and a shrinking workforce therefore implies a tendency for deficits to emerge and grow either within the state budget or in public finances defined more broadly to include the finances of statutory social insurance funds.

While action to bring this tendency under control can be delayed in the short term, deficits cannot be left to grow indefinitely because ultimately this would result in financial crisis and – for the government of the day – electoral oblivion. Furthermore, knowledge about rising deficits and the economic consequences of letting these rip is likely to lead a variety of political actors inside and outside government to exert whatever political pressure they can for governments to do something long before deficits reach dangerous levels. For this reason policy network theory suggests that electoral considerations will move governments of the test countries to take steps to rein in existing deficits and, ideally, bring the tendency of deficits to increase under control. The policy implications of population ageing are therefore based on the main options at their disposal for doing this: raising taxes and/or social contributions, cutting age-related spending, and taking steps to raise employment rates.

1. Rises in taxes and/or social contributions, and/or cuts in age-related spending

One obvious response to the tendency of age-related spending to increase would be to raise social security contributions and/or tax to finance the steady increase in age-related spending.

But there are two problems here. First, moves to raise tax or employees' social contributions are likely to be unpopular, and raising employer's social contributions would increase business costs and thereby run counter to the trend identified in earlier chapters for governments to implement more business-friendly policies. Second, raising sufficient revenue to cover the projected spending would be very difficult not only for countries in which spending is forecast to rise very rapidly over the period 2000–50 but also for countries where public expenditure already approaches or exceeds 50 per cent of GDP, as at these levels even classic big-spending governments such as the Social Democrats in Sweden tend to want to call a halt to the expansion of public spending (Stephens, 1996, p. 43).

It is not at all clear, therefore, that raising taxes and/or social contributions alone is a viable strategy for all test countries. Governments therefore also have to look at the alternative of slowing, halting and preferably reversing the tendency of age-related spending to rise. Spending could also be cut in areas such as education and defence, of course, but this would not address the fundamental issue of the tendency of spending in age-related areas such as pensions, health care and long-term care to rise over time if nothing is done.

There are numerous ways in which spending on pensions, health and long-term care can be cut. These include subjecting pensions to income- or means-testing, extending the qualifying period for a full pension, indexing pensions to prices rather than wages and raising the retirement age. Options for containing health care costs include regulation of prices and volumes of health care and inputs into health care, imposition of caps on sectoral or overall health spending, shifting of costs to the private sector, moves to make health care systems more efficient by enhancing the role of health care purchasers, improving hospital contracting and payment systems, improving the managerial independence and cost accountability of hospitals, and increasing competition among providers. Strategies to limit the cost of long-term care include not only relatively uncontroversial policies such as extending home and community-care programmes in order to stabilize or reduce the number of people receiving care in institutions, and reinforcing programmes designed to prevent or delay the onset of disability in old age, but also policies that would impose costs on disabled old people such as increasing private cost-sharing (including the use of supplementary private insurance) and using income and means tests to restrict benefits mainly to those most in need (OECD, 2005, p. 14; Docteur and Oxley, 2004, pp. 44–69).

The political problem here is that reforms along these lines tend to be resisted not only by current pensioners and older people receiving health care and long-term care but also by carers and relatives, organizations representing the interests of older people, and younger people thinking about their future, which means organizations such as trade unions as well. To the extent that people change their vote on this issue, therefore, governments will pay an electoral price for pushing such measures through. Furthermore, population ageing increases the proportion of older voters and thereby strengthens the electoral incentives for governments to respond to their demands, and as the proportion of older people in the population increases one would expect the membership of groups representing their interests to increase too, further increasing pressure on governments to implement policies that are desired by older people.

Ultimately, however, the pressure to control age-related spending must prevail over objections to action because, as noted earlier, the threat of financial disaster means that governments cannot let deficits climb indefinitely. It follows that policy network theory suggests that as time goes on governments are likely to increase taxes and/or social contributions, and/or cut age-related spending.

Given this, the sheer size of pension spending suggests that such measures are likely to include steps to cut spending on old-age pensions. Since population ageing has been in progress for many years, if it does lead to governments taking steps to cut pension spending this should already be in evidence. The hypothesis to be tested, therefore, is that *in recent years the governments of the 12 test countries have implemented one or more measures designed to cut spending on pensions,* such as raising the pension eligibility age, reducing benefits for those who retire early, increasing the number of years of contributions required to receive a full pension, extending the period used for the calculation of the reference salary on which pensions are based, extending means-testing, indexing pensions to prices rather than wages, and moving from a defined-benefit system to a defined-contribution system that adjusts benefits (annuities) to life expectancy at the point of retirement (OECD, 2007, pp. 55–62). Strictly speaking the proposition that governments will raise taxes and/or social contributions, and/or cut age-related spending, does not entail that they will cut pension spending in particular, but a finding that at least 9 of the 12 test countries have moved to reduce pension spending would confirm the more general proposition that population ageing leads governments to raise taxes and/or social contributions, and/or cut age-related spending.

A survey by the OECD of reforms to national retirement income systems since 1990 found that this is indeed the case, as one or more of the above types of measures were introduced in 11 of the 12 test countries, Ireland being the exception. Although there were also a few reforms that would result in higher pension expenditure, these were very rare (OECD, 2007, pp. 58–60). The obvious explanation for the Irish exception is that population ageing does not affect pensions as much in Ireland as elsewhere because it is the only one of the 12 test countries with only a basic pension and no second-tier public pension at all, and OECD data indicates that Ireland was just one of two countries (the other being Germany) in which age-related spending was falling prior to 1990, which means that at that time there was little incentive to introduce unpopular measures to further cut old-age spending (Whiteford and Whitehouse, 2006, pp. 80, 85).

As 11 of the 12 countries have moved to cut spending on pensions, however, this hypothesis is *confirmed*.

2. Raise employment rates

Another way in which governments can try to bring deficits under control is to counteract the effects of a shrinking working-age population by taking steps to raise the rate of employment in the population in general. To the extent that a reduction in the size of the working-age population relative to other age groups translates into a reduction in the number of people employed as a proportion of the total population, the result will be lower production and therefore lower economic growth than would otherwise be the case. Among other things this implies lower incomes and consumption than would otherwise be the case as well as a reduction in the size of the revenue base and therefore lower state revenues. The economic and electoral problems created for governments by this, coupled with the tendency of population ageing to increase age-related spending, increases the incentives for them to do what they can to increase the size of the labour force by means such as measures designed to increase fertility, delay retirement, increase the participation of women in the workforce, and increase immigration, and to try to compensate for the negative effects of labour force reduction on growth by increasing productivity through human capital development and increases in physical capital (European Commission, 2004j, p. 15; OECD, 2003a, pp. 19–22).

Table 11.1 sets out some of the main instruments that can be used by national governments to try to increase the size of the labour force. It was not possible to test whether the governments of the 12 test countries have moved on all these fronts, but it was possible to test three hypotheses based on the idea that population ageing leads governments to take steps to raise employment rates, namely that governments have moved to delay retirement, strengthen active labour market policies and

Table 11.1 Measures designed to increase the size of the labour force

Purpose	Examples
Increased fertility	Financial incentives for families and individuals with children, such as cash payments, tax breaks and subsidies for housing, education, medical services, public transport and recreation services
	Improved maternity and parental leave
	Expansion of free or subsidized childcare
	More flexible working hours for parents, including improved provision of part-time work
Later retirement	Later retirement ages for pension schemes
	Making pensions less generous, for example by switching from indexation by wages to indexation by prices, altering the reference earnings in respect of which pensions are calculated, and switching from earnings-related to flat-rate benefits
	Limitation or abolition of early retirement schemes, restriction of access to disability pensions, and cuts to unemployment benefit levels and benefit periods plus more stringent job search criteria
	Maintenance of demand for older labour by avoiding or abolishing employment protection legislation that constrains employers to retain workers once hired, or by providing wage subsidies to make it easier for employers to cut the wages of older workers as they become less productive
	Legislation against age discrimination in the workplace, including measures to ensure that older workers are not excluded from training programmes
	More flexible working hours, including gradual retirement
Greater female participation in the workforce	Anti-discrimination legislation
	Policies that enable work to be combined with parenthood, such as free or subsidized childcare, improved maternity and parental leave, and more flexible working hours for parents, including part-time work
Increased immigration	Expansion of immigration quotas for working-age people, especially skilled immigrants
	Relaxation of eligibility conditions for long-term residence for employment purposes and for citizenship acquisition, especially for skilled immigrants

Sources: Sleebos (2003), pp. 34–42; OECD (2003a), pp. 19–23; Council of the European Union (2003), p. 6.

weaken employment protection legislation. The other hypothesis tested was that governments have implemented measures to make it easier for women to combine work and child-rearing, but this had to be dropped from the analysis (despite being confirmed) because, as we saw in Chapter 7, this runs counter to the hypothesis derived from a number of other king trends that governments will move to weaken employment regulation, including employment regulation relating to women. For this reason policy network theory has no determinate prediction in relation to employment regulation as it relates to women.

2.1 Steps to encourage people to delay retirement

To the extent that the average retirement age rises, age-related public spending is likely to fall, other things being equal, and total employment, growth and state revenue are likely to rise. For this reason governments have strong incentives to do what they can to delay the exit of older people from the workforce. The first hypothesis to be tested, therefore, is that *in recent years measures to delay retirement have been introduced in the 12 test countries.*

A survey of measures in this area reveals that this is indeed the case, as between 1990 and 2005 governments introduced measures designed to delay retirement in 11 of the 12 test countries, including raising the normal retirement age, raising women's retirement age, lengthening contribution periods for full pensions and limiting access to early pensions (OECD, 2007, pp. 58–60). This hypothesis is therefore *confirmed.*

2.2 Strengthening of active labour market policies

Active labour market policy consists of measures designed to assist or oblige people who are unemployed to get a job. If population ageing is leading governments to try to raise employment levels, therefore, we would expect measures designed to increase the effectiveness of active labour market policy to be included among the policy instruments used to this end. Thus the hypothesis to be tested here is that *in recent years measures designed to increase the effectiveness of active labour market policy have been introduced in the 12 test countries.*

In fact reforms designed to increase the effectiveness of active labour market policies, as we saw in relation to the expansion of trade and the internationalization of production, took place between 1994 and 2004 in all 12 test countries. These included increasing evaluations of individual job-seekers, increasing job-search monitoring, introducing or expanding profiling and/or individual action plans, expanding cooperation between, or integration of, public employment services with benefit administration, introducing competition into the provision of public employment services via contestability of placement or contracting out of active labour market policies, using active labour market policies as a work availability test, using active labour market policies as a means of early activation of job-seekers, and making participation compulsory (OECD, 2006a, pp. 69–70). All 12 test countries also introduced measures designed to strengthen the incentives for the unemployed to get a job. These included lowering replacement rates for unemployment benefits, shortening the duration of unemployment benefits, tightening work availability conditions by means such as restricting the scope for the unemployed to reject job offers and applying sanctions more systematically where they fail to comply, making benefits conditional on training, restricting eligibility conditions, introducing waiting periods, and reducing work disincentives by means such as permitting benefits and work earnings to be combined for limited periods or lowering withdrawal rates as earnings rise (OECD, 2006a, pp. 57–8).

This hypothesis is therefore *confirmed.*

2.3 Weakening of employment protection legislation

One argument often heard from employers is that they will be more willing to take on new employees if they know that they can get rid of them if they are unsuitable or if economic conditions change. To the extent that governments accept this, the logic of policy network theory suggests that their desire to raise employment levels will lead them to weaken employment protection legislation. The hypothesis to be tested is, therefore, that *in recent years there have been moves in the 12 test countries to weaken employment protection legislation.*

As we saw in relation to the growth and diversification of production and consumption, between the late 1980s and the late 1990s employment protection legislation as measured was liberalized in 9 of the 12 test countries (OECD, 2004a, p. 117). This hypothesis is therefore *confirmed.*

11.3 Rising levels of education

As time goes on the average length of formal education that citizens of the 12 test countries receive is increasing. The proportion of school-age people receiving at least an upper secondary education has been rising for decades, as shown by the fact that census data indicates that the proportion of adults with at least an upper secondary education falls with age in all 11 of the test countries for which data is available (Belgium is omitted) apart from Germany (Eurostat, 2008a). This means that the overall percentage of citizens who are upper secondary graduates will continue to rise over time as older less-educated cohorts die and are replaced by younger cohorts with higher graduation rates.

Tertiary education has also been expanding rapidly: in general the proportion of people with a tertiary education falls with age in all 11 test countries for which data is available, although numbers in certain countries numbers peak in the 30–34 or 35–39 age range, due at least in part to the fact that some people obtain their tertiary qualifications later than others (Eurostat, 2008). In consequence the proportion of people who have received a tertiary education has been rising for decades, and the proportion of tertiary graduates will continue to rise over time as older less-educated cohorts are replaced by younger more highly educated cohorts.

One feature of this trend is that the length of formal education received is increasing more rapidly among women than men. This is shown by the fact that whereas in the 60–64 age range women with tertiary qualifications outnumber men with tertiary qualifications in just one of the 11 countries (Sweden), in the 20–25 age range they outnumber men in every single one of these countries (Eurostat, 2008). Again the cohort effect means that this trend will continue into the future.

The trend towards higher levels of education is virtually certain to increase over coming decades. Average levels of education are bound to continue to rise for decades to come due to the cohort effect unless educational provision is reduced, which seems unlikely. In addition it seems likely that the proportion of people completing upper secondary education will continue to rise, as it has been rising for a long time and the fact that in Sweden the proportion who have completed at least an upper secondary education had reached 86.5 per cent by 2006 suggests that there is room for this trend to continue for some time in most of the other test countries. The same is true of tertiary education: participation and graduation rates have been rising strongly for decades and the fact that in 2006 the proportion of graduates aged 20–29 per 1,000 of the corresponding age population varied significantly among the 12 test countries implies that there is plenty of scope for further increases in at least some of these countries (OECD, 2007a; Eurostat, 2008c).

One logical consequence of rising levels of education would be expected to be a steady improvement in the capacity of people to think for themselves. This implies a reduction in the acceptance of received ideas, which among other things implies greater questioning and criticism of governments and public policy. The increasing ability of people to think for themselves would also be expected to reduce the proportion of voters who vote according to party identification: the habitual and relatively unthinking allegiance to a political party that leads people to vote for that party right or wrong unless extraordinary circumstances intervene. Among other things this means that rising levels of education are likely to lead to identity-based responses to class-based parties being replaced by the expression of preferences based on issues and calculation, and therefore to an increasing proportion of voters becoming floating voters as time goes on. There is considerable evidence that this phenomenon, known as electoral dealignment, has been in progress for decades. What it means is that the core vote on which established parties have depended in the past is dwindling and that therefore the size of potential vote gains and losses at elections is increasing. This renders all parties, including government parties, more electorally vulnerable than they were in the past (Dalton, 2002, pp. 191, 201; Miller and Niemi, 2002, pp. 177).

It follows from these considerations that the logic of policy network theory suggests that rising levels of education have a number of implications for the future of public policy, although not all of these can be tested.

Increasing questioning of authority implies increasing support for liberal policies and therefore, other things being equal, a trend towards more liberal policies. Although this general proposition is impossible to test, it is possible to test whether policies are becoming more liberal in specific respects (of which more shortly).

To the extent that the core vote on which parties can reliably depend is dwindling, in order to win elections party leaders increasingly need to woo relatively uncommitted voters through words and actions. Because political communications with voters are almost exclusively via the media, while electoral dealignment means that the scale of any vote losses that might result from unfavourable coverage is increasing over time, it follows that politicians are becoming more dependent for electoral success on how they – and others – are portrayed in the media, and therefore on the goodwill of those who control media coverage. This implies greater policy leverage for media owners, editors and journalists, and therefore a tendency for public policy to move in the directions favoured by these people. Unfortunately, however, lack of good quality comparable data means that this proposition could not be tested.

Three policy implications that can be tested, however, are that rising levels of education lead to more women-friendly policies, less union-friendly policies, and less church-friendly policies.

1. More women-friendly policies

We have seen that one of the distinctive features of the current expansion of education is that women are becoming more highly educated at a greater rate than men. From a low base relative to men both the proportion of women receiving secondary education and the proportion receiving tertiary education have risen so that in the most recent cohorts to have reached their mid-20s female graduates now outnumber male graduates in all test countries. To the extent that education improves cognitive skills, this implies that the cognitive skills of women in the population as a whole are rising more rapidly than those of men as older cohorts, in which education levels among women are low relative to men, are replaced in the adult population by cohorts in which women are more highly educated than men. Assuming that cognitive skills improve political efficacy, this implies a relative improvement in the capacity of women to influence public policy in a women-friendly direction. Other things being equal one would therefore expect more women-friendly policies in areas such as childcare, social security, the representation of women in elected and appointed office, equal opportunities policy, family law, reproductive rights policy including abortion, and policies on violence towards women, such as rape and domestic violence (Kilkey, 2004, p. 332; Mazur, 2002).

As we saw in relation to the growth in women's employment, there has indeed been a trend towards more women-friendly policies, in particular *more liberal abortion laws* (these are more women-friendly in the sense that they give individual women the right to choose), and *greater legal protection against sexual violence*.

2. Less union-friendly policies

Increasing independence of mind due to rising levels of education implies a loss of membership for traditional mass organizations that depend on member discipline for their political efficacy. For this reason we would expect rising levels of education to lead to a loss of membership for trade unions along with diminishing solidarity among their remaining members, which is a serious drawback for organizations that historically have depended on disciplined mass action as their main weapon against employers and, on occasion, governments. Other things being equal this implies a decline in the ability of trade unions to pose a threat to governments in terms of industrial action and mobilization of large blocs of voters. For this reason we would expect a reduction in the pressure that unions can exert on public policy and therefore a shift away from union-friendly policies in areas such as employment regulation and social security.

Among other things this implies that *in recent years measures designed to weaken employment protection legislation have been introduced in the 12 test countries*. As we saw in Chapter 7, this in fact did occur between the late 1980s and the late 1990s in 9 of the 12 test countries (OECD, 2004a, p. 117). This hypothesis is therefore *confirmed.*

3. Less church-friendly policies

As traditional Christian churches are organizations the members of which are expected to defer to the authority of the Bible and the clergy, increasing independence of mind among citizens due to rising levels of education would be expected to lead to a reduction in the proportion of the population that are regular churchgoers. In fact secularization in this sense is a well-established trend, so much so that it is included in this analysis as a king trend in its own right. Other things being equal this implies that government policies will increasingly depart from those preferred by churches as time goes on. As noted in the previous chapter, these policy trends would be expected to include erosion of state support for churches and church schools as well as the removal of policies that support or enforce traditional Christian morality where this conflicts with widely held secular norms, for example in relation to sex, reproduction and the role of women. Although reliable internationally comparable data on whether state support for churches and church schools is in fact in decline does not appear to be available, we saw in the previous chapter that the proposition that there has been a trend towards liberalization of laws designed to enforce traditional Christian morality is consistent with the available evidence, as the specific hypotheses that *in recent years there has been a trend towards the liberalization of state regulation relating to (1) abortion, (2) homosexuality, (3) contraception* and *(4) sex education* were all *confirmed*.

11.4 Conclusions

This chapter has tested ten hypotheses based on the policy implications of population ageing and the expansion of education. The first four hypotheses are that *population ageing* has led governments to implement measures designed to

1. cut spending on pensions;
2. delay retirement;

3. increase the effectiveness of active labour market policy; and
4. weaken employment protection legislation.

The other six hypotheses are that the *expansion of education* has led governments to implement measures designed to

1. liberalize abortion laws;
2. improve legal protection against sexual violence;
3. weaken employment protection legislation;
4. liberalize regulation of homosexuality;
5. liberalize regulation of contraception; and
6. liberalize regulation of sex education.

All ten of these hypotheses (nine unique hypotheses) were confirmed.

12
The Future of Public Policy

12.1 Introduction

The aim of this study has been to test propositions about the future of public policy generated by using a resource dependency version of policy network theory to derive the policy implications of major long-term technological, economic, environmental and social trends, or king trends. These policy implications were derived by (1) identifying ways in which king trends imply changes in actors' resources, preferences and/or strategies, (2) working out what these changes imply for resource exchange among relevant actors, and (3) reading off their implications (if any) for the future direction of public policy. They were then tested against evidence about recent policy trends. This is possible because it has been established that the king trends have already been in operation for some time, so that if they affect public policy their impact should already be evident, and because the methodology for deducing the future policy implications of king trends operates entirely without reference to recent policy trends, so there is nothing circular about using recent policy trends to test the propositions generated by this methodology. The test procedure itself consisted of deriving specific hypotheses about the future of public policy from the policy implications of king trends, then testing all hypotheses for which reliable information about relevant recent policy trends was available for the 12 richest EU member states (Luxembourg excepted). Where it was found that public policy in the recent past has moved in the direction predicted by a hypothesis in at least 9 of the 12 test countries, this hypothesis was accepted on the basis that such a result is consistent with the view that the causal effects of king trends on public policy dominate those of other factors. Otherwise the hypothesis was rejected.

This concluding chapter begins by bringing together and evaluating the results of testing these hypotheses, then goes on to draw conclusions about the extent to which these results can be relied upon, what they tell us about the utility of policy network theory as a theory of policy change, and what their substantive implications are for our view of the likely future of public policy.

12.2 Results

In Chapters 6–11 a total of 31 distinct hypotheses based on the policy implications of 16 king trends were tested. Because in a number of cases the same hypothesis was used to test differently formulated policy implications of different king trends, the most concise way of setting them out is in the form of a single list. The hypotheses posit the existence in recent years in the 12 test countries of, or the participation of their governments in, the following policy trends:

1. A shift towards policies designed to facilitate the development and use of ICT
2. Deliberate moves to increase state use of surveillance
3. Tighter regulation of ICT and increasing international cooperation in this area
4. Increased emphasis on facilitating the development and use of biotechnology
5. A strengthening of the network of WMD-related agreements to which the countries are signatories
6. Increasing public spending on education
7. A trend towards a weakening of employment protection regulation
8. Steps to open up new international markets for services
9. A trend towards granting independence to central banks
10. Liberalization of abortion laws
11. A trend towards greater legal protection of women from sexual violence
12. More vigorous measures to encourage or mandate energy conservation and efficiency, including in relation to transport
13. More vigorous measures to encourage or mandate fuel switching within or between transport modes
14. More vigorous measures to encourage expansion of energy production from renewable sources
15. Increasing numbers of voluntary agreements with particular industrial sectors to reduce greenhouse gas emissions

16. Relaxation of product market regulation
17. Declining rates of corporate tax
18. An increasing number of international agreements on minimum labour standards
19. An increasing number of international agreements on minimum environmental standards
20. Measures designed to increase the effectiveness of active labour market policy
21. Steps to try to open up new foreign markets for exports in general
22. Liberalization of the regulation of foreign direct investment
23. Liberalization of the regulation of international finance, apart from prudential regulation
24. Strengthening of international prudential regulation of finance
25. Moves to tighten border controls by means other than by increasing the incidence of stop and search
26. An increase in international cooperation designed to combat international financial crime
27. Liberalization of state regulation relating to homosexuality
28. Liberalization of state regulation relating to contraception
29. Expansion of provision of sex education
30. Implementation of one or more measures designed to cut spending on pensions
31. Implementation of one or more measures aimed at delaying retirement

Drawing together the results of testing these hypotheses reveals that not a single one was disconfirmed. Three hypotheses that did appear to be disconfirmed had to be dropped from the analysis because further investigation revealed that (1) the logic of their derivation was flawed in the cases of the hypotheses that real minimum wage levels have been falling (Chapter 7) and that there has been a strengthening of international agreements on minimum tax rates for business (Chapter 9); and (2) the information used to test the hypothesis that there has been a trend towards the introduction and/or strengthening of anti-union legislation was not adequate for this purpose (Chapter 7). (For similar reasons it was also necessary to drop two hypotheses that had been confirmed, namely that there have been trends towards more women-friendly employment legislation and more vigorous measures to facilitate the development and use by business of new technologies (Chapter 7)).

Hence the finding, more precisely expressed, is that no properly derived and tested hypothesis was disconfirmed. What this means is that policy network theory as a theory of policy change has emerged unscathed from this extensive battery of tests.

12.3 To what extent can these results be relied on?

This is a remarkable result and one that greatly exceeded expectations, as in social science research such success in testing hypotheses is unusual. In fact the result is so unequivocal that a suspicious reader might wonder whether in some sense it has been fixed. This is not the case. But let's look briefly at some obvious criticisms that might be made.

1. A number of the hypotheses would have been disconfirmed had the minimum criterion for confirmation been 10 rather 9 of the 12 countries

True. Why 9 of the 12 countries rather than 10 – or indeed 8? How does one choose what criterion to employ to evaluate a hypothesis that predicts that something is likely but not certain to happen? Ultimately the choice is arbitrary in that there is no conclusive way of demonstrating that any particular number of countries should be chosen. But this problem of criterion selection is not restricted to this approach to evaluating hypotheses: although levels of statistical significance are not relevant to this study, since the 12 countries are not a sample of some underlying population, it is worth noting that the probability levels of 0.05 or 0.01 that are conventionally used by this approach to distinguish between confirmation and disconfirmation of hypotheses are also arbitrary.

That said, it is nevertheless possible to develop arguments that provide a certain degree of support for the choice of one criterion rather than another even though these cannot prove definitively that any particular one should be selected. The relevant argument here is that the choice of criterion is grounded in the nature of the hypotheses being tested. The propositions on which the hypotheses are based refer to increasing likelihood of policy change rather than certain policy change. Because all hypotheses must be falsifiable, however, likelihood cannot itself be used as the criterion of judgment. The hypotheses therefore specify that the causal effects of king trends on public policy *dominate* those of other factors, rather than totally determining public policy to the exclusion of all other factors. At the same time the dependent variable (policy trend) has just three possible values – up, down or level – so that guesswork would enable one to correctly predict its direction in maybe one out of three cases. This means that the actual congruence of predictions and observations needs to be considerably higher than one in three for the results to be considered supportive of the relevant hypothesis. If the effects of a king trend are hypothesized to dominate the causation of policy change rather than determining it entirely, while the congruence of predictions and observations needs to be high for a hypothesis to be accepted, it follows that the minimum number of the 12 countries for which the hypothesis holds need not be 12, but must not be much lower. This does not dictate that the critical number is 9, but 9 is a number that is not much lower than 12.

It should be stressed here that this criterion was chosen before the hypotheses were tested against evidence relating to this particular set of countries. Although a preliminary round of testing had previously been carried out, this applied to EU-15 countries in general, the set of hypotheses tested was slightly different, and a number of tests had not been completed because at that time not all of the relevant information had been collected. And these results were not systematically evaluated to determine whether the criterion of 9 of the 12 test countries would yield the 'right' result.

2. Disconfirmed hypotheses might have been quietly dropped

I have reported the results of all tests that have do not suffer from inadequate data or insuperable methodological problems: there has been no winnowing out of inconvenient results. Nor have any policy implications or hypotheses been excluded from consideration because pre-existing knowledge about recent policy trends suggested that they would be disconfirmed if tested. I have also tried hard not to let any pre-existing knowledge about recent policy trends influence my derivations of policy implications and hypotheses. That is, I have tried to ensure that nothing is included that would not have appeared had I been totally unaware of recent policy trends, and that nothing has been omitted that would have been included had I been unaware of these developments. Where policy implications, or hypotheses based on these, were not tested, this was because it was unclear how they could be tested, adequate data was not readily available, the policy implication refers exclusively to the future so cannot be tested using data from the past, the data that would be used to test the policy implication had already been used to establish the existence of the king trend under consideration, the policy implication was diametrically opposite to the policy implication(s) of one or more other king trends, or the policy implication was judged not to be interesting enough to test. Further information on why some policy implications were not tested is given in Appendix 1.

3. In at least some cases the observed correlations are equally consistent with causal hypotheses other than those tested

In the case of at least some hypotheses, the correlations between their predictions and observations of past policy trends are consistent not only with the proposition that the observed policy trend is being driven by the relevant king trend but also with propositions that posit other causal relationships instead, such as the proposition that it is the policy trend that is driving the king trend rather than vice versa.

Due to the logic of the test procedure, however, these possibilities do not affect the immediate conclusions that can be drawn from these results. The conceptual framework used to evaluate the test results is Karl Popper's falsification approach, which is based on the idea that empirical tests can never positively prove that a proposition is true because even if all past tests have produced results that are consistent with the proposition being tested, there is always the possibility that the results of the next test will contradict it. Instead what a test does, to the extent that its results are consistent with the predictions of the proposition being tested, is to demonstrate that this proposition remains standing after being subjected to a reality check. To be accepted, therefore, a hypothesis does not need to be proved in any positive sense, because this is impossible. Instead it must simply avoid being disproved (disconfirmed).

What this means is that a hypothesis is still considered to be confirmed even if the correlation with the observed policy trend is also consistent with other causal propositions, because this does not change the fact that, given the present state of information, the king trend to policy trend hypothesis has not been disconfirmed. Devising and testing hypotheses that would enable rival causal explanations to be eliminated (or not) must await another occasion.

4. The results could be affected by country selection

This may be the case but, as mentioned earlier, the selection of the 12 countries to be tested was made in advance of the final round of testing on the basis of a clear rationale, namely the desire for this analysis to be relevant to more than one country while restricting its scope to similar countries in order to limit the number of variables that might obscure any effects of king trends on public policy by inflecting their effects in different ways in different countries. The set of countries was therefore restricted to those EU member states in which GDP per capita in 2006 was greater than the EU average (apart from Luxembourg, which is excluded on the grounds that it is so much smaller and richer than the all the others) in order to control for type of government (democracy), level of economic prosperity, and EU membership.

12.4 The future of public policy

Let's sum up. The empirical tests described in this study did not disconfirm any of the 31 properly derived hypotheses that it was possible to test. Put another way, policy network theory as a theory of policy change has passed all 31 tests to which it has been subjected so far.

What this means is that the proposition that this resource dependency version of policy network theory provides a valid methodology for generating realistic propositions about the future of public policy has not been disconfirmed. It follows from this that *all* the policy implications generated by applying policy network theory to king trends should be accepted as providing realistic indications about the future of public policy in rich EU member states: if a methodology is valid – and it has not been disconfirmed so far – then the propositions that this methodology generates are also valid, including those that have not (yet) been tested, provided that the relevant independent variables (in this case king trends) have been correctly identified and no mistakes are made in the application of the methodology.

This does not mean that the analysis has conclusively proved that these propositions will all definitely come true. Tests of further hypotheses might disconfirm them. Addition of more countries might lead to the disconfirmation of hypotheses that so far have passed the test. Further investigation might reveal that correlations between hypotheses and reality are due to causal relations other than those specified by the theory. However the possibility that further tests might lead to the disconfirmation of the theory being tested is one that affects all causal theories: the list above simply points out some of the main possibilities in this particular case. And the fact remains that so far, after 31 tests, policy network theory as a theory of policy change remains standing.

It is for these reasons that the appropriate conclusion to draw is that this set of propositions, while not an infallible guide to the future of public policy, does provide us with a realistic picture of what the future of public policy is likely to be. This is the major substantive accomplishment of this study. As such it should be of considerable interest to anyone who needs to include assumptions about the future of public policy in their planning.

What, then, does this picture of the future of public policy show us? The aim of this final section is to put this before you. The scenario described below is the result of (1) drawing together all the policy implications of policy network theory that have been identified in this study and in the study that first generated these propositions (Compston, 2006), which are listed in Appendix 1; (2) combining policy implications that are similar or identical despite being implied by different king trends while dropping those that were found to be erroneous or which contradicted each other; and (3) regrouping the remaining policy implications for the sake of clarity into a relatively small number of categories according to their aims and effects.

This, then, is what the application of policy network theory to king trends implies about the future of public policy in rich EU countries:

1. More business-friendly policies
2. More employment-friendly policies
3. More intrusive, technological and internationalized law enforcement and security policies
4. More women-friendly policies
5. More liberal social policies
6. More vigorous climate policies
7. More vigorous policies to counteract the negative effects of technological innovation and economic internationalization

This is the short version. The chapter – and the book – concludes with a slightly more detailed description of these general propositions about the future of public policy. This is what we should expect as time goes on.

1. More business-friendly policies

King trends imply both more business-friendly policies in general and more business-friendly policies in certain areas in particular.

In terms of more business-friendly policies in general we should expect improvements in transport and communications infrastructure and in education and training, liberalization of product market regulation, cuts in taxes on business, and rising levels of financial aid (loans, subsidies, tax breaks and so on). We should also expect more vigorous measures to help employers reduce labour costs and maximize labour flexibility, such as moves to weaken employment protection legislation, as well as moves to reduce the costs to business of environmental regulation by means such as substituting market instruments for command-and-control regulation, downgrading existing regulation, or enforcing it less rigorously.

More generally we would expect more vigorous measures to ensure security of energy supply by means such as initiatives designed to ensure that global investment in energy production is adequate, imports of energy are not disrupted and domestic utilities deliver power reliably and at affordable prices, as well as policies aimed at improving energy efficiency and conservation, encouraging new energy technologies, and expanding the production of renewable energy. In relation to transport in particular we should expect steps to ensure that fuel efficiency and conservation is improved, new fuels and engine technologies are developed, and demand for travel is minimized, as well as measures designed to encourage or mandate fuel switching within and/or between modes of transport.

One implication of a trend towards more business-friendly policies is a trend away from union-friendly and worker-friendly policies, such as a progressive weakening in employment protection legislation. We should also expect an expansion of genetic testing of insurance applicants and employees as this technique becomes increasingly reliable.

King trends also imply more business-friendly policies in relation to certain sectors in particular. We should expect moves to expand assistance to exporters and transnational companies by means such as further steps in forums such as the WTO to open up new markets, liberalize investment restrictions, and expand targeted assistance and incentives for inward foreign investment. My analysis of the internationalization of finance, which was carried out well before the financial crisis of 2008 (Compston, 2006, ch. 12), suggests that international finance is only likely to have to submit to more stringent regulation in relation to the management of risk. Otherwise we should expect governments over the next 20 years or so to support further financial liberalization. We should also expect public policy to become more orientated towards assisting services firms in areas such as regulation, trade policy, access to government services, technical assistance, tax policy and financial support. Finally, we should expect policies that are more favourable to the media industry, such as deregulation and increased industry assistance.

2. More employment-friendly policies

The economic and political impact of king trends such as population ageing imply moves to improve labour productivity and maximize employment by means such as measures designed to increase fertility, delay retirement, increase the proportion of women working, help workers displaced by structural adjustment (for example by improving the effectiveness of active labour market policies), and increase immigration.

Policies designed to expand employment among low-skilled workers in particular would be expected to include the creation of more low-skilled caring jobs in public sector social services and, rather cruelly, reductions in unemployment benefit rates to increase the willingness of the unemployed to accept low-paid jobs.

3. More intrusive, technological and internationalized law enforcement and security policies

Among the policy implications of developments in military technology are efforts to discourage the further development and spread of weapons of mass destruction (WMDs) in countries outside the Western alliance by means such as intensifying diplomatic efforts to counter proliferation; improving security for WMD-related materials, equipment and expertise; doing more to intercept illegal trafficking of WMDs; and stepping up efforts to promote international and regional stability. We should also expect more vigorous action to dissuade, prevent and counter cyberattacks, such as mandating measures to improve computer security and legislating to assume greater powers over telecommunications and the Internet. Another likely development is increasing use of surveillance not only by the armed forces but also by police and internal security services. At the same time the opening up of new possibilities for criminals by technological developments and economic internationalization is likely to lead to more vigorous measures to fight cybercrime, illicit trafficking and international financial crime, such as tighter regulation in relevant areas and increasing international cooperation in law enforcement.

4. More women-friendly policies

Here we should expect improvements in funding and/or provision of affordable childcare, a strengthening of equal opportunities policy, more women-friendly family law policy in relation to issues such as divorce and inheritance, reproductive rights policies that give women more control over their own bodies by means such as improving access to contraception and liberalizing abortion laws where these are still restrictive, and improvements in protection for women against violence (including rape and domestic violence), and against sexual harassment and exploitation, by means such as legal reform and increases in funding for women's refuges.

5. More liberal social policies

These are in part a consequence of secularization and are expected to include erosion of state support for churches and church schools and removal of policies that support or enforce traditional Christian morality where these conflict with widely held secular norms, such as restrictive regulation of sexuality and reproduction. Among other things this implies moves to outlaw discrimination against homosexuals, improve the availability of contraception, expand public sex education programmes and sex education in schools, and liberalize abortion laws. We should also expect more liberal policies on human cloning and inheritable genetic modification as the safety and reliability of these techniques improves, and greater legal toleration of psychotropic drugs as these become safer and more employment friendly.

6. More vigorous climate policies

The political effects of climate change are likely to result in more vigorous measures to encourage less carbon-intensive energy and transport technologies, energy conservation and efficiency, fuel switching within and between transport modes, expansion of energy production from renewable sources, and voluntary agreements with particular industrial sectors to reduce greenhouse gas emissions. We should also expect steps to facilitate adaptation to the effects of climate change, such as moves to improve flood defences and plan for agricultural change.

7. More vigorous policies to counteract the negative effects of technological innovation and economic internationalization

Although technological innovation and economic internationalization are generally considered to be economically beneficial, they also have downsides. Moves to counter the negative effects of technological developments would be expected to include greater emphasis on economic policy instruments, such as international regulation of business, that are better suited to the environment created by recent developments in information and communication technology than are existing policy instruments; the extension of existing safety and cost–benefit regulation to new products and processes; and, as mentioned earlier, more vigorous measures to fight cybercrime. The negative effects of the expansion of trade and internationalization of production and finance are expected to elicit moves to help workers displaced by structural adjustment; intensified international cooperation to limit locational competition for foreign investment in areas such as tax, labour standards and environmental standards; steps to limit damaging practices by TNCs, such as intensified international cooperation to curb transfer pricing; more vigorous measures to prevent international financial crises and minimize their impact when they do occur, including stricter international prudential regulation of banks and other financial firms; and more vigorous measures to combat illicit trafficking and international financial crime.

8. Other

The great diversity of policy implications of king trends makes it difficult to identify a set of general categories that encompasses them all, so it is not surprising that a few escape the net. Policy network theory suggests that the expansion of trade and the internationalization of production and finance are likely to result in less militarily aggressive policies towards significant trading partners and countries with which there are significant investment links. Developments in information and communications technologies are likely to result in national health care systems becoming both more centralized and more patient-centred, as well as a general shift towards policies favoured by spatially dispersed groups and non-traditional groups as ICT improves their capacity to organize. And king trends such as population ageing are expected to lead to rising public spending and thus to efforts to finance and/or limit this by means of raising taxes and/or reforming government programmes in ways that result in lower spending – or lower spending increases – than would otherwise be the case, for example by increasing the years of contributions required to receive a full pension, indexing benefits to prices rather than wages, and obliging absent parents to provide more support for their children.

There is no crystal ball. Factors other than the 19 king trends identified here will of course also affect the future of public policy. Nevertheless the fact remains that none of the hypotheses about future policy trends generated by applying policy network theory to king trends were disconfirmed by the extensive testing reported in this book. This provides us with grounds for believing that the picture of the future of public policy sketched above does give us a reasonably accurate guide to the likely shape of public policy to come.

Appendix 1
Why Some King Trend Policy Implications Were Not Tested

The policy implications of king trends tested in this book are based on those identified in my book *King Trends and the Future of Public Policy* (Compston, 2006). As these were derived without any thought of testing them, however, it is not surprising that for a variety of reasons it was not possible to test them all. The main reasons why some policy implications and/or their associated hypotheses were not tested were as follows:

- They are contradicted by the policy implications and/or hypotheses of other king trends, so that overall the policy implication in that particular area is indeterminate.
- It is unclear how they could be tested.
- Adequate data is not readily available.
- They refer exclusively to the future, for example policy implications relating to human genetic modification.
- An error was discovered in their derivation: developments in technology, for example, do not necessarily imply higher spending in the relevant areas.
- They do not apply to all the 12 countries tested.
- The data that would be used to test them has already been used to establish the existence of the king trend under consideration (in rare cases).
- They do not imply policy change but rather policy stability.
- They are not thought to be interesting enough to test.

The following tables list all of the policy implications of the 19 king trends in the order in which they were identified in the *King Trends* book and specify for each whether they were tested and, if not, why not.

Table A1.1 Policy implications of developments in information and communications technology (ICT)

Policy implications	Judgement
Quicker policy change, more sophisticated public policies	Unclear how this could be tested
More autonomous policies in general	Not tested because policy network theory also generates the opposite policy implication
Shift towards policy instruments suited to the environment created by ICT	Adequate data not readily available
Shift towards policies favoured by ICT sector	Adequate data not readily available
More vigorous measures to encourage businesses and individuals to use ICT effectively	*Tested*
More union-friendly policies due to increasing union use of ICT	Not tested because policy network theory also generates the opposite policy implication
Less union-friendly policies due to increasing employer use of ICT	Not tested because policy network theory also generates the opposite policy implication
Shift towards policies favoured by spatially dispersed groups and non-traditional groups in general	Unclear how this could be tested
More vigorous measures to fight cybercrime	*Tested*

Table A1.2 Policy implications of developments in biotechnology

Policy implications	Judgement
More autonomous policies in general	Not tested because policy network theory also generates the opposite policy implication
Policy changes to increase the use of biotechnology, attract biotechnology-related foreign investment, and benefit the biotechnology sector in general	*Tested*
Stricter safety and environmental regulation of certain types of biotechnology, in particular genetic engineering	Not tested because not very interesting

Table A1.3 Policy implications of developments in health care technology

Policy implications	**Judgement**
Extension of existing safety and cost-benefit regulation to new health care products and processes	Not tested because not very interesting
Increasing pressure from insurers and employers for governments to allow the expansion of genetic testing of insurance applicants and employees	Not testable using past data because refers exclusively to the future
Increasing pressure on governments to legalize human cloning and inheritable genetic modification	Not testable using past data because refers exclusively to the future
Increasing pressure on governments to legalize, or refrain from criminalizing, new psychotropic drugs as these become safer and more employment friendly	Not testable using past data because refers exclusively to the future
More autonomous policies in general	Not tested because policy network theory also generates the opposite policy implication
Less autonomous policies in general	Not tested because policy network theory also generates the opposite policy implication
Increasing government control over health care	Unclear how this could be tested
More patient-centred health care	Unclear how this could be tested
More business-friendly policies in relation to manufacturers of pharmaceuticals and medical devices	Unclear how this could be tested

Table A1.4 Policy implications of developments in military technology

Policy implications	**Judgement**
More interventionist foreign policy stance in terms of threatening and taking military action	Not tested because this applies more to the United States than to European countries
Stronger policies on weapons of mass destruction (WMDs)	*Tested*
Increasing use of surveillance by police and internal security services	*Tested*
Stronger policies against cyberattacks	Adequate data not readily available

Continued

Table A1.4 Continued

Policy implications	Judgement
Moves to economize on the purchase of major weapon systems	Not tested because based on the false premise that better technology necessarily means higher spending
Less autonomous policies in general due to the unpopularity of raising taxes or cutting spending elsewhere to cover the rising costs of weapon systems	Not tested because policy network theory also generates the opposite policy implication and because the policy implication is based on the false premise that better technology necessarily means higher spending
Reduction or erasure of traditional boundaries between the military services	Not tested because not very interesting

Table A1.5 Policy implications of the growth and diversification of production and consumption

Policy implications	Judgement
More autonomous policies than if there was no economic growth	Not tested because policy network theory also generates the opposite policy implication
Decreasingly autonomous policies over time	Not tested because policy network theory also generates the opposite policy implication
Improvements to public services	Not tested because policy network theory also generates the opposite policy implication, that is, the proposition that more affluent people have less need of public services and therefore become more tax-averse
Adaptation of product and process regulation to ensure that new production technologies are covered	Not tested because not very interesting
Improvements in education and training	*Tested*
More vigorous measures to encourage and facilitate the use of new production technologies	Tested (and confirmed) but then dropped because derivation flawed
Maintenance of policies designed to enlarge domestic and overseas markets	Not tested because not about policy change
Less union-friendly policies	*Tested*
Less worker-friendly policies	*Tested*

Table A1.6 Policy implications of greater energy use

Policy implications	**Judgement**
More vigorous measures to ensure security of energy supply	Unclear how this could be tested
More vigorous steps to respond to climate change	*Tested*

Table A1.7 Policy implications of greater mobility

Policy implications	**Judgement**
More vigorous anti-congestion measures	Not tested because (1) king trend does not in fact imply more vigorous measures but continuation of existing anti-congestion policy; (2) expanding infrastructure contradicts the pressure to control greenhouse gas emissions; and (3) adequate data is not readily available in relation to other types of anti-congestion measures
More vigorous steps to respond to climate change insofar as it is caused by transport	*Tested*

Table A1.8 Policy implications of the shift to services

Policy implications	**Judgement**
Public policy that is more services-friendly	*Tested*
Less union-friendly public policy	*Tested*
Public policy that is less sensitive to the concerns of manufacturing unions and more sensitive to the concerns of health care workers	Adequate data not readily available
Public policy that is less sensitive to the concerns of the industrial working class	*Tested*
Less autonomous policies	Not tested because policy network theory also generates the opposite policy implication
Increased government spending on health care leading to corrective measures	Not tested because based on the false premise that improvements in technology necessarily mean higher spending

Continued

Table A1.8 Continued

Policy implications	Judgement
Increasing efforts to expand education and training	*Tested*
Increasing efforts to expand the supply of low-skill service jobs	Adequate data not readily available

Table A1.9 Policy implications of the growth in women's employment

Policy implications	Judgement
More women-friendly policies	*Tested*

Table A1.10 Policy implications of trade expansion

Policy implications	Judgement
More autonomous policies	Not tested because policy network theory also generates the opposite policy implication
Increasing assistance to export and import-competing producers	*Tested*
More vigorous policies to facilitate structural adjustment	*Tested*
More vigorous measures to combat illicit trafficking	*Tested*
Less militarily aggressive policies towards significant trading partners	Unclear how this could be tested

Table A1.11 Policy implications of the internationalization of production

Policy implications	Judgement
More autonomous policies	Not tested because policy network theory also generates the opposite policy implication
More TNC-friendly policies	*Tested*
More vigorous policies to limit damaging practices by TNCs	Adequate data not readily available
More vigorous policies to help workers displaced by structural adjustment	*Tested*
Greater international cooperation to limit locational competition	*Tested*
Policies designed to limit the internationalization of production	Not tested because it is now so widely accepted that such policies inhibit economic growth

Continued

Table A1.11 Continued

Policy implications	Judgement
A shift in emphasis towards policy instruments such as measures to encourage inward investment, improve infrastructure and skills, improve labour market efficiency and reduce business costs	*Tested*
Greater internationalization of law enforcement	*Tested*
Less militarily aggressive policies towards countries with which there are significant investment links	Unclear how this could be tested

Table A1.12 Policy implications of the internationalization of finance

Policy implications	Judgement
More autonomous policies	Not tested because policy network theory also generates the opposite policy implication
Government support for further financial liberalization	*Tested*
More business-friendly policies as defined by financial markets	*Tested*
Increasing international coopera-tion to limit locational competition for foreign investment	*Tested*
More vigorous measures to prevent international financial crises and minimize their impact when they do occur	*Tested*
More vigorous measures to combat international financial crime	*Tested*

Table A1.13 Policy implications of mass media expansion

Policy implications	Judgement
Policies more favourable to the media industry	Adequate data not readily available
Less restrictive policies in relation to the media industry and business in general	Adequate data not readily available
More conservative policies	Unclear how this could be tested, and policy network theory also generates the opposite policy implication

Continued

Table A1.13 Continued

Policy implications	**Judgement**
Shift towards policies favoured by spatially dispersed groups	Unclear how this could be tested
Less pro-business and less conservative policies	Not tested because policy network theory also generates the opposite policy implication

Table A1.14 Policy implications of climate change

Policy implications	**Judgement**
More vigorous steps to respond to climate change	*Tested*
More vigorous measures to facilitate adaptation to the effects of climate change	Adequate data not readily available
Less policy autonomy for governments	Not tested because policy network theory also generates the opposite policy implication

Table A1.15 Policy implications of population ageing

Policy implications	**Judgement**
Policies that are more favourable for older people in age-related areas such as pensions and health care	Not tested because policy network theory more strongly supports the idea that age-related spending will be cut (see below)
Less autonomous policies	Not tested because policy network theory also generates the opposite policy implication
More vigorous measures to improve labour productivity and maximize employment	*Tested*
Higher taxes and social contributions and/or cuts in age-related spending	*Tested*
More labour-friendly policies	Not tested because policy network theory also generates the opposite policy implication

Continued

Table A1.15 Continued

Policy implications	**Judgement**
Improving wages and conditions of military personnel and/or increasing use of new technology to improve their military efficacy, leading to higher spending and thus to financial and electoral problems and less policy autonomy	Adequate data not readily available
Less stress on fighting crime	Not tested because policy network theory also generates the opposite policy implication

Table A1.16 Policy implications of rising education levels

Policy implications	**Judgement**
More autonomous policies	Not tested because policy network theory also generates the opposite policy implication
Continued expansion of education	Not tested here because the data that would be used to test it is the same data that is used to identify the relevant king trend
Less autonomous policies	Not tested because policy network theory also generates the opposite policy implication
Move towards policies favoured by mass media	Unclear how this could be tested
More women-friendly policies	*Tested*
More liberal policies	Unclear how this could be tested
Less union-friendly policies	*Tested*
More employee-friendly policies	Not tested because policy network theory also generates the opposite policy implication
Move away from policies preferred by major churches	*Tested*
More vigorous measures against white-collar crime	Adequate data not readily available

Table A1.17 Policy implications of the trend towards smaller households

Policy implications	**Judgement**
Higher taxes, cuts in state spending and/or measures to require absent parents to provide more support for their children	Adequate data not readily available
Less autonomous policies as governments make more policy concessions to public opinion and non-state policy actors due to a weakening in their electoral standing caused by efforts to rectify deficits	Not tested because policy network theory also generates the opposite policy implication
Increasing funding and provision of affordable childcare	Not tested because whether smaller households means more single parent families is not clear
Measures to make employment regulation more family-friendly	Not tested because policy network theory also generates the opposite policy implication
Continued state support for two-parent families combined with increasing support for one-parent families	Not tested because contradicted by pressure from social conservatives to reduce support for one-parent families
Maintenance of measures to ensure that the supply of housing continues to rise	Not tested because does not refer to policy change
More vigorous measures to combat crime	Not tested because policy network theory also generates the opposite policy implication

Table A1.18 Policy implications of secularization

Policy implications	**Judgement**
Incremental erosion of state support for churches and church schools	Adequate data not readily available
Removal of policies that support or enforce traditional Christian morality where this conflicts with widely held secular norms	*Tested*
More vigorous measures to control crime and anti-social behaviour	Not tested because policy network theory also generates the opposite policy implication

Table A1.19 Policy implications of sexual liberalization

Policy implications	**Judgement**
Liberalization of regulation relating to sexual activity	*Tested*
More liberal abortion laws	*Tested*
Improved availability of contraception, plus expanded public sex education programmes and improvements in sex education in schools	*Tested*

Appendix 2
Hypotheses Generated by More Than One King Trend

One of the unexpected findings of this study is that different king trends often have similar or identical implications for public policy. Put another way, a large number of the policy implications and hypotheses tested are overdetermined in the sense that they are, according to the logic of policy network theory, implied by more than one king trend. These are listed in Table A2.1.

At the same time, however, it is important to note that overdetermination is not a serious problem for the analysis in this book because where an overdetermined hypothesis about a future policy trend is confirmed (not disconfirmed), all of the alternative lines of logic that generated the hypothesis are also confirmed (not disconfirmed) and therefore remain standing after the reality check imposed by the test.

Table A2.1 Hypotheses generated by more than one king trend

Policy trend hypothesis	**King trends from which hypothesis derived**
Greater efforts to open up new markets in foreign countries	Expansion of trade
	Internationalization of production
	Internationalization of finance
Granting independence to central banks	Growth and diversification of production and consumption
	Expansion of trade
	Internationalization of production
	Internationalization of finance

Continued

Table A2.1 Continued

Policy trend hypothesis	King trends from which hypothesis derived
Measures to make employment regulation more flexible Anti-union legislation (except not implied by population ageing)	Population ageing Rising levels of education Growth and diversification of production and consumption Shift to services Expansion of trade Internationalization of production Internationalization of finance
Deregulation of product market regulation	Expansion of trade Internationalization of production
Liberalization of investment regulation	Internationalization of production Internationalization of finance
Cuts in corporate tax	Internationalization of production Internationalization of finance
Enhanced active labour market policies	Population ageing Expansion of trade Internationalization of production
Greater efforts to agree on minimum international standards on (1) tax (2) labour regulation (3) environmental regulation	Expansion of trade Internationalization of production
Better childcare More women-friendly employment regulation	Population ageing Rising levels of education Growth of women's employment Trend towards smaller households
More liberal abortion laws	Rising levels of education Sexual liberalization Secularization Growth of women's employment
More vigorous measures to counter violence against women	Growth of women's employment Rising levels of education
Liberalization of regulation on homosexuality, contraception Better sex education	Secularization Sexual liberalization

Continued

Table A2.1 Continued

Policy trend hypothesis	**King trends from which hypothesis derived**
Tighter regulation of ICT	Developments in military technology
	Developments in ICT
	Internationalization of finance
Increasing use of surveillance	Developments in ICT
	Developments in military technology
	Expansion of trade
	Internationalization of finance
Increasing international cooperation in law enforcement	Expansion of trade
	Internationalization of production
	Developments in ICT
	Internationalization of finance
Tighter border controls	Developments in military technology
	Expansion of trade
	Internationalization of production

Appendix 3

Policy Implications and Hypotheses for which Endogeneity Might Be an Issue

One problem with testing the hypothesis that A causes B by investigating whether there is an observed correlation between A and B is that such a correlation is just as compatible with the hypothesis that B causes A. Where there is any theoretical or other reason to suspect that in fact B causes A, as well as or instead of the other way around, finding a correlation between A and B therefore does not unambiguously indicate that A causes B. This is the problem of endogeneity. Although this analysis has focused on how king trends do or do not influence policy change, in the cases of a number of policy implications of king trends it is possible that it is policy change that is driving king trends rather than the other way around. It is also possible that the causal arrow runs both ways, that is, that the king trend and the policy trend influence each other.

The following tables list all the hypotheses for which I could imagine that the causal arrow might run from policy trend to king trend rather than, or as well as, from king trend to policy trend, although it is important to note that endogeneity has not been definitively established for any of these. Endogeneity does not appear to be a possibility at all in relation to developments in health care technology, developments in military technology, greater energy use, increasing mobility, the expansion of mass media, climate change, population ageing, rising levels of education, or secularization.

As with overdetermination, however, it is important to note that endogeneity is not a significant problem for this analysis because even if confirming (not disconfirming) a king trend to policy trend hypothesis at the same time confirms a policy trend to king trend hypothesis, this does not change the fact that in such cases the king trend to policy trend hypothesis, and thus policy network theory, is left unscathed by the test. Devising and testing hypotheses that enable us to determine which way(s) the causal arrow really points, however, must be left to another day.

Table A3.1 Technological trend policy implications and hypotheses for which endogeneity may be an issue

Trend	**Policy implications (italics) and hypotheses**
Developments in ICT	*Shift towards policies designed to facilitate the development and use of ICT*
Developments in biotechnology	*Policy changes to facilitate the development and use of biotechnology*

Table A3.2 Economic trend policy implications and hypotheses for which endogeneity may be an issue

Trend	**Policy implications (italics) and hypotheses**
Growth and diversification of production and consumption	*Improvements in education and training:* expansion of education and training
	Less union/working-class friendly policies: more vigorous steps to secure wage restraint, such as granting independence to central banks; reforms to employment regulation designed to increase labour flexibility
Shift to services	*Less union/worker-friendly public policy, in particular manufacturing unions:* more vigorous steps to secure wage restraint, such as granting independence to central banks; reforms to employment regulation to increase labour flexibility
	Increasing efforts to expand education and training: expansion of education and training
	Opening domestic and international markets for services
Growth of women's employment	*More women-friendly policies:* liberalization of abortion
Expansion of trade	*Increasing assistance to export and import-competing firms:* greater efforts to open up new markets in foreign countries; achievement/maintenance of low inflation expectations via establishing/maintaining appropriate institutions and policies; expansion of education and training; more vigorous steps to secure wage restraint, such as granting independence to

Continued

Table A3.2 Continued

Trend	Policy implications (italics) and hypotheses
	central banks; reforms to employment regulation to increase labour flexibility; deregulation of product market regulation
	More vigorous policies to facilitate structural adjustment: enhanced active labour market policies
Internationalization of production	*More TNC-friendly policies:* liberalization of investment regulation; greater efforts to open up new markets in foreign countries; achievement/maintenance of low inflation expectations via establishing/maintaining appropriate institutions and policies; expansion of education and training; more vigorous steps to secure wage restraint, such as granting independence to central banks; reforms to employment regulation to increase labour flexibility; deregulation of product market regulation
	Less union-friendly policies: more vigorous steps to secure wage restraint, such as granting independence to central banks; reforms to employment regulation to increase labour flexibility
	More vigorous policies to facilitate structural adjustment: enhanced active labour market policies
Internationalization of finance	*More business-friendly policies as defined by financial markets:* establishing/maintaining low-inflation institutions and policies; liberalization of investment regulation; greater efforts to open up new markets in foreign countries; expansion of education and training; more vigorous steps to secure wage restraint, such as granting independence to central banks; reforms to employment regulation designed to increase labour flexibility

Table A3.3 Social trend policy implications and hypotheses for which endogeneity may be an issue

Trend	**Policy implications (italics) and hypotheses**
Smaller households	*Improved provision of affordable childcare and more family-friendly employment regulation*
Sexual liberalization	*Liberalization of regulation relating to sexual activity:* the progressive liberalization of regulation relating to homosexuality
	Improved availability of contraception and sex education: wider availability of contraception; better sex education

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