ADVANCES IN INTERNATIONAL ACCOUNTING

Volume 16

J. TIMOTHY SALE

ADVANCES IN INTERNATIONAL ACCOUNTING

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ADVANCES IN INTERNATIONAL ACCOUNTING VOLUME 16

ADVANCES IN INTERNATIONAL ACCOUNTING

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The Boulevard, Langford Lane
Kidlington, Oxford OX5 1GB, UK

First edition 2003

A catalogue record from the British Library has been applied for.

ISBN: 0-7623-1056-1
ISSN: 0897-3660 (Series)

♾ The paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).
Printed in The Netherlands.

CONTENTS

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REVIEWER ACKNOWLEDGMENT

The editors of *Advances in International Accounting* wish to thank the following individuals who served as ad hoc reviewers for Volume 16:

Barbara Apostolou	Louisiana State University, USA
Edward Douthett, Jr.	George Mason University, USA
Joseph Godwin	Grand Valley State University, USA
James Rebele	Lehigh University, USA

ORGANIZATIONAL CONTEXT AND SELECTION OF INTERNATIONAL ACCOUNTING SOFTWARE: AN EXPLORATORY STUDY

Ajay Adhikari and Hao Zhang

ABSTRACT

The demand for accounting software with international functionality has risen significantly with the increasingly global nature of business transactions. Our study, based on a survey of international U.K. firms, explores the possible relationship between organizational context and international attributes considered important by these firms in selecting international accounting software. Our results show significant influences of organizational size, structure, and maturity on the perceived need for international features of accounting software. Moreover, there is also evidence that U.K. firms consider technical multi-currency and multi-reporting functionality as the most important international features of accounting software. The implication from our results is that organizational context should be an important consideration in the selection and design of international accounting software.

Advances in International Accounting
Advances in International Accounting, Volume 16, 1–16

ISSN: 0897-3660/doi:10.1016/S0897-3660(03)16001-1

INTRODUCTION

Global competition, free-trade zones, and the revolution in information technology (IT) are among the factors that have contributed to unparalleled opportunities for firms with an international outlook. Competing in the global marketplace, however, entails a new set of accounting challenges. Instead of dealing in a single currency and a single set of accounting principles, firms may have to deal with multiple currencies and follow a myriad of accounting and tax rules. More importantly, the timely collection of relevant financial/managerial information via well-chosen Management Information Systems (MIS) becomes essential when a firm is to operate successfully in a global environment and with multi-country trading partners. As a result, there is an increasing demand for suitable accounting software packages to be integrated into the overall MIS that are capable of handling international issues and meeting users' needs. Within the European context, the political and economic uncertainty in relation to Monetary Union and Enlargement engenders additional accounting and MIS challenges now and in the future.[1]

However, there is a great deal of confusion regarding: (1) the choice of international attributes to be considered in designing international accounting software; and (2) the criteria by which the choice is made. Part of the confusion stems from a lack of informed understanding of user needs with respect to designing international accounting software packages and the relative scarcity of analytical frameworks by which to analyze the information when collected.[2] The result is that a large number of products with considerable variation in functionality and attributes can be argued to fall under the umbrella of international accounting software. Additionally, users often lack the experience and the opportunity to define their requirements for an international accounting software package. Many firms, especially small and medium-size firms, are relatively new to the international arena and, therefore, may not fully appreciate all of the international accounting and system issues involved. Given the above dynamics and the pace of IT revolution in relation to MIS of firms, how well system capabilities match user requirements (or system fit) is a serious concern in the selection and design of international accounting software.

A number of decision tools are now available to aid in the selection process for *domestic* accounting software reflecting the significant research conducted in this area (Bagranoff & Simkin, 1992; Borthick & Scheiner, 1988, for the U.S.; Haddleton, 1998; Meall, 1998, for the U.K./Europe). Several decision support software such as *Requirements Analyst* and *Accounting Decision Maker* have been designed to help firms to select among different domestic accounting software. In contrast, little research has been conducted to: (1) assess user needs in relation to international accounting software; and/or (2) develop assessment criteria to evaluate different international accounting software packages. While

some checklists and general guidelines have been proposed (Lebow & Adhikari 1995; O'Brien, 1995, for the U.S.; Ralph, 1998, for the U.K./Europe), they are largely anecdotal and ad hoc in nature. Moreover, it is fair to say that these studies have not attempted to address the issues of selecting international accounting software within a theoretical framework.

Thus, a gap in knowledge exists in view of the growing need and demand for international accounting software and the increasing number of software designers responding to this demand. The gap may be especially acute for the U.K./European firms for two reasons. First, U.K./European firms have to operate in a *more* international environment than their U.S. counter-parts due to the much smaller domestic markets. Second, there is virtually no academic research conducted in the areas of user needs and assessment criteria in relation to international accounting software.[3]

Without an informed understanding of users' needs, any evaluation scheme developed to assess different international accounting software products is unlikely to be effective. This in turn will impact the quality of the selection process resulting in a sub-optimal and expensive search process. Consequently, the chances of a good system fit between the needs of the user and the features of the international accounting software package will be substantially diminished.

Ours is an exploratory study in the form of a survey of U.K. firms, which seeks to expand the limited knowledge base in relation to selecting international accounting software. There are two principal objectives. The first is to address the question of whether the organizational context of a firm impacts user needs with reference to international accounting software, which is part of a firm's MIS. The second and related objective is to use the preliminary results to shed light on the empirical design of international accounting software.

While preliminary, the results of the study should be useful not only to future academic research in this area but also to both users and developers of international accounting software. It will not only provide a flexible analytical framework in which to evaluate different international accounting software packages, but also should inform the international accounting or system issues. Additionally, such information can also be of help to software developers in identifying the gaps in their product offerings and thus, enabling them to more effectively target their products to fit user needs.

ACCOUNTING SOFTWARE, MIS AND ORGANIZATIONAL CONTEXT

In their seminal paper on MIS, Mason and Mitroff (1973) proposed that "an information system consists of at least one PERSON of a certain PSYCHOLOGICAL

TYPE who faces a PROBLEM within some ORGANIZATIONAL CONTEXT for which he needs some EVIDENCE to arrive at a solution and the evidence is made available to him through some MODE OF PRESENTATION." In terms of selecting international accounting software, the PERSON may be construed as the financial director, the EVIDENCE financial well being of the firm, the PROBLEM making financial, managerial, strategic decisions in a global environment, the MODE OF PRESENTATION the chosen international accounting software.

While the Person, Evidence, Problem, and Mode Of Presentation are conceptually well-defined variables, it can be argued that the Organizational Context is less obvious but most relevant to the selection of the Mode of Presentation (e.g. international accounting software). The reason is that the notion of system fit implies a sufficient degree of compatibility between organizational context and mode of presentation. Thus, the mode of choice must be sensitive to the organizational context at the outset. A later paper by Ein-Dor and Segev (1978) went on to explore organizational context variables and their empirical measures. They conceptually divided organizational context into three categories: uncontrollable, partially uncontrollable, and controllable.

Uncontrollable variables are those taken as given because they are not under the direct control of the firm even in the long run. The uncontrollable variables include organizational size and organizational structure. The empirical implication for firms (software designers) is that they must be particularly sensitive to the uncontrollable variables in the selection (design) of international accounting software in order to ensure compatibility between organizational context and mode of presentation and thus MIS efficiency. Partially controllable variables are the ones that cannot be changed at will by the firm but are susceptible to change in the long run. As such, both firms and software designers must be sensitive to these variables at the outset in the selection and design of international accounting software. The partially uncontrollable variables include organizational resources and organizational maturity. Finally, controllable variables are those under the control of the firm. They include rank/location of the responsible executive and the steering committee.

A number of organizational context characteristics have been examined in relation to system selection and use (Cheney & Dickson, 1982; Raymond, 1985). In this study, we focus on two uncontrollable variables (organizational size and organizational structure) and one partially controlled variable (organizational maturity) in relation to the selection of international software. While we accept that the selection of these three variables does not imply that other variables may not be equally relevant within the analytical framework presented above, the exploratory nature of the study and operational problems common in international

business research often constrain the choice of variables selected. The three variables selected, along with the empirical measurement for each, are defined and discussed below. The relationship between these variables and selection of international accounting software are presented in the form of non-directional research questions.

ORGANIZATIONAL SIZE

While it may not be the case at the outset that small organizations should have more difficulties selecting international accounting software and that software designers should have more difficulties designing software for small organizations, it is not implausible that firms of different organizational size face different types of problems in relation to international accounting software. The differences are likely to find their expressions in resource availability and the degree of organizational formalization.[4] The implication is that the methodologies used by larger organizations for software selection may not be entirely satisfactory for smaller ones.

Smaller firms may be different from larger firms in that they may undertake fewer and less complex transactions than larger ones. In the context of international accounting, this would suggest that smaller firms would have a lower need for sophisticated international accounting software. If faced with a few, uncomplicated foreign currency transactions, the small firm could manually adjust for international accounting issues or use spreadsheets to make foreign currency reconciliation.

Another potential difference between firms of different organization size, as shown by previous research, is that smaller firms have more difficulty in acquiring acceptable software (DeLone, 1981). This is partly attributed to the lack of internal resources and the dependence of small firms on outside consultants. Smaller firms suffer from limited in-house knowledge and specialization in complex system and accounting issues (e.g. international accounting problems) and, therefore, rely more on the help of outside vendors and consultants (Borthick & Scheiner, 1988; Cragg & King, 1993). Consequently, one can expect a difference between firms of different size in their perceived choice of international features in accounting software.

The empirical measure used in this study for organizational size is total revenues.[5] The above discussion leads to the following research question:

Q1. Does organizational size influence the selection and design of international features in accounting software?

ORGANIZATIONAL STRUCTURE

Radebaugh and Gray (1997) suggest that the organizational structure of firms differs significantly according to the involvement in international business, which can be viewed as a spectrum ranging from limited import/export activity on the one end, and the establishment of wholly owned foreign subsidiaries on the other. The drastic difference in organizational structure, in the context of international firms, reflects the difference in the degree of international involvement, which implies the difference in the exposure to international accounting issues.

A firm that merely imports/exports might face only minor issues such as foreign party credit-check and foreign currency exchange exposure if the transaction is denominated in a foreign currency. Most firms in such situations will get outside help from either banks or an international accounting firm. Firms with substantial international dealing, however, may have to have well-developed in-house international accounting capability. For example, a firm with foreign subsidiaries must: (1) meet country-specific, external accounting and reporting requirements; (2) develop and implement an internal information/management system to monitor, evaluate, and control the performance of the foreign subsidiary; and (3) develop protocols and system capabilities to consolidate the financial results of the foreign subsidiary with those of the parent firm. Thus, the choice for international features in accounting software should vary among firms of different organizational structures defined by the dimension of different international involvement.

The empirical measure used for organizational structure in this study is the percentage of foreign sales. This measure is chosen because it accounts for the international dimension of organizational structure factors such as products-market units, profit centers, and divisions, etc. The above discussion leads to the following research question:

Q2. Does organizational structure influence the selection and design of international features in accounting software?

ORGANIZATIONAL MATURITY

A firm's need for international functionality in accounting software may also be materially influenced by organizational maturity, a partially uncontrollable organizational context variable. Firms with greater organizational maturity tend to have higher degrees of system formalization and greater availability of decision-relevant data. The empirical measure of organizational maturity in this study is the firm's listing status. Listed firms, relative to non-listed firms, tend to

be more mature or older, have more formal systems of management and control to provide more structured and frequent information to the capital markets. Listed firms, moreover, have to follow more onerous accounting reporting and disclosure requirements than non-listed firms. For example, listed firms in the U.K. have to follow specific requirements with regard to foreign currency transactions and translation. Consequently, the difference in decision-making and information-processing systems suggests that organizational maturity may have an impact on the choice for international features in accounting software.

The above discussion leads to the following research question:

Q3. Does organizational maturity influence the selection and design of international features in accounting software?

To explore these questions, we conducted a survey of U.K. firms engaged in international business. The next section discusses the methodology used for the survey.

METHODOLOGY

Research Instrument

Our survey requested information on the demographics of the firm and the importance that the firm would attach to a list of international features in selecting accounting software. For pre-testing purposes, a draft of the questionnaire was sent to ten U.K. companies engaged in international business. The questionnaire was revised based on the feedback received from the pre-test groups.

A total of 500 companies were included in the postal survey drawn from Dun and Bradstreet Data Base of U.K. Companies. The final questionnaire, accompanied by personal letters, was posted to the financial director of the firms. Two postings, a first posting and a follow-up posting were undertaken. The follow-up mailing was conducted three weeks after the first posting.

Twenty surveys were returned undelivered, 10 firms responded that they faced no international accounting issues, and 13 companies wrote back regretting their inability to participate for various reasons (company policy, etc.).[6] From the remaining pool of 457 firms we received 102 replies. We excluded 8 responses from companies not currently using or considering purchase of international accounting software giving us a final sample of 94 companies representing a 21% response rate. The response rate is adequate in comparison with other academic survey research in accounting and finance. The responses of early and late respondents stratified by the variables of interest (i.e. organizational size,

Table 1. Characteristics of Firms in Sample ($n = 94$).

	Number	% of Firms
Panel A: Distribution of firms by industry		
Industrial classification		
Service	20	21.3
Manufacturing	27	28.7
Wholesale & retail trade	15	16.0
Others	32	34.0
Panel B: Distribution of firms by size		
Annual sales revenue		
Less than £5 million	1	1.1
£5–150 million	12	12.8
£150–300 million	26	27.7
£301–450 million	10	10.6
£451–600 million	9	9.6
More than £600 million	36	38.3
Panel C: Distribution of firms by structure		
Number of foreign operations		
None	21	22.3
1–3	25	26.6
4–6	12	12.8
7–9	4	4.3
More than 9	32	34.0
Panel D: Distribution of firms by structure		
Percentage of foreign sales		
Less than 10%	42	44.7
10–20%	5	5.3
21–30%	9	9.6
31–40%	5	5.3
More than 40%	33	35.1
Panel E: Distribution of firms by maturity		
Listing status		
Unlisted	42	44.7
Listed	52	55.3

structure, and maturity) were examined. No significant differences were detected between early and late respondents along any of the dimensions.

The profile of the responding firms is presented in Table 1. The responding firms were fairly evenly distributed among the different dimensions. In general, persons responding from the firms held senior accounting/finance positions and had substantial experience in accounting software. Seventy-four percent of the individual respondents gave their job title as Financial Director or accounting

manager. Over 84% of the respondents indicated that they had six or more years of experience with accounting software.

Statistical Analysis

The items relating to international features of accounting were grouped into three factors (*multi-currency*, *multi-reporting*, and *multilingual*) in the questionnaire. The grouping was done based on checklists and an examination of international accounting software manuals. For the statistical analysis, all three factors (*multi-currency*, *multi-reporting*, and *multilingual*) were used.

Multi-currency refers to the ability of an accounting software program to handle automatic foreign currency conversions. It includes interface features such as simultaneous multi-currency viewing and multi-currency order entry and invoicing as well as technical accounting/finance features such as multi-currency ledger and calculation of foreign currency gains/losses. *Multilingual* refers to multiple language support for interface and report generation features in an accounting software package. Screen text help in different languages and generation of invoices and checks in different languages would be examples of multilingual features. *Multi-reporting* refers to the ability of an accounting software program to handle international accounting issues such as foreign currency translation, multi GAAP reporting, and international inter-company transactions. The items used for measuring the three factors are shown in Table 2.

The internal consistency of the items relating to the three international features factors was assessed using Cronbach's alpha. Items relating to the *multi-currency*, *multi-reporting*, and *multilingual* factors had Cronbach's alphas of 0.82, 0.86, and 0.94 respectively. As the representation can be considered reliable if Cronbach's alpha is greater than 0.6 (Nunnaly, 1978), the alphas indicate that the three factors exhibit internal consistency and measure the same underlying constructs.

Dependent Measures

Scores were calculated for the firms on the three dimensions of international features (*multi-currency*, *multi-reporting*, and *multilingual*). Aggregate scores for each international dimension were computed by summing the individual scores for each item included in a dimension. As a result, three variables corresponding to the three dimensions of international features of accounting software were created.

Independent Variables

For purposes of the statistical analysis, the pre-specified categories for each of the variables of interest (organizational size, organizational structure, and

Table 2. International Features Factors.[a]

Multi-currency features
Multi-currency ledger
Simultaneous multi-currency viewing
Multi-currency order entry & invoicing
Calculation of foreign currency gains/losses
(Cronbach's alpha 0.8232)
Multilingual features
Screen text/help different languages
Invoices, checks in different languages
Manuals different languages
Recognition/reporting on different conventions
(Cronbach's alpha 0.9359)
Multi-reporting features
International intercompany transactions
Foreign currency translation
Multi GAAP reporting
Segmental reporting
(Cronbach's alpha 0.8588)

[a] A few international features included in the questionnaire addressed issues other than those captured by the above three factors and therefore were not included in the three factors.

organizational maturity) were collapsed into two categories using a cut-off point that would, to the extent practicable, provide for approximately equal numbers in each category. In effect, three dummy variables (organizational size, organizational structure, organizational maturity) were used.

Control Variable

The nature of industry may also potentially affect a firm's need for international features in accounting software as the need may be industry-specific. To control for the possible industry effects, type of industry (service, manufacturing, wholesale & retail, others) was used as a control variable in the multivariate and univariate tests conducted for the study.

Data Analysis

Before testing the research questions, an overall Multivariate Analysis of Variance (MANOVA) was performed using, first, the three dimensions of international features of accounting software as dependent variables with organizational size (measured in annual sales), organizational structure (measured in the percentage of foreign sales), and organizational maturity (measured in listing status) as independent variables and industry type as the control variable.

The research questions were further tested using univariate analysis of variance (ANOVA) using the individual dimension scores as dependent variables and using organizational size, organizational structure, and organizational maturity as independent measures. Industry type is also included for control purposes.

RESULTS

The mean score and standard deviation for each of the individual international features in the questionnaire and the three factors is presented in Table 3. The minimum possible score is 1 and the maximum possible score is 5. Features that address technical core international accounting areas such as foreign currency translation and transactions were, in general, perceived to be most important. Non-accounting features were considered to be less important. Among the

Table 3. Descriptive Statistics for Individual International Features and Three International Feature Factors ($N = 94$).

	Mean	Std. Deviation
Individual items[a]		
Calculation of foreign currency gains/losses	3.73	0.96
Multi-currency ledger	3.60	1.27
Multi-currency order entry & invoicing	3.56	1.33
Foreign currency translation	3.51	1.09
Segmental reporting	3.41	1.19
Foreign currency exchange management	3.33	1.06
International payment methods	3.18	1.09
International intracompany transactions	3.10	1.26
Simultaneous multi-currency viewing	3.02	1.13
Multi GAAP reporting	2.74	1.22
Invoices, checks in different languages	2.52	1.38
International tax conventions	2.38	1.05
Recognition/reporting on different conventions	2.35	1.10
Manuals different languages	2.24	1.19
Multi-currency viewing	2.22	1.17
International feature factors[b]		
Multi-currency factor	3.48	
Multi-reporting factor	3.19	
Multilingual factor	2.34	

[a] The minimum possible score for any individual item was 1 and the maximum possible score was 5.
[b] Since each factor may comprise of several individual items the reported means are expressed on a one item basis for comparability purposes.

three factors, *multi-currency* (mean = 3.48) was considered the most important, followed by *multi-reporting* (mean = 3.19) and *multilingual* (2.34) respectively. This again suggests that users consider core international accounting (*multi-currency* and *multi-reporting*) issues as more important than non-accounting issues (*multilingual*) in the selection of international accounting software.

International Features and the Impact of Organizational Context

Table 4 reports the results of the multi and univariate analysis of variance to evaluate the influence of organizational context on the selection and design of international accounting software in the form of three research questions. MANOVA results indicate that organizational structure was highly significant while organizational size and organizational maturity were also significant at the 0.10 level. The interaction effects were not significant and were dropped from the model. The industry control variable was not significant. Thus, the results show that a statistically significant relation exists between organizational size, structure, and maturity (organizational context) and international features of accounting software (the mode of presentation).

Table 4. Summary for Importance of International Features of Accounting Software Multi and Univariate Analysis of Variance.

Statistic	Overall	Multi-Currency	Multi-Reporting	Multilingual
Organizational size				
F-Ratio	2.350	0.352	3.744	5.591
df	3.87	1.89	1.89	1.89
Sig. level	0.078	0.554	0.056	0.002
Organizational structure				
F-Ratio	10.473	9.392	31.768	10.267
df	3.87	1.89	1.89	1.89
Sig. level	0.000	0.003	0.000	0.002
Organizational maturity				
F-Ratio	2.241	6.854	1.488	0.993
df	3.87	1.89	1.89	1.89
Sig. level	0.089	0.010	0.226	0.322
Industry (control)				
F-Ratio	1.446	0.004	1.311	0.977
df	3.87	1.89	1.89	1.89
Sig. level	0.235	0.950	0.255	0.326

Table 5. Dependent Variable Means: Importance of International Features of Accounting Software.[a]

International Features	Entire Sample	Organizational Size		Organizational Structure		Organizational Maturity	
		Small $N = 49$	Large $N = 45$	Low $N = 47$	High $N = 47$	Unlisted $N = 42$	Listed $N = 52$
Multi-currency	13.915	14.061	13.756	12.872	14.957	14.833	13.173
Multi-reporting	12.766	12.1633	13.422	10.830	14.702	12.6905	12.8269
Multilingual	9.340	8.449	10.311	7.894	10.787	9.1667	9.4808

[a] Higher means indicate greater importance for international features. The minimum possible score for any factor was 4 and the maximum possible score was 20.

The relationships between the independent variables and the individual dependent measures were probed further using ANOVA. To illustrate the differences, means are reported for each of the groups of the independent variables on the three dimensions of international features of accounting software (Table 5). For research question Q1, Table 4 shows the univariate results for organizational size. The two dimensions, *multi-reporting* and *multilingual*, differ significantly ($p = 0.056$ and $p = 0.020$ respectively) while the third dimension, *multi-currency*, is not significant for the two size groups. For the two significant variables, the means for firms with large organization size (Table 5) are greater than for firms with small organization size. The results indicate that organizational size has a significant impact on the need for *multi-reporting* and *multilingual* in accounting software.

For the second research question Q2, Table 4 shows the multi and univariate results for organizational structure. All three international dimensions, m*ulti-currency* ($p = 0.003$), *multi-reporting* ($p = 0.000$), and *multilingual* ($p = 0.002$) are highly significant. Moreover, the means for firm with a more extensive organizational structure are consistently greater than for firms with a less extensive organizational structure for the three dimensions (Table 5). The results indicate that organizational structure has a significant impact on the need for international features in accounting software.

For the third research question Q3, Table 4 shows the multi and univariate results for organizational maturity. Only the *multi-currency* ($p = 0.010$) international dimension differs significantly in accordance with organizational maturity, indicating that organizational maturity has a significant impact on the need of *multi-currency* features in accounting software. The mean for firms with less organizational maturity is greater than for firms with more organizational maturity (Table 5). The result suggests that less organizationally mature firms appear to value the feature of *multi-currency* more.

The study presented above is exploratory and suffers from a number of limitations and, therefore, one must be cautious in generalizing the results. The possibility of omitted variables is one limitation. As discussed earlier, variables other than the ones selected for the study may also be relevant to the selection decision for international accounting software. Thus, consistent with its exploratory nature, this study should not be viewed as providing conclusive evidence but only as serving as a baseline for future research.

DISCUSSION AND CONCLUSIONS

This article presented the results of a survey of U.K. companies focused on the possible relation between organizational context and the international features in accounting software. The results of the study indicate that international U.K. companies consider technical multi-currency and multi-reporting functionality as the most important international features in the selection of international accounting software. The results also show that the significant impacts of organizational size, structure, and maturity on the need for international features of accounting software. The implication is that organizational context is an important consideration in the selection of international accounting software.

Firms with large organizational size perceive *multilingual* and *multi-reporting* features to be more important in the selection of international accounting software. Firms with an extensive international structure perceive *multi-currency*, *multi-reporting*, and *multilingual* features to be more important in the selection of international accounting software. Additionally, less organizationally mature firms perceive *multi-currency* features to be more important.

The preliminary results of our exploratory study have implications for parties interested in either selecting or designing international accounting software. The study provides evidence to suggest the importance of organizational context in relation to the selection of international accounting software. The policy of "one size fits all" is not feasible for the development of international accounting software. While more refined delineation on the nature of the relation between organizational context and accounting software awaits further research, software developers should do well to be sensitive to organizational context factors in developing and identifying the gaps in their product offerings. In so doing, they can be more effective in targeting their products to fit users' needs.

Lastly, notwithstanding the exploratory nature and limitations of the study, the results also suggest promising avenues of future research in accounting software, which is becoming increasingly relevant given the importance of Management Information Systems and the rapid pace of the Information Technology revolution.

The study provides baseline information on and an analytical framework of organizational context in which future research on the selection and design of international accounting software can be built upon and compared. Consideration of other relevant variables, larger sample sizes, and stronger methodological designs should also provide clearer insights to develop a more formal model for selecting international accounting software.

NOTES

1. While high-end enterprise resource planning (ERP) systems (examples, Baan, JDEdwards, Peoplesoft, SAP) have offered broad international accounting functionality for some time, these systems are very expensive and complicated to install with major installations sometimes running into years. As a result, the target market for ERP systems has largely been confined to the very large multinational organizations. In recent years with the slowdown in the ERP market reflecting partly a saturation of the high-end system market and partly the postponement of major software acquisitions by companies as a result of economic uncertainties, ERP vendors have increasingly started turning their attention to the midrange system market.
2. Accounting software packages may not be distinctly identified as "international accounting software." A better descriptor may be "accounting software packages with international accounting features." To simplify the exposition, we use the two terms interchangeably in the manuscript.
3. In fact, a commercial research conducted by accounting software provider, Square Sum, shows that a third of U.K./European accounting packages do not provide adequate reporting and management accounting functionality (see Anonymous, 2000).
4. See, e.g. DeLone (1981), Raymond (1985), Borthick and Scheiner (1988), and Cragg and King (1993).
5. Number of employees is also often used as a proxy for size in many studies. Total revenues was, however, chosen as the measure in this study because it is the more popular size measure used by software vendors to stratify the market in targeting their products.
6. Companies that are solely importing or/and exporting may face no international accounting issues if most transactions are denominated in sterling.

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THE TIMELINESS OF CORPORATE REPORTING: A COMPARATIVE STUDY OF SOUTH ASIA

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ABSTRACT

This study examines the timeliness of corporate annual reporting in three South Asian countries, namely, Bangladesh, India and Pakistan. Based on a large sample of 558 annual reports for the year 1998, it is found that around 90% of the companies' balance sheet end date falls in June and December in Bangladesh, March in India, and June and September in Pakistan. The audit lag is 162 days, 92 days and 145 days in Bangladesh, India and Pakistan, respectively. While the audit lag, preliminary lag and total lag are significantly lower in India compared to Bangladesh and Pakistan, a substantial proportion of companies take more time than allowed by the Companies Act in each country. A multivariate regression analysis indicates that financial year-end date is a significant determinant in each country. The size of the audit firm, as measured by the factor loading of audit fees, number of reporting entity audited by an audit firm and international linkage, indicates large audit firms take significantly less time in India and Pakistan. Profitability and corporate size are significant determinants only in Pakistan. There is no statistical evidence to support monitoring hypothesis, as proxied by Zmijeski's financial condition index. The 2nd stage regression results suggests that only audit lag is significantly associated with the time taken by companies to submit their annual reports to the Stock Exchange and to

Advances in International Accounting
Advances in International Accounting, Volume 16, 17–43

ISSN: 0897-3660/doi:10.1016/S0897-3660(03)16002-3

hold the annual general meeting in each country. The results suggest that timeliness can be improved by reducing the delays in verifying the year-end accounts. Possible explanations for these findings along with limitations and implications are provided.

INTRODUCTION

The timeliness of corporate financial reporting is an important qualitative attribute, which requires that financial information should be made available to users as rapidly as possible in order to make corporate financial statement information relevant and useful to users for decision making. Timely financial statement information helps in efficient allocation of resources by reducing dissemination of asymmetric information (Statement of Financial Accounting Concepts No. 2, 1980), by improving pricing of securities (Chambers & Penman, 1984, p. 32), and by mitigating insider trading, leaks and rumors in the market (Owusu-Ansah, 2000).

In emerging economies, the provision of timely information in the corporate report assumes more importance since other non-financial statement sources such as media releases, news conferences and financial analysts are not well developed and the regulatory bodies are not as effective as in Western developed countries (Wallace, 1993). Prior empirical studies replete with examining the timeliness (reporting lag or delay) of corporate reporting, its determinants and the effect of timeliness on security valuation in developed and newly industrialized economies (Ashton et al., 1989; Bamber et al., 1993; Courtis, 1976; Davies & Whittred, 1980; Dyer & McHugh, 1975; Gilling, 1977; Givoly & Palmon, 1982; Jaggi & Tsui, 1999; Ng & Tai, 1994). However, little information exists on the reporting lag of corporate financial statements in the context of emerging economies (other than Abdullah, 1996; Owusu-Ansah, 2000), despite calls for additional research on reporting lag focusing on different countries, different time periods and additional explanatory factors (Ashton et al., 1989).

Further, with globalization of trade, government policies emphasizing market-oriented economies and the recent growth of capital markets, a study of corporate timeliness in emerging nations has even become more relevant for international and domestic investors. This study examines this important issue by undertaking a comparative analysis on corporate reporting lags and their determinants by using a large sample of listed companies in three emerging countries in South Asia – Bangladesh, India and Pakistan.

Bangladesh, India and Pakistan, together formerly known as the Indian sub-continent, occupy an important position in the Asian region in terms of geographical location, population and economic potential. The stock markets in all three countries have been in existence for more than 80 years and have

experienced rapid growth in recent times both in number of listed companies and volume of trading. Following liberalization of economic policies, overseas direct investment and participation in the securities markets in these countries have increased many folds, state ownership in the productive sector has reduced and private sector investments have been expanded. At the end of 1998, the total market capitalization of the stock exchanges in Bangladesh, India and Pakistan was about US$1,034 million, US$105,188 million and US$5,418 million, respectively (IFC, 1999), with each achieving positive economic growth in the last decade. In 1998, there were 5,860 firms listed on the Mumbai (formerly Bombay) Stock Exchange in India, which is the second largest in the world based on the number of listed firms (Table 1). The accounting professional bodies in these countries have established a regional body called the South Asian Federation of Accountants (SAFA) to harmonize accounting and reporting practices in the region within the framework of the South Asian Regional Cooperation (SARC).[1]

The objective of this study is to examine the:

(1) diversity of corporate financial year-end balance dates;
(2) inter-country and inter-company reporting lags; and
(3) firm-specific factors associated with the variability in reporting lags of listed companies in Bangladesh, India and Pakistan.

Table 1. Some Socio-Economic and Demographic Indicators in 1998.

Indicator	Bangladesh	India	Pakistan
Area (sq km)	147,570	3,287,263	796,095
Estimated population (million)	126.50	966.0	141.88
Adult literacy rate (%)	42.00	52.11	37.80
Number of universities	12	228	38
GDP (in million U.S.$)	42,775	383,429	61,667
GNP per capita (US$)	345.90	450.00	444.00
Real growth rate (1990–1997)	3.30	4.30	4.00
Agricultural to GDP (%)	30.00	25.00	24.70
% of investment to GDP	20.90	24.00	15.20
Market capitalization (US$ in millions)	1,034	105,188	5,418
Number of listed companies	208	5,860	773
World rankings, no. of listed companies	NA	2	12
Value traded (US$ in millions)	793	64,498	9,102
World rankings, value traded	NA	19	39
Number of stocks in IFC global index	49	142	13

Sources: International Finance Corporation (IFC) (1999), *Emerging Stock Markets Fact Book*, Washington, DC, and Economic and Social Commission for Asia and Pacific (1999), Statistical Yearbook.

INSTITUTIONAL AND LEGAL REQUIREMENTS FOR TIMELY REPORTING

For listed companies, there are primarily two sources that govern timely reporting: (1) the Companies Act and (2) the Stock Exchange listing requirements. The Companies Act, 1994 in Bangladesh requires that the first annual general meeting (AGM) must be held within eighteen months from the date of incorporation and the subsequent general meeting must be held within fifteen months from the 1st AGM (Section 81). This provision suggests that public limited companies have a maximum of nine months to prepare annual accounts and to present the accounts to the shareholders for approval at the AGM. The Companies Act, 1956 in India and the Companies Ordinance, 1984 in Pakistan, however, allow companies a maximum of six months after their balance sheet year end date to hold their AGM. The Acts in all three countries stipulate that the annual accounts are audited by a qualified chartered accountant and the audited accounts are sent to shareholders at least 14 days prior to holding the AGM. Companies must also submit copies of the annual financial report to the Registrar of Joint Stock Companies. There are penalties for non-compliance with these provisions of the Acts.

With regard to Stock Exchange listing rules on the release of audited financial statements, the provisions are consistent with those of the Companies Act. According to the listing regulations of the Dhaka Stock Exchange (DSE) in Bangladesh (Section 19), a listed company must hold its AGM within nine months following the close of its financial year and presents the audited financial statements to shareholders for approval at the AGM. In India and Pakistan, however, the listing agreement allows a maximum period of six months unless an extension is sought and approved by the council of the Stock Exchange of the listed firm. Companies are required to submit audited annual report approved by the directors to the relevant Stock Exchange at least 14 days (21 days in Pakistan) before holding the AGM.

REVIEW OF LITERATURE

As mentioned earlier, research on corporate timeliness has mainly focused on explaining variability of reporting lags by employing selected corporate characteristics derived from financial statements and questionnaires. As with other research on corporate reporting, these studies have been undertaken primarily on economically developed and newly developed economies.

Dyer and McHugh (1975) provided impetus to research on timeliness of corporate reporting by examining the association between reporting lag and corporate size, profitability and year-end date by utilizing a sample of 120 listed companies

in Australia over the period 1965–1971. They reported that total lag, auditors' signature lag and preliminary lag had slightly increased from 102 days to 118 days, from 85 days to 91 days, and from 74 days to 81 days, respectively. Total lag was defined as the number of days from the reporting entity's financial year-end to the receipt of the published annual report at the Sydney Stock Exchange. Auditors' signature lag was defined as the difference between financial year-end and the auditors' signature stated on the annual report and preliminary lag as the difference between the receipt of preliminary financial statement by the Sydney Stock Exchange and the financial year-end date. They also report a significantly negative association between company size and total lag in each year and a significantly positive association between year-end closing period of the reporting entity and total lag.

Whittred (1980) replicated Dyer and McHugh (1975) by extending the study period from 1992 to 1997 using a sample of 100 companies listed on the Australian Associated Stock Exchanges (AASE) (now the Australian Stock Exchange). He found that reporting lag was comparable with Dyer and McHugh's findings, and had not decreased significantly as a result of the introduction of a listing regulation that required companies to publish annual reports within four months from the financial year closing date.[2] Courtis (1976) empirically tested reporting pattern of 204 listed companies in New Zealand and found that the total average total reporting lag was 128 days, with a range between 53 days and 316 days. He further investigated the association between audit lag and four corporate characteristics, namely, company age, number of pages in the annual report, number of shareholders, and industry classification, and found only industry difference was significantly associated with audit lag. Gilling (1977) extended Courtis (1976) by incorporating audit firm characteristics and found that big international audit firms, on average, took a shorter time (53 days) to complete audits compared with 90-day audit period for small audit firms in New Zealand. Later, Garsombke (1981) examined 120 U.S. companies and found longer audit lag for companies reporting between January and March year-ends. Davies and Whittred (1980) also found longer audit lag for firms that ended financial year in June in Australia.

While the above studies applied univariate statistical tests to examine the association between corporate characteristics and reporting lag, recent studies have focused only on audit reporting lag and applied multivariate analysis to mitigate collinearity problems and to develop a model to increase power in explaining variability in audit delay. Ashton et al. (1987) undertook a study of 488 U.S. firms audited by Peat Marwick Mitchell and Company (now KPMG) using a multivariate approach. They examined 14 client specific variables, which were obtained from corporate annual reports and questionnaires mailed to managing

partners of the audit firm. They found that total revenue, audit complexity, internal control quality, the mix of interim and final work, and company's listing status are significantly associated with audit reporting lag. However, the explanatory power of the multivariate model was modest, as measured by adjusted R^2, at only 26.5%. Later, Ashton et al. (1989) undertook a study on audit lags of 465 Canadian firms over a period of five years from 1977 to 1982. They found that client's industry, the type of audit opinion, reporting of extraordinary items, and whether the firm has incurred loss or not were significantly associated with audit reporting lag for at least four of the six years. Three additional variables such as total assets, clients' financial year-end and audit firm size were found to be significant for three or fewer years.

Carslaw and Caplan (1991) extended Ashton et al. (1989) to examine the effects of nine variables on audit lag in New Zealand using data from 245 and 246 listed firms for 1987 and 1988, respectively. Seven of the nine variables were adapted from the Ashton et al.'s (1989) study, these being total assets, client industry, the sign of net profit, extraordinary items, type of audit opinion, financial year-end and audit firm size. Two new additional variables were company ownership and the firm's leverage. The results showed that total assets and the sign of net profit were significant across both years. Four variables, namely, client industry, reporting of extraordinary items, company ownership, and leverage were significant for a single year. Bamber et al. (1993) focused more on audit related dimensions to develop an audit delay model based on U.S. firms. They incorporated audit complexity, audit firm technology (structured vs. unstructured audit approach), client financial condition and ownership structure, in addition to firm size and earnings. Their results show that client financial condition, ownership pattern and audit complexity were positively related to audit delay. Additionally, Bamber et al. (1993) found structured audit approach took more time to complete the audit process.

Ng and Tai (1994) and Jaggi and Tsui (1999) have examined the impact of company specific characteristics on audit delay in Hong Kong. Drawing on, mainly, Ashton et al. (1989) and Carslaw and Caplan (1991), Ng and Tai (1994) found company size and the degree of diversification were significantly associated with audit delay in both 1991 and 1992 and extraordinary items and financial year-end in one year only. Jaggi and Tsui (1999) extended Ng and Tai (1994) by incorporating firm's financial condition, ownership control and audit firm technology following Bamber et al. (1993). They obtained data from 393 firms listed on the Hong Kong Stock Exchange over a period of three years from 1991. Their results show that firm size, firm's financial condition, audit approach, degree of diversification and audit opinion were significant explanatory variables for audit delay in Hong Kong.

As mentioned before, only two studies on corporate timeliness have been undertaken in the context of emerging nations, these being Abdullah (1996) and Owusu-Ansah (2000). Abdullah examined the relationship between corporate specific attributes and audit delay for listed firms in Bahrain, and reported that company size and leverage were significant variables. The recent work on timeliness is by Owusu-Ansah (2000) for Zimbabwe. He employed size, leverage, profitability, reporting of extraordinary items, financial year-end, operational complexity, and company age as determinants of reporting lag. A two-stage multiple regression model identified size, profitability and company age as significant determinants of reporting lags of 47 listed companies in Zimbabwe. The paucity of research in emerging economies demonstrates a need for better understanding on corporate timeliness by undertaking individual as well as comparative studies in these countries.

MODEL DEVELOPMENT AND VARIABLES

Following prior research, five audit-related and firm-specific variables have been selected in order to evaluate the determinants of these variables on timeliness of reporting in Bangladesh, India and Pakistan. These variables are: company size (LTASS), sign of earnings (EATDUM), company financial condition (ZFININDEX), size of audit firm (SAF), and company year-end (FINYR). Ashton et al. (1989) suggested to incorporate specific internal audit related variables such as the number of auditors assigned to the audit engagement, the efficiency of the internal control department, time spend and the degree of overtime actually spent on the job. However, Ng and Tai (1994) suggested that the use of these additional variables does not improve significantly the model's explanatory power on those that used only publicly available information. Further, in the context of the countries selected, it is not possible to obtain this information mainly due to a lack of data and the partnership type organizational structure of audit firms. Therefore, only publicly available sources such as corporate financial statements, proxy form and notice of the AGM are used to extract the required information. Multivariate tests are employed to assess the significance of the explanatory variables on reporting lags.

Reporting Lag

Operational definition of reporting lag varies in the literature depending on the research design and context. Following Dyer and McHugh (1975), Courtis (1976)

and Whittred (1980), and based on the availability of information, the following three reporting lags have been defined:

(1) Audit lag (ADLAG) – interval of days between the balance sheet closing date and the signed date of the auditor's report stated in the corporate annual report.
(2) Preliminary lag (PRELAG) – interval between the balance sheet closing date and the date of notice of the AGM when companies are required to submit their audited accounts to the Stock Exchange.[3]
(3) Total lag (TOTLAG) – interval of days between the balance sheet closing date and the date of the AGM.

Determinants of Reporting Lag

Company Size (LTASS)

Corporate size has been found to be a significant factor associated with reporting lag (see, for example, Ashton et al., 1989; Carslaw & Caplan, 1991; Davies & Whittred, 1980; Jaggi & Tsui, 1999; Ng & Tai, 1994; Owusu-Ansah, 2000). A negative association is hypothesized and empirical results have, generally, supported this with some exceptions (for example, Ashton et al., 1987).

Several reasons have been put forward for a negative association between reporting lag and the reporting firm's size. First, larger firms have more resources to establish sophisticated internal control systems and to use auditors on a continuous basis, thus enabling the auditors to carry out more interim compliance and substantive tests of year-end balances (Ng & Tai, 1994). Second, larger firms are subject to more public scrutiny and are followed by a large number of investment and media analysts who review their performance for investment decision-making, thus putting pressure on these firms to release financial information on a more timely basis (Dyer & McHugh, 1975; Owusu-Ansah, 2000). Finally, larger companies may be able to exert greater pressures on the auditor to start and complete the audit on time (Carslaw & Caplan, 1991).

In this study, $\log_{10}$ of the book value of total assets at balance date is used to measure company size (Davies & Whittred, 1980; Jaggi & Tsui, 1999; Owusu-Ansah, 2000). Consistent with prior research, a negative association between company size and each of the three measures of reporting lag is expected.

Sign of Earnings (EATDUM)

Prior research documents that managers are prompt to release good news compared to bad news (Chambers & Penman, 1984; Ng & Tai, 1994). An auditor may take a cautious approach if he/she believes that a loss is going to increase the

likelihood of financial failure or management fraud, and therefore the probability of litigation by the stakeholders for failure to take due care and diligence (Carslaw & Caplan, 1991).

Consistent with prior studies (Ashton et al., 1989; Carslaw & Caplan, 1991), a dummy variable is used where 1 is assigned to indicate a loss, otherwise 0. A positive association between reporting lag and the sign of earnings is expected. To test the sensitivity of the analysis, a continuous net income/loss is also used in the model.

Financial Condition (ZFCINDEX)

Several studies examined the effects of a firm's financial condition on reporting delays by examining profitability, leverage and liquidity separately (Abdullah, 1996; Carslaw & Caplan, 1991; Owusu-Ansah, 2000). In South Asia, government sponsored financial institutions such as industrial banks and state owned commercial banks provide a substantial portion of capital and monitor the operations of the borrowing entity. In some instances, up to 70% of the total capital requirements are financed by industrial banks. The short-term money market is also dominated by state owned commercial banks. Consequently, rather than relying on one measure of risk, a combination of other financial indicators may be necessary to capture financial risk. Prior studies in emerging nations did not find any significant association between reporting delays and debt and profitability (Abdullah, 1996; Owusu-Ansah, 2000).

In this study, a combined index is used to reflect a firm's financial condition following Zmijewski (1984) (used by Bamber et al., 1993; Jaggi & Tsui, 1999). From an auditor's perspective, Jaggi and Tsui have argued that a firm with weak financial condition poses a greater audit risk, which in turn increases auditors' time to review the accounts.

Although several bankruptcy models have been developed in the U.S., no such model has been developed in the context of emerging nations. However, Jaggi and Tsui (1999) have argued that the Zmijewski (1984) model is relevant for other countries such as Hong Kong. They found a significant positive association between audit delay and financial condition. In this study also, we use Zmijewski's (1984) model shown below:

$$\text{ZFC} = -4.336 - 4.513(\text{ROA}) + 5.679(\text{FINL}) + 0.004(\text{LIQ})$$

where:

ZFC represents an estimated risk index of the financial condition of the company. The higher the value of the index the higher the propensity to fail and the weaker the financial condition (Jaggi & Tsui, 1999).

ROA is measured as the net income divided by total assets multiplied by 100;

FINL as the ratio of total debt to total assets; and

LIQ as the ratio of current assets to current liabilities.

A positive association between the index and reporting delay is expected.

Size of Audit Firm (SAF)

Consistent with prior research (such as Iman, Ahmed & Khan, 2001; Ng & Tai, 1994), it can be argued that larger audit firms in emerging countries (henceforth, international audit firms) would complete audits more quickly because they have greater staff resources and better experience in auditing listed companies. International audit firms may enjoy economies of scale in the provision of audit services and are more efficient in verifying accounts compared with smaller domestic audit firms. On the other hand, larger firms are concerned with reputation loss due to poor audit service, therefore would spend more time to ensure accounts are in order before an opinion is expressed.

Prior studies, categorized audit firms based on whether external auditors belong to a "Big 5" international audit firm or not. However, in Bangladesh, India and Pakistan such dichotomous classification is not possible because "Big 5" international accounting firms are not well represented in these countries, especially in Bangladesh and Pakistan. However, several international audit firms have representatives who are selected based on domestic reputation, training and experience of senior audit personnel, and quality of audit services.

Because of the problem associated with solely utilizing big vs. small categorization and its inherent subjectivity in South Asia, a continuous variable is used. The variable is the factor score extracted from three variables namely audit fees (AUDFEE), number of entities audited by an audit firm (NUMFIRM) and a dummy variable of small (zero) or large (one) based on international linkage (branch office of a Big 5 accounting firm/linkage via local firm) and local reputation. In doing such categorization, advice from academics was sought to minimize researcher's subjectivity. Rationale for selecting audit fees, number of reporting entities audited by an audit firm and size of audit firm can be obtained from (Francis, 1984; Karim & Moizer, 1996).

The factor score is obtained from principal component analysis using varimax rotation and directly put into the regression estimation. The factor analysis extracted one factor with an eigen value of 1.786 and an explanatory power of about 60%. The factor analysis for Bangladesh, India and Pakistan also resulted in one factor with an eigen value (percent of variation) of 1.689 (56.302), 2.003 (66.76) and 1.915 (63.83), respectively.

Company Year-End (FINYR)

Most of the listed firms have their year-ends either in June or December in Bangladesh, in March in India, and either in June or September in Pakistan. These months are considered to be busy seasons. According to Ng and Tai (1994), performing audits during busy season are expected to cause delay because of difficulties with scheduling. On the other hand, audit firms may employ more audit staff and pay overtime to complete audits on time. In the context of emerging countries, it is costly to complete an audit on schedule because audit firms may have difficulties in finding trained audit staff since such countries always suffer from shortage of qualified accounting staff.[4] So, recruiting additional staff by an audit firm may not be an option, which will prolong the audits and hence delay the releasing of annual financial statements by the reporting firm. Consequently, a positive association between financial year-end and reporting lag is posited in this study.

A dummy variable is used in the model. Companies completing the financial year during the busy season are assigned 1, otherwise 0.

Model Specification

Prior research has found evidence that audit lag determines both preliminary lag and total lag since the number of days the company takes to release its year-end financial report is dependent on the number of days the company auditors take to certify its accounts (Owusu-Ansah, 2000). This means the events are sequential in which audit lag determines other lags but not vice versa, suggesting that simultaneity between the events do not exist. Consequently, we develop a partial 2SLS model in which audit lag is determined first using all the explanatory variables (Eq. (1)). The estimated value for audit lag from Eq. (1) is then used as an explanatory variable for preliminary lag and total lag in Eqs (2) and (3) in order to mitigate correlation with the error term and to obtain consistent and reliable estimator of the coefficient on reporting lag (Gujrati, 1995).

The following three linear equations presents the model that will be tested using multivariate statistical procedures:

$$\begin{aligned} \text{ADLAG} = {} & \alpha + \beta_1 \,\text{LTASS} + \beta_2 \,\text{EATDUM} + \beta_3 \,\text{ZCFINDEX} \\ & + \beta_4 \,\text{SAF} + \beta_5 \,\text{FINYR} + \varepsilon \end{aligned} \tag{1}$$

$$\begin{aligned} \text{PRELAG} = {} & \alpha + \beta_1 \,\text{ADLAG}^* + \beta_2 \,\text{LTASS} + \beta_3 \,\text{EATDUM} \\ & + \beta_4 \,\text{ZCFINDEX} + \beta_5 \,\text{SAF} + \varepsilon \end{aligned} \tag{2}$$

$$\text{TOTLAG} = \alpha + \beta_1 \text{ADLAG}^* + \beta_2 \text{LTASS} + \beta_3 \text{EATDUM} + \beta_4 \text{ZCFINDEX} + \beta_5 \text{SAF} + \varepsilon \quad (3)$$

where:

ADLAG = Audit lag;

ADLAG* = Predicted value of ADLAG from Eq. (1).

PRELAG = Preliminary lag;

TOTLAG = Total lag;

LTASS = Log_{10} of the book value of total assets at the end of financial year;

EATDUM = Dummy variable for the sign of net profit; 1 if the company reports operating loss, otherwise 0;

ZFCINDEX = Financial condition as defined by Zmijeski's financial condition index;

SAF = A continuous variable to represent size of the reporting entity's audit firm;

FINYR = Dummy variable for financial year-end; 1 for busy period, otherwise 0;

α, β and ε are intercept, beta coefficient and error term, respectively.

Following Owusu-Ansah (2000), FINYR is dropped from Eq. (2) since this variable is audit related and is not expected to influence managerial decision to hold the AGM or submission of financial statements to the Stock Exchange.

DATA COLLECTION

The population for this study consists of all non-financial companies listed on the Dhaka Stock Exchange (DSE) in Bangladesh, the Mumbai (Bombay) Stock Exchange (BSE) in India and the Karachi Stock Exchange (KSE) in Pakistan at the end of 1998. There were 185 non-financial listed companies on the DSE, 4,890 on the BSE and 621 on the KSE at the end that year, respectively. A list of company name with mailing address of 150 companies listed on the DSE, 500 on the BSE and 300 on the KSE was prepared. Letters were sent to the each company's head office with a request to mail its 1998 corporate annual report. However, only 40 reports were collected in this way. Later on, the DSE in Bangladesh, Research Development Association in India and Paksearch in Pakistan were contacted to send annual reports for the year 1998.[5]

Table 2. Number of Sample Companies by Country.

	Bangladesh	India	Pakistan	Total
Annual reports received	120	239	226	585
Missing information	5	13	9	27
Usable annual reports	115	226	217	558

In total, 545 annual reports for the year 1998 were collected from these organizations. However, 27 companies were dropped from the analysis due to missing data and extensions granted by the Stock Exchanges, leaving 558 companies for use in this study. Table 2 shows the number of sample companies according to country.

EMPIRICAL FINDINGS

Pattern of Reporting Date

Table 3 shows the pattern of reporting dates in Bangladesh, India and Pakistan. The table shows diversity in reporting end period, as companies appeared to have chosen different periods for financial reporting which do not always coincide with the end of tax year-end. In Bangladesh, the most popular months are June and December, with 91.3% of the sample companies balancing their books in these two months. Though the fiscal year ends in June in Bangladesh, about 57% of companies have chosen other months, including December (38.3%). In India, an overwhelming majority (86%) of the companies, however, complete their financial period coinciding with the fiscal period ending 31 March. Other months include

Table 3. Pattern of Corporate Reporting Date.

Reporting Month	Bangladesh		India		Pakistan		Total Sample	
	No.	%	No.	%	No.	%	No.	%
January	3	2.6	1	0.4	1	0.5	5	0.9
March	3	2.6	194	85.9	0	0.0	197	35.3
June	61	53.0	3	1.3	124	57.2	188	33.7
July	0	0.0	1	0.4	0	0.0	1	0.2
August	1	0.9	0	0.0	1	0.5	2	0.4
September	3	2.6	10	4.4	80	37.8	93	16.7
November	0	0.0	1	0.4	2	0.9	3	0.5
December	44	38.3	16	7.2	9	4.1	69	12.4
Total	115	100.0	226	100.0	217	100.0	558	100.0

December (7.2%) and September (4.4%). In Pakistan, though the majority of companies (57.2%) coincided their reporting period with fiscal end period (30 June), a substantial proportion of companies (42.8%) have released their annual reports at other times, primarily in September (37.8%) and December (4.1%).

Profile of Reporting Lag

Table 4 presents total lag (TOTLAG), audit lag (ADLAG) and preliminary lag (PRELAG) in the three countries. The TOTLAG, i.e. the average time between the balance sheet end date and the AGM, is about 6.08 months, with the median being 5.9 months. The total lag is 7.3 months in Bangladesh, 5.4 months in India and slightly more than 6 months in Pakistan. The median total lag also suggests that it is the lowest in India, followed by Pakistan and Bangladesh. The standard deviations of 74 days, 39 days and 30 days in Bangladesh, India and Pakistan, respectively, indicate a high level of variability in reporting delay. Although, it appears that listed companies in these countries have, on average, complied with the provisions of the Stock Exchanges by holding the general meeting within the maximum period, the frequency distribution indicate that a substantial proportion of these companies have failed to do so.[6] In Bangladesh, about 26% of the sample companies have failed to hold the AGM within nine months as required by the DSE. The percentage of companies that failed to hold their annual general meeting within 6 months after the balance sheet end date is 13% for India and about 45% for Pakistan. The fact that a substantial portion of companies have failed to comply with the Stock Exchange provision suggests a lack of effectiveness of the Stock Exchanges in these countries.

The ADLAG suggests the same trend, with India being ranked first (92 days), followed by Pakistan (145 days) and Bangladesh (162 days). Although a direct comparison with western developed countries may not be valid due to strict reporting requirements of about 90 days,[7] the audit lag in these countries may be compared with other emerging and newly developed countries such as Zimbabwe, Bahrain and Hong Kong. Ng and Tai (1994) and Jaggi and Tsui (1999) found that the average audit delay in Hong Kong is about 105 days, while Abdullah (1996) and Owusu-Ansah (2000) report companies in Bahrain and Zimbabwe take about 2 months to complete the audits following the end of the financial year. In this respect, sub-continental countries are well behind these countries.

The PRELAG, which is defined as the average difference between the balance sheet end date and the notice date of the annual general meeting, is around 6.2 months in Bangladesh, 3.5 months in India and five months in Pakistan. Assuming

Table 4. Timeliness of Reporting Lag.

Variable	Bangladesh ($n = 115$)		India ($n = 226$)		Pakistan ($n = 217$)		Total Sample ($n = 558$)	
	Mean Median	St. Dev. Range	Mean Median	St. Dev. Range	Mean Median	St. Dev. Range	Mean Median	St. Dev. Range
ADLAG (days)	162.09	65.38	92.04	45.83	144.61	37.11	126.82	56.00
	148.00	237.00	85.00	356.00	149.00	303.00	132.00	356.00
PRELAG (days)	186.90	73.55	105.04	50.60	150.49	34.63	142.05	60.03
	160.50	297.00	95.50	262.00	154.00	297.00	143.00	341.00
TOTLAG (days)	220.36	73.70	163.64	38.35	178.67	30.42	182.54	80.84
	183.00	258.00	170.00	230.00	180.00	274.00	177.00	310.00

Test of Mean Difference

Differences	Mean Difference	*t*-Value	Sig. (Two-tailed)
Between Bangladesh and India			
ADLAG	70.05	11.49	0.000
PRELAG	81.86	11.41	0.000
TOTLAG	56.72	8.77	0.000
Between Bangladesh and Pakistan			
ADLAG	17.47	3.09	0.002
PRELAG	36.41	6.05	0.000
TOTLAG	41.68	7.16	0.000
Between India and Pakistan			
ADLAG	−52.57	−13.18	0.002
PRELAG	−45.44	−10.53	0.000
TOTLAG	−15.03	−4.35	0.000

that companies submit their annual report to the Stock Exchange around the notice date when the annual report is printed and ready for mailing to shareholders, the average lag indicates that companies in India take about 3.5 months to release the annual reports to the public. This suggests that companies in Bangladesh, on average, take about twice the time taken by Indian companies to do so. Though the lag is lower in Pakistan relative to Bangladesh it is substantially higher compared with India.

Since the lag pattern suggests Indian companies are more timely than Bangladeshi and Pakistani companies, Table 4 shows whether or not the three lags are statistically significantly different between the countries. The mean differences in TOTLAG, ADLAG and PRELAG between Bangladesh and India are 57 days, 70 days and 82 days, respectively, and these differences are highly significant ($p \leq 0.001$). The three time lags between Bangladesh and Pakistan also suggest that Bangladeshi companies, on average, take significantly more time to release their annual reports. In contrast, the time taken by Pakistani companies is significantly higher relative to Indian companies. Since, the Stock Exchange requirements relating to holding the AGM and submission of financial statements are very similar in these two countries, the results indicate that the Stock Exchange authority in Pakistan should take measures to improve timeliness in reporting.

Descriptive Statistics

Table 5 presents descriptive statistics for the explanatory variables. Indian companies are larger in size, as measured by total assets, with an average of Indian Rs. 4.7 million, followed by Pakistan Rs. 1.99 million and Bangladeshi Tk. 0.62 million. The standard deviation of this variable is large across all three countries, and skewness and kurtosis reveal size measures are not normally distributed. Therefore, following prior research, the log (base 10) of this variable is taken to handle non-normal data and used in the regression model. Net income figure shows Indian companies, on average, made about seven times more profit than Bangladeshi companies and about five times more profit than Pakistani companies during the period under study, which is consistent with company size. ZFCINDEX indicates that financial condition, measured on the basis of Zmijewski's (1984) model, is similar in Bangladesh, India and Pakistan. However, the large standard deviation statistics suggest there are variations across the companies in these countries.

Kolmogorov–Smirnov test statistic for each lag for each country was computed, which indicated that the distribution was not normal.[8] Consequently, log

Table 5. Descriptive Statistics on Explanatory Variables.

Variable	Bangladesh ($n = 115$)		India ($n = 226$)		Pakistan ($n = 217$)		Total Sample ($n = 558$)	
	Mean Median	St. Dev. Range	Mean Median	St. Dev. Range	Mean Median	St. Dev. Range	Mean Median	St. Dev. Range
TASS ($000)	615	118	4,700	12,100	1,990	6,940	2,810	8,970
	252	9,910	1,140	89,500	537	66,800	634	89,500
LTASS	8.433	0.566	9.111	0.670	8.719	0.714	8.819	0.717
	8.401	2.890	9.057	3.52	8.729	4.790	8.802	4.920
INCOME ($000)	50.002	118	358	1,640	75.191	924	185	1,200
	7.388	9,910	50.882	21,000	9.767	17,700	20.145	26,500
EATDUM	0.269	1.052	0.274	1.018	0.385	0.487	0.316	0.465
	000	1.000	000	1.000	000	1.000	000	1.000
ZCFINDEX	−42.27	620.06	−69.20	402.99	−9.32	5.065	−40.30	559.50
	−172.33	4,714.35	−110.60	5,484.36	−89.11	42.400	−110,060	5,484.00
SAF[a]	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
	−0.489	3.826	−0.406	3.774	0.288	4.080	−0.454	3.904
FINYR	0.913	0.283	0.881	0.325	0.940	0.238	0.910	0.286
	1.000	000	1.000	1.000	1.000	1.000	1.000	1.000

[a]Factor score of audit fees, number of reporting entities audited by an audit firm and large vs. small audit firm.

transformation was undertaken to linearize the model (Maddala, 1977). This approach is consistent with Carslaw and Caplan (1991), Ng and Tai (1994) and Jaggi and Tsui (1999). Further, to assess the effect of collinearity among the explanatory variables in multiple regression estimation, Pearson's correlation among continuous variables and Point Biserial correlation between continuous and dummy variables and between two dummy variables were computed. The results, not presented, indicate that the highest coefficient of correlation was −0.209 between LTASS and EATDUM, followed by −0.195 between FINYR and LTASS. Based on these low levels of correlation, it is expected that multicollinearity would not be a problem in the estimation of parameters.

Multivariate Regression Results

Table 6 presents multiple regression results of ADLAG (Eq. (1)) to estimate the coefficients on the explanatory variables for Bangladesh, India, Pakistan and the total sample. It shows that FINYR is significant across all countries and in the overall sample. This suggests that auditors take more time during the busy season to complete audit of company accounts. This result is consistent with the arguments that during the busy period audit firms get more business and take more time to verify the accounts. Even the recent trend to employ auditors to undertake continuous audit, a great majority of local and non-diversified companies still engage auditors to undertake year-end audit, which, under normal circumstances, is more time consuming. SAF is negatively significant in India, Pakistan and the overall sample, indicating that large audit firms take less time to complete the audit process in these countries but not in Bangladesh. The reason may be that audit firms in Bangladesh, which operate locally, are equally efficient in performing audit process relative to audit firms that represent large international accounting firms. This observation is supported by a recent study in Bangladesh (Iman et al., 2001), who also found no association between timeliness and audit firm's international linkage. The negative significant relationship between SAF and audit lag in India and Pakistan supports the efficiency and economies of scale hypothesis. This hypothesis suggests that larger audit firms are more efficient because they have better resources and access to modern technology due to affiliation with international accounting firms and experience gained through auditing more firms.

ZFCINDEX is not significant in any country nor is it significant in the overall sample. This is in contrast to Jaggi and Tsui (1999), who found ZFCINDEX highly significant in Hong Kong. In order to examine whether or not any component of ZFCINDEX, namely, liquidity, leverage and rate of profitability has explanatory

Table 6. Multiple Regression Results on Reporting Lag.

Variable	Sign	Bangladesh		India		Pakistan		Total Sample	
		Coeff.	*t*-Value	Coeff.	*t*-Value	Coeff.	*t*-Value	Coeff.	*t*-Value
Panel A: ADLAG = $\alpha + \beta_1$ LTASS + β_2 EATDUM + β_3 ZCFINDEX + β_4 SAF + β_5 FINYR(1) + ε (1)									
LTASS	−	−0.010	−0.134	−0.063	−1.203	0.049	1.906*	−1.610	−2.721**
EATDUM	+	0.028	0.278	0.010	0.129	0.129	3.349**	0.084	1.834*
ZCFINDEX	+	−0.005	−0.622	0.010	1.209	−0.001	−0.219	−0.001	−0.181
SAF	±	0.034	0.764	−0.100	−2.901**	−0.069	−3.717**	−0.030	−1.650*
FINYR	+	0.321	2.212*	0.108	1.740*	0.366	4.819**	0.313	4.580**
Intercept			4.792**		4.911**		4.270**		5.832**
R^2			4.8%		9.3%		4.9%		11.0%
Adjusted R^2			1%		7.9%		23.0%		10.2%
Model's *F*-value			1.099		4.517**		13.510**		13.463**
Model's sig level			0.366		0.001		0.000		0.000
Panel B: PRELAG = $\alpha + \beta_1$ ADLAG* + β_2 LTASS + β_3 EATDUM + β_4 ZCFINDEX + β_5 SAF + ε (2)									
ADLAG[a]	+	1.100	2.617**	1.849	1.693*	0.911	4.912**	1.102	4.935**
LTASS	−	−0.289	−0.389	0.152	1.601	0.007	0.275	0.067	1.428
EATDUM	+	−0.031	−0.307	0.068	0.738	0.002	0.004	−0.018	−0.372
ZCFINDEX	+	0.003	0.411	−0.016	−0.855	−0.002	−0.393	−0.002	−0.030
SAF	±	−0.011	−0.254	0.067	0.557	0.020	0.855	−0.010	−0.493
Intercept			−0.095		−5.044		0.425		−0.950
R^2			6.3%		8.1%		23.2%		8.8%
Adjusted R^2			1.9%		5.5%		21.3%		7.9%
Model's *F*-value			1.444		3.145		12.114		9.614
Model's sig level			0.214		0.010		0.000		0.000
Panel C: TOTLAG = $\alpha + \beta_1$ ADLAG* + β_2 LTASS + β_3 EATDUM + β_4 ZCFINDEX + β_5 SAF + ε (3)									
ADLAG[a]	+	0.849	2.489**	0.986	1.854*	0.425	3.301**	0.540	4.274**
LTASS	−	0.164	0.321	0.059	1.275	0.009	0.581	0.051	1.907*
EATDUM	+	−0.164	−0.204	0.019	0.421	0.026	0.912	−0.011	−0.365
ZCFINDEX	+	0.003	0.561	−0.007	−0.802	0.001	0.143	0.001	0.278
SAF	±	−0.004	−0.125	0.056	0.951	−0.006	−0.386	−0.294	−2.609**
Intercept			0.941		0.168		2.976		2.164
R^2			5.8%		6.8%		19.5%		7.2%
Adjusted R^2			1.5%		4.3%		17.5%		6.3%
Model's *F*-value			1.336		2.646		9.715		7.763
Model's sig level			0.255		0.025		0.000		0.000

[a]Predicted value from Eq. (1).

*Significant at the 0.05 level.

**Significant at the 0.01 level.

power on audit lag, these variables were included separately in the regression model instead of the composite ZFCINDEX. The results show none of the three variables is significant.[9] This suggests that firm's financial condition is not a determinant of audit reporting lag in South Asia. Two possible reasons can be put forward to explain this lack of significance. First, in accordance with industrial development policy being pursued since the 1970s, state owned financial institutions

have provided long-term finance to a great majority of industrial and commercial entities in Bangladesh, India and Pakistan. These financial institutions have monitoring arrangements in place between them and the entity management that usually rely less on the monitoring role of private auditors. Secondly, commercial banks control the market for short-term finance and they rely on their own departmental examination of company accounts before funds are released. In most instances, audited final accounts are required to be submitted in order to fulfill statutory requirements rather than to be used exclusively for lending decisions. These, together with low exposure to litigation, explain the insignificant association between audit lag and the firm's financial condition.

EATDUM is positively significant only in Pakistan ($p \leq 0.01$) and in the overall sample ($p \leq 0.05$), which suggests that Pakistan has driven the overall sample to be significant. In order to test the effect of alternative measures on reporting lag, operating income instead of the dummy (EATDUM) was used in the regression model. The results, not presented here, show no changes to the results reported in this study.[10] This means audit lag is positively associated with firms that incurred losses in Pakistan but not in Bangladesh or India.

Company size is negatively significant only in Pakistan ($p < 0.05$) and in the overall sample. Although this variable is not significant in Bangladesh and India, the negative direction is consistent with hypothesis that audit delay would be lower for large firms due to better resources and the use of continuous audit.

The model is significant ($p \leq 0.01$) for all samples except for Bangladesh. The adjusted R^2 is very low for Bangladesh (1%) but has higher explanatory power for India (8%) and Pakistan (23%). Except for Bangladesh, it is comparable with other studies such as Ng and Tai (1994), Abdullah (1996), Jaggi and Tsui (1999), Owusu-Ansah (2000).

The results of the second stage regression model that include audit lag as an explanatory variable for preliminary and total lags are presented in Panels B and C, respectively in Table 6. It is noted that ADLAG is the only significant variable in preliminary lag, in Bangladesh, India and Pakistan. This means the delay in submitting the annual reports to the Stock Exchange can only be explained by the time taken by auditors in verifying the accounts. However, the audit delay could be partly due to the non-availability of required documentary evidence from the reporting entity. It is not clear from the analysis how much time companies take to make available required documents at the disposal of the auditors for verification.

ADLAG is also a significant determinant of TOTLAG in all three countries. Other than this variable, no other variable is significant in any country. However, the estimate for total sample shows LTASS is positively and SAF is negatively significant. While the positive sign for LTASS suggesting that larger firms tend to

Table 7. OLS Results on Reporting Lag for Comparison.

Variable	Sign	Bangladesh		India		Pakistan		Total Sample	
		Coeff.	*t*-Value	Coeff.	*t*-Value	Coeff.	*t*-Value	Coeff.	*t*-Value
Panel A: $ADLAG = \alpha + \beta_1 LTASS + \beta_2 EATDUM + \beta_3 ZCFINDEX + \beta_4 SAF + \beta_5 FINYR(1) + \varepsilon$ (1)									
LTASS	−	−0.041	−0.547	0.035	0.545	0.051	2.312*	−0.110	−3.685**
EATDUM	+	0.001	0.007	0.087	0.935	0.118	3.554**	0.073	1.608
ZCFINDEX	+	−0.002	−0.314	0.002	0.147	−0.002	−0.623	−0.002	−0.215
SAF	±	0.026	0.643	−0.117	−2.875**	−0.044	−2.669**	−0.021	−1.690*
FINYR	+	0.353	2.617**	0.183	1.693*	0.333	4.912**	0.345	4.935**
Intercept		5.176		4.035		4.171		5.483	
R^2		6.3%		8.1%		23.2%		8.8%	
Adjusted R^2		1.9%		5.5%		21.3%		7.9%	
Model's *F*-value		1.444		3.145		12.114		9.614	
Model's sig level		21.4%		0.010		0.000		0.000	
Panel B: $TOTLAG = \alpha + \beta_1 ADLAG^* + \beta_2 LTASS + \beta_3 EATDUM + \beta_4 ZCFINDEX + \beta_5 SAF + \varepsilon$ (3)									
LTASS	−	0.010	0.170	−0.003	−0.110	0.031	2.009*	−0.035	−2.115*
EATDUM	+	0.008	0.099	0.028	0.635	0.081	3.631**	0.035	1.357
ZCFINDEX	+	−0.001	−0.127	0.003	0.336	−0.000	−0.019	0.001	0.116
SAF	±	0.025	0.731	−0.043	−2.179*	−0.035	−3.272**	−0.024	−2.138*
FINYR	+	0.272	2.485**	0.097	1.854*	0.155	3.301**	0.169	4.272**
Intercept		5.008		5.007		4.725		5.320	
R^2		5.8%		6.8%		19.5%		7.2%	
Adjusted R^2		1.5%		4.3%		17.5%		6.3%	
Model's *F*-value		1.336		2.645		9.715		7.763	
Model's sig level		25.5		0.025		0.000		0.000	

*Significant at the 0.05 level.
**Significant at the 0.01 level.

take more time, which is in contrast to the expected direction, there is no statistically significant evidence in any country to this effect. However, a plausible explanation could be that once auditors' report is submitted to the company, larger firms tend to take more time to print and distribute the reports to the shareholders and to organize the AGM for a large number of shareholders than their smaller counterparts.

For comparative purposes, we employed a single-stage OLS regression using PRELAG and TOTLAG as the dependent variables and all explanatory variables modeled in Eq. (1). The results are materially similar to those reported in Panel A in Table 6. It shows that only FINYR is significantly positively associated with PRELAG and TOTLAG in Bangladesh, India, and Pakistan and in the overall sample. SAF is significant in India and Pakistan, and in the overall sample. The sign of earnings (EATDUM) is only significant in Pakistan. However, for LTASS the results are not consistent with ADLAG across the countries. Larger firms in Pakistan tend to take more time in submitting the reports to the Stock Exchange and in organizing the AGM (Table 7).

Conventional diagnostic tests were undertaken to test for the normality of residuals for each model. Plot of residuals against the predicted values and Wald statistics do not suggest major departure from normality.[11] The Variance Inflation Factor (VIF) also do not suggest that models' parameters have been affected by possible collinearity among the explanatory variables since the highest VIF is 2.170.[12]

SUMMARY AND CONCLUSIONS

This study examines comparative timeliness of corporate financial reporting in three countries in South Asia-Bangladesh, India and Pakistan. During the last decade, these South Asian countries, like other emerging nations, have undertaken structural reforms and focused on economic development emphasizing private investments from developed and newly industrialized countries. Company regulations in Bangladesh, India and Pakistan are modeled on the British, with the Companies Act and Stock Exchange listing requirements being the two most important documents to regulate the timeliness of corporate financial reporting of listed companies in these countries. Using a large sample of 558 annual reports for 1998 from Bangladesh (115), India (226) and Pakistan (217), this study provides evidence on the timeliness of corporate reporting with reference to diversity of reporting end dates, inter-country timeliness and company specific attributes affecting timeliness.

Regarding the pattern of reporting date, it has been found that June and December in Bangladesh and June and September in Pakistan are the two most popular months for reporting. About 91 and 95% companies in Bangladesh and Pakistan,

respectively, have balanced their accounts in these two months. In India, however, March is the most popular month for reporting, which coincides with the end of taxation year.

Three measures of timeliness (reporting lags) have been operationalized. These are: the length of time between the reporting year-end and audit signature date (audit lag), date of notice of the AGM (preliminary lag) and actual holding of the AGM (total lag). This study shows that it takes about 162 days, 92 days and 144 days in Bangladesh, India and Pakistan, respectively, to complete the audit process. On average, shareholders in Bangladesh have to wait about 220 days, 163 days in India and 179 days in Pakistan to discuss the performance of their companies with the management at the AGM. This means that the audit process takes more than 75% of the total lag in Bangladesh and Pakistan, and in India it absorbs about 55% of the total time lag. These lags are substantially higher than any other countries previously studied. While longer reporting lags can be attributed to a large extent to the time allowed by the regulatory regimes in Bangladesh, higher reporting lags in Pakistan relative to India deserve attention.

A 2SLS model has been developed with audit lag is determined first, followed by preliminary lag and total lag. In the 1st stage the determinants of audit lag are estimated. Financial year-end is a significant determinant of audit lags in all three countries, which is consistent with prior research, indicting that the audit delay is longer if accounts are closed during the busy months. With regard to size of audit firms, we factorized three proxies, namely audit fees (premium for large firms), number of firms audited by an audit firm and linkage with international audit firm. The significantly negative coefficient suggests that reporting firms in India and Pakistan take less time when their accounts are audited by larger audit firms. This hypothesis, however, is not supported in Bangladesh. With regard to sign of profitability and corporate size, it is found that firms that incurred losses and are larger in size have higher audit lag in Pakistan only. There is no evidence of association between audit lag and company financial condition in any country. The 2nd stage regression model indicates that once audit lag is incorporated in the model, none of the other explanatory variables remain a significant determinant of preliminary and total lags. This suggests that the time taken to submit the annual report to the Stock Exchange or to hold the annual general meeting depends on how quickly the reporting entity gets its opinion on its final accounts from the auditors.

The above findings should be interpreted with some caveats. First, there is no claim for generalization regarding timeliness of corporate reporting in Bangladesh, India and Pakistan since annual reports could not be obtained randomly, and only a small percentage of Indian listed companies were made available. Secondly, the multivariate statistical analyses carried out in this study may suffer from omitted explanatory variables problems, some of which may not be operationalized such as

time and effort by auditors during the audit process. The model's low explanatory power is an indication of such problem underlying the model development. Third, although that factor analysis has alleviated some subjectivity in determining the audit firm size, additional factors such as number of audit partners and audit firm earnings could not be obtained. Finally, like most prior studies (e.g. Ashton et al., 1989; Ng & Tai, 1994), this research also adopts a single mechanism focus in that it investigates the time taken to release annual corporate reports. Other timely information sources such as public announcements of earnings and publication of web-based annual reports are not considered. In recent years, some large firms in South Asia have begun public announcements of earnings and releasing abridged annual reports through web prior to holding the annual general meeting.

Despite the above limitations, this study provides evidence that Bangladesh, India and Pakistan are less timely relative to other emerging and newly developed nations previously studied. The lack of timeliness creates uncertainty among investors, resulting in less than optimum investment. In particular, companies seeking overseas investment will miss out most since investors in developed countries are used to get information on a more timely basis and will be reluctant to invest if uncertainty is created due to lack of prompt information.

The regulatory provisions are partly responsible for these long reporting delays because Companies Acts and listing rules allow listed companies nine months (in Bangladesh) and six months (India and Pakistan) to hold the AGM of shareholders. Further, that a substantial proportion of companies have failed to call the meeting within the prescribed time also reflects a lack of effectiveness of the regulatory authorities in these countries. The Securities and Exchange authorities along with company legislators should look into this matter and consider aligning provisions consistent with other countries and improving monitoring mechanisms.

NOTES

1. Other member countries are Sri Lanka, Nepal, Bhutan and Maldiv.
2. Whittred observed that the total lag of 118 days in 1971 might be an outlier because the mean total lags was around 106 days over the six-year period excluding 1971.
3. Ideally, it would be appropriate to obtain the actual date of submission of financial statements to the Stock Exchange. However, discussion with Stock Exchange officials and academics from Bangladesh, India and Pakistan suggest that Stock Exchanges receive listed firms' annual financial statements around this time when the notice of the annual general meeting (AGM) is served to the shareholders. Note that the Companies Acts require corporate annual report be distributed to shareholders at least 14 days before holding the AGM. Also the stock exchange listing rules require companies to submit their annual reports to the Exchange at least two weeks prior to holding the AGM, which coincides with the AGM notice date required by the Companies Act.

4. For example, Banerjee (1992) highlighted the demand and supply of trained accounting staff in India and noted that the rate of growth of listing companies has outpaced the supply of qualified accountants in that countries. Similar, observations have been made by Ghosh (1990) and Sayeed (1992) in the context of Bangladesh and Pakistan.

5. Paksearch is a commercial database company that puts scanned images of the annual reports of all listed companies in Pakistan along with other economic data on its web page that is access through subscription. The web address is http://www.Paksearch.com. For India and Bangladesh, actual annual reports were purchased.

6. Not presented but a complete table of frequency distribution may be available upon request.

7. For example, it has been found that audit lag in the U.S. is 63 days (Ashton et al., 1987), in Canada 55 days (Ashton et al., 1987) and in New Zealand 92 days (Carslaw & Caplan, 1991).

8. The highest was 7.121 for TOTLAG in the overall sample and the lowest was 1.667 for PRELAG in Bangladesh.

9. The worksheet and the results may be available upon request.

10. The worksheet and the results may be available upon request.

11. See Greene (1991, p. 329) for further details. The statistic is calculated as follows: $W = n[b^1/6 + (b^2 - 3)^2/24]$, where b^1 is skewness, b^2 is kurtosis and n is the number of observations. W is asymptotically distributed as chi-squares with two degrees of freedom.

12. VIF is equal to $1/(1 - R^2)$, where R^2 derived from the multiple regression of an explanatory variable on all other explanatory variables (Gunst & Mason, 1980, p. 295). SPSS statistical package automatically calculates VIF on command.

ACKNOWLEDGMENTS

Helpful comments from Darren Henry, John Courtis, Segun Wallace and seminar participants at the Department of Accounting and Management, La Trobe University are appreciated. Support from the Dhaka Stock Exchange, Bangladesh, Research Development Association, University of Rajasthan, India, and Paksearch, Pakistan is also acknowledged. Financial support for this project was provided by the Faculty of Law and Management, La Trobe University, Australia.

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THE ROLE OF LOAN LOSS PROVISIONS IN EARNINGS MANAGEMENT, CAPITAL MANAGEMENT, AND SIGNALING: THE SPANISH EXPERIENCE

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and Ana Lozano-Vivas

ABSTRACT

While much research has been conducted in the United States on the use of loan loss provisions (LLPs) as a mechanism for managing earnings, managing capital, and as a tool for signaling future earnings strategies, there is a paucity of research in Europe. In this research, we replicate methodology used by Ahmed, Takeda and Thomas (1998) and examine the relative importance of key factors affecting the LLP decisions of Spanish depository institutions. Among others, we focus on the role of organizational structure. We specifically examine if and how LLPs are used prior to and after the implementation of capital adequacy regulations in the Spanish depository industry in 1992. Our results indicate that while LLPs were not used as a tool for managing capital after the new regulation came into effect, banks have now adopted a more aggressive earnings management strategy. This appears to be because the capital adequacy regulation of 1992 removed any capital constraint that

Advances in International Accounting
Advances in International Accounting, Volume 16, 45–65

ISSN: 0897-3660/doi:10.1016/S0897-3660(03)16003-5

hitherto acted as a disincentive to aggressive earnings management. Commercial banks appeared to adopt a more aggressive earnings management as well as capital management strategy than savings banks in the post regulatory era. Finally, we did not find evidence that LLPs were used as a signaling tool by Spanish banks to portray their intentions about future earnings.

INTRODUCTION

Banks, in general, set their loan loss provisions to reflect expected future losses on loans in their existing portfolios. Since these future losses cannot be estimated with certainty, bank managers have substantial discretion to set the provision. In theory, managers are supposed to use this discretion to provide best estimates of their portfolio's expected losses. In practice, however, managers may face substantial incentives to manipulate their loan loss provisions. The extant literature indicates that the loan loss provision (LLP) is a tool extensively used for the purpose of risk management, reducing earnings volatility, enhancing managers' compensation, and avoiding capital adequacy regulation. Federal bank and securities regulators do recognize the possibility of inappropriate earnings' manipulations and have developed common agreement that institutions should include a "margin for imprecision" that reflects the uncertainty associated with estimating credit losses in their portfolio (Montgomery, 1998). Similar views have been echoed by Turner and Godwin (1999). De Chow and Skinner (2000) note that with the increased importance of stock-based compensation, managers have become increasingly sensitive to the level of their firms' stock prices and their relation to key accounting numbers such as earnings.

In recent years, considerable work on loan loss provisions has been conducted in the United States. These studies focused on the relationship of LLPs and earnings management (Ahmed, Takeda & Thomas, 1998; Beatty, Chamberlain & Magliolo, 1995; Greenwalt & Sinkey, 1988; among others), relationship of LLPs and capital management (Beatty, Chamberlain & Magliolo, 1995; Collins, Shackelford & Wahlen, 1995; Kim & Kross, 1998; Moyer, 1990; among others) and the use of LLPs as a tool for signaling information to the stock market (Liu & Ryan, 1995; Wahlen, 1994; among others). However, there is a paucity of similar research in the European environment. The purpose of this study is to reduce this gap by examining the role of loan loss provisions (LLP) in earnings management, managing capital adequacy ratios, and as a tool for signaling in the Spanish banking industry. In this study we replicate the research of Ahmed, Takeda and Thomas (1998) who examined the role of loan loss provisions in capital management, earnings management, and as a tool for signaling in the U.S. banking industry.

Using the same methodology, but testing different hypotheses appropriate to the Spanish environment, we examine the role of LLPs in the Spanish environment.

In the United States, the introduction of capital adequacy regulation in 1990 spawned research on changes in earnings and capital management behavior. This new change in bank capital adequacy regulations limited the existing norms of capital ratio construction such as the use of loan loss provisions as components of regulatory capital. The change, in effect, reduced the costs of earnings management. Thus, one would assume that in the post regulation regime we would evidence more aggressive earnings management. The most recent study cited above tested this assertion (Ahmed et al., 1998).

In the European environment, capital adequacy regulations were imposed during the late 1980s and early 1990s with Spain adopting it in 1992. In this year the Spanish banking industry also became deregulated. In this paper, we primarily focus on two main objectives. First, to examine the changes, if any, of the use of loan loss provisions for capital management, earnings management, and signaling devices after the imposition of new capital adequacy regulations and deregulation. The Spanish banking industry is important to study because it is representative of that of Europe in general. Similar to most European countries, the Spanish depository institutions consist of commercial and savings banks. Commercial banks are stock institutions funded by investors, and are hence responsible to external parties. Savings banks, i.e. mutual banks, on the other hand are owned by the depositors. These differences in organizational structures may have implications for earnings and capital management behavior patterns via the use of loan loss provisions (hereafter LLPs) after the imposition of the new regulation and deregulation.

Hence our second objective is to examine if these changes are equally applicable to the two main types of Spanish banking institutions. The purpose is to study how differences in organizational structure influence (if at all) the use of loan loss provisions as a tool for capital management, earnings management and signaling.

LITERATURE REVIEW

As mentioned earlier, scores of research contributed to the role of LLPs in influencing capital and earnings management, and in some cases, contributing to the signaling processes of firm value. We summarize the key findings of the main papers.

Studies Examining the Relationship Between LLPs and Capital Management

Moyer (1990) initially suggested that some managers adjust accounting measures, in particular the discretionary component of loan loss provision to manipulate the

capital adequacy ratio, the purpose being to reduce regulatory costs imposed by capital adequacy ratio regulations. The results are consistent with the hypothesis that managers adopt ratio increasing accounting adjustments as the primary capital adequacy ratio declines relative to the regulatory minimum. In particular Moyer found evidence that banks manage capital using the loan loss provision. She also found evidence, which demonstrated that bank managers exercised discretion over the timing of reported loan loss provisions to avoid regulatory capital constraints.

While many authors attempted to demonstrate that banks execute transactions to manage accruals to achieve capital, tax, and earnings goals, a common feature of these studies (including that of Moyer) was the assumption that when managers make a particular accrual or transaction decision, all other decisions are fixed. The significant criticism of the Moyer study is that while she examined the influence of loan loss provisions, loan charge-offs, and other accounting measures on capital management, she did not consider any interdependence among them.

Beatty, Chamberlain and Magliolo (1995), developed a methodology that enabled examination when these decisions are made simultaneously. Their results were similar to Moyer's study that did not account for joint decision making. In essence, they concluded that deviating from capital and earnings goals was costly and that bank managers trade off accrual and financing discretion to meet these goals. However, the results are mixed. While Moyer (1990) and Beatty et al. (1995) found evidence of a negative relation between loan loss provisions and capital ratios, Collins et al. (1995) do not find evidence of capital management. In summary, the preponderance of evidence suggests that LLPs are used as a tool to manage capital even though some studies find evidence to the contrary.

While the above papers were based on data prior to the 1990 capital adequacy regulation, a number of other papers also focused on the same issue using data from the post regulation period. Kim and Kross (1998) examined whether the level of loan loss provisions and write-offs declined in the new capital regime relative to the old regime. Their results indicated that, for low capital banks, LLPs declined significantly after the new capital adequacy regulations. This is consistent with the notion that there is no incentive to increase LLPs to avoid minimum capital adequacy regulation since LLPs do not constitute an integral component of minimum capital requirements. This finding is corroborated by Ahmed et al. (1998).

Studies Examining the Relationship Between LLPs and Earnings Management

Some of the early studies showed convincingly that having stable earnings for commercial banks minimizes stock price volatility and maximizes shareholders' wealth. Scheiner (1981) in an early study rejected the position that commercial

banks used loan loss provisions to smooth or manage income. Scheiner did find a positive correlation between operating income and loan loss provision and acknowledged that loan loss provisions provided a source of flexibility to adjust reported earnings. However, he attributed higher provisions to higher business failures and to more aggressive policies of bank managers. In a study examining the influence of loan loss provisions as a tool for earnings management among others things, Ma (1988) came to different conclusions. Ma showed that U.S. commercial banks used loan loss provisions and charge-offs to smooth reported earnings. In his study, he found no relationship between quality of loan portfolios and loan loss provisions. In other words, riskier portfolios did not appear to generate higher loan loss provisions. His results indicated that bank management tends to raise (lower) bank loan loss provisions in periods of high (low) operating income. The net impact of these adjustments resulted in a lower volatility in reported earnings. Ma concluded that loan loss provisions appeared to have no relationship to the quality of a bank's loan portfolio and were being aggressively used as a tool for earnings management. Collins et al. (1995) also found a positive relationship between earnings management and loan loss provisions. Their results also support the notion that LLPs are used to manage earnings.

Studies in this area, especially in the U.S. are too abundant to enumerate. But in essence most studies including Beaver et al. (1989), Scholes et al. (1990), Collins et al. (1995), Liu and Ryan (1995), Beaver and Engel (1996), and Liu et al. (1997), among others have found compelling evidence of earning management among banks. Healy and Wahlen (1999) enumerate the findings of these studies and conclude that earnings management is conducted by banks and that the reason (in part) is for stock market purposes.

Studies using data after the 1990 capital adequacy regulation era is limited to a well-executed paper by Ahmed et al. (1998). The authors did not find strong evidence of earnings management via loan loss provisions after the new capital adequacy regulation came into effect. This is somewhat surprising as one would expect to evidence more aggressive earnings management due to the new capital adequacy regulation.

LLP as a Mechanism to Signal Private Information About Future Earnings

Beaver et al. (1989) hypothesized that investors interpret an increase in LLP as a sign of strength. This was subsequently termed the signaling hypothesis. Beaver et al. suggested that loan loss provisions can indicate that management perceives the earnings power of the bank to be sufficiently strong that it can withstand a hit to earnings in the form of additional loan loss provisions. Wahlen (1994)

found a positive relationship between unexpected LLPs and future pre-loan loss earnings changes as well as contemporaneous stock returns. Beaver and Engel (1996) observed that the valuation coefficients on the "discretionary" and "non-discretionary" components of LLPs are positive and negative, respectively, consistent with the signaling hypothesis. The signaling hypothesis was also investigated by Liu et al. (1997) to see if it holds in a different time period after controlling for important economic determinants of loan loss provisions not included in prior studies. While they concluded it did, the evidence is mixed. Ahmed et al. did not find evidence of a positive relation between LLPs and one-year ahead future change in earnings contrary to Wahlen (1994).

HYPOTHESES

Capital Management

In general, banks that face higher costs of violating capital requirements are likely to have greater incentives to engage in capital management. Capital adequacy is especially important in the merger approval process and regulators are thought to impose higher regulatory capital standards for banks that are actively involved in growth via mergers and acquisitions. Capital requirement regulations also act as a constraint to banks. This is because if a bank's capital is at or below the minimum capital level, the bank cannot issue more deposits or invest in additional loans. Based on the above arguments, we expect banks with relatively higher costs of violating capital requirements to engage in more capital management. We expect this relationship to decline after the new capital adequacy regulations come into effect.

The Spanish banking industry has two types of banks. Commercial banks are responsible to stockholders unlike savings banks that are privately owned. We expect, therefore, that commercial banks may have a greater incentive to manipulate loan loss provisions relative to savings banks.

Our hypotheses are summarized as follows:

H1a. The higher the cost of violating capital constraints, the more likely it is that banks will manage capital via loan loss provisions.

H1b. The relation between loan loss provision and capital will be less negative for banks in the new capital regime relative to the old regime.

H1c. Commercial banks will have a greater incentive to manipulate capital via loan loss provisions than savings banks.

Earnings Management

As noted in the previous section, the preponderance of studies appears to find that loan loss provisions are used to manipulate earnings. In our hypotheses, we assume that managers have an incentive to smooth earnings. In particular, as Ahmed et al. (1998) note, when earnings are expected to be low, LLPs may be deliberately understated. In the old regime, such action would be costly since it would result in reducing the primary regulatory capital (Tier 1), moving the company closer to violation of capital adequacy ratios. In the new regime, the costs associated with this action would be removed. This is because it would have no effect on Tier 1 capital. In this scenario, we would expect commercial banks (that are responsible to stockholders and whose stock prices could be adversely affected by low earnings or higher volatility of reported earnings) to have a stronger incentive to manipulate. Hence, our hypotheses are stated as follows:

H2a. Overall, loan loss provisions will be positively associated with earnings.

H2b. The relation between loan loss provisions and earnings (before loan loss provision) will be more positive in the new capital regime than in the old regime.

H2c. The relation between loan loss provisions and earnings (before loan loss provision) will be more positive for commercial banks relative to savings banks in the new capital regime.

Signaling Future Earnings

Signaling theory assumes that LLPs may be used to signal financial health. As noted earlier, Beaver et al. (1989), Wahlen (1994), Beaver and Engel (1996), and Liu et al. (1997) all conclude that loan loss provisions are used as a signaling mechanism. As Ahmed et al. (1998) noted, "if signaling is an important incentive in choosing loan loss provisions, then we should observe a positive relation between loan loss provisions and changes in future pre-loan loss earnings," (p. 8). Hence our hypothesis, similar to that tested by Ahmed et al. is stated as follows:

H3. Loan loss provisions are positively related to one-year ahead changes in earnings (before loan loss provisions).

THE SPANISH BANKING SYSTEM

Two key depository financial institutions operate in the Spanish economy: commercial banks and savings banks. Commercial banks include private domestic

banks and foreign banks and have traditionally concentrated on corporate business and foreign exchange transactions, while savings banks have mainly offered services to households and small businesses in local areas. The rest of the depository industry is composed of smaller localized credit cooperatives. Commercial banks are privately owned by stockholders while savings banks are mutual institutions. These two sectors hold, on average, over 97% of the total assets of all domestic financial institutions.

In recent years, especially since 1991, the Spanish banking system has experienced a series of deregulation initiatives. The primary reason for the deregulation, and the liberalization from strict government controls, was to establish a competitive edge for the local banking and financial markets. This was considered particularly important after the removal of barriers to inter-country competition in financial services within the European Economic Community (EEC). The deregulatory experience lowered or kept the total number of institutions equal to the pre-deregulatory era number in all sectors. As shown in Table 1, however, there is a change in the market share with savings banks apparently more successful in enhancing their market share primarily at the expense of the commercial banks.

Unlike the smaller banking institutions in the United States, Spanish banks do not gain any tax advantage from the loan loss provisions and thus lack any incentive to deliberately use the provision for tax purposes. In this regard, Spanish

Table 1. Spanish Banking System (1986–1995).

Year	Commercial Banks (Domestic)	Savings Banks	Credit Cooperatives
Number of institutions			
1986	97	79	138
1991	108	57	106
1995	109	51	97
Percentage share of industry assets			
1986	66%	31%	3%
1991	62%	35%	3%
1995	59%	38%	3%
Assets in 1,000 million pesatas (deflated GNP 1986)			
1986	29.290	13.974	1.399
1991	35.347	19.490	1.711
1995	40.027	25.448	2.369
Branch expansion (number of branches)			
1986	16,518	12,831	n.a.
1991	17,824	14,031	n.a.
1995	17,897	15,029	n.a.

banks are not significantly different from their U.S. counterparts especially with reference to their objectives of using the loan loss provision: (a) as a reserve for future expected losses; (b) as a signaling mechanism to clients and investors regarding future expected cash flow; and (c) to maintain smooth earnings streams to convey a signal of stable management.

Among the Spanish banks, saving institutions are mutual institutions while commercial banks are stock institutions. Institutions with mutual form of organizations have less incentive to use loan loss provision as an income smoothing strategy compared to their commercial bank counterparts who are under surveillance from corporate board and stock holders (Hasan & Hunter, 1999). Moreover, the deregulatory initiatives and the aggressive banking strategies adopted for enhancing market share gives us an opportunity to examine whether lending in non-traditional assets (or newly acquired expansion through branching) changes management strategy in using loan loss provision as an effective management tool.

DATA AND MODEL SPECIFICATIONS

Our data set consists of annual end of year information of all depository institutions constituting 970 observations of which 490 are commercial bank observations and 480 are savings banks observations during the 1986–1995 period. Data for savings and commercial bank are taken from the "Anuario de la Confederacion de Cajas de Ahorros" and in "Anuario Estadistico de la Banca Espanola" respectively. We were forced to delete some of the institutions due to lack of data across the time period of interest in our study. Descriptive statistics of the sample firms are shown in Table 2.

Methodology

The following regression model was used to examine how LLPs are used in earnings management and capital management:

$$\begin{aligned}\text{LLP} = {} & a_0 + a_1 \Delta\text{LOSS} + a_2 \Delta\text{UNEMP} + a_3\text{CAP} + a_4\text{EBT} + a_5\text{SDUM} \\ & + a_6\text{POST} + a_7\text{ASSETS} + a_8\text{BRANCH} + a_9\text{CFEER} \\ & + a_{10}\text{SDUM} \times \text{CAP} + a_{11}\text{SDM} \times \text{EBT} + a_{12}\text{CAP} \times \text{POST} \\ & + a_{13}\text{EBT} \times \text{POST} + a_{14}\text{SDUM} \times \text{CAP} \times \text{POST} \\ & + a_{15}\text{SDUM} \times \text{EBT} \times \text{POST} \end{aligned} \tag{1}$$

Table 2. Descriptive Statistics for Savings Banks and Commercial Banks.

Variables	Symbol	Savings Banks ($n = 480$)		Commercial Banks ($n = 490$)	
		Mean	Std. Dev.	Mean	Std. Dev.
Loan loss provisions to loans outstanding	LLP	0.96	1.04	0.83	1.10
Loan losses to assets	LLA	0.89	0.99	0.99	0.61
Change in loan losses	ΔLLOSS	−0.002	0.01	−0.001	0.03
Change in unemployment	ΔUNEMP	0.01	0.06	0.04	0.01
Capital to minimum required	EBT	3.04	2.50	3.40	1.96
Stock returns	SRETURN	–	–	5.81	2.92
Book value of equity to assets	BVETA	5.73	3.48	6.81	2.04
Return on assets	ROA	1.96	0.58	2.01	1.14
Commission and fee income to total assets	CFEER	0.89	0.45	0.44	1.14
Number of branches	BRANCH	268	561	263	341
Number of ATMs	ATM	49	160	181	384
Total assets	ASSETS	579,920	1,406,30	346,80	616,184

where:

LLP = Loan loss provision to loans outstanding

ΔLLOSS = Change in loan losses

ΔUNEMP = Change in unemployment rates

CAP = Ratio of actual regulatory capital (primary or Tier 1 capital) before loan loss reserves to the minimum required regulatory capital

EBT = Earnings before taxes and loan loss provision/average Total assets

SDUM = Dummy variable (1 = stock or commercial banks; 0 = mutual or savings banks)

POST = Dummy variable (1 if post regulation or post 1991 (1992–1995) regime; 0 otherwise i.e. 1986–1991)

ASSETS = Log of total assets

BRANCH = Number of branches

CFEER = Commission and fee income to total assets

SDUM × EBT = Interaction of type of bank with earnings before loan loss provision

CAP × POST = Interaction of capital and type of regime

EBT × POST = Interaction of earnings with type of regime (1 if new capital Regulation regime; 0 otherwise)

SDUM × CAP × POST = Interaction of type of bank with ratio of regulatory capital and type of regime

SDUM × EBT × POST = Interaction of type of bank with earnings and type of regime.

In the above regression, ΔLLOSS and ΔUNEMP are internal and external indicators of the level of risk faced by a bank. Increase in loan losses would necessitate that the bank increases its loan loss provisions to take account of the additional risk. Similarly ΔUNEMP is used as a surrogate for economic activity. Increased unemployment indicates a slump in the economy that may accentuate the risk of loan default for banks.

The organizational form dummy variable (SDUM) takes on the value of 1 if the banking institution is a commercial bank and 0 if it is a savings institution. Unlike mutual institutions, the stock form of organizations has direct monitoring or profit making pressure from stockholders (owners). Therefore, their managers may have a greater incentive to manipulate income. Similarly, the capital regime dummy variable (POST) takes on the value of 1 if the period is post regulation (1992–1995) and 0 otherwise (1986–1991).

The log of total assets is another control variable that measures the size of the bank. In general, larger banks may have higher levels of business and may be expected to have higher loan loss provisions than smaller banks. CFEER is commission and fee income as a proportion of total assets. A higher income in this category indicates an interest in non-depository banking activities and thus relatively less dependency on traditional lending activities. It is plausible that these institutions are more active in allocating appropriate loan loss reserve estimates in order to provide an image of a "safer financial institution" providing multiple services for clients. One may argue the contrary stating that, given most of the traditional income for depository institutions come from deposits and lending activities, commissions and fees may represent an aggressive and non-traditional mode of banking activity. Banks involved in such non-depository activity and strategy may have experienced higher credit risk and thus may allocate inflated amounts to the

loan loss provision for the purpose of off setting risks associated with an anticipated uncertain future.

The branch variable (BRANCH) is used to measure the geographic or distributional intensity of financial institutions. Institutions with large branch networks may have a well-diversified loan portfolio and expect lower credit problems and thus are less likely to keep higher provisions for loan losses. On the other hand, it can also be argued that banks with large networks may have less control of its lending and related credit activities and, hence, may be expected to keep larger provisions for loan losses to handle unexpected adverse credit events which may surface in the branch network.

In the model, CAP × POST represents the interaction between capital adequacy ratios and type of regime. Our understanding from Moyer (1990) and Beatty et al. (1995) is that the loan loss provision changes are inversely correlated to the divergence from capital adequacy ratios. EBT × POST represents the interaction of earnings and the capital regime period. If earnings management is more aggressively pursued in the post regulation regime period, we would expect the coefficient of this variable to be significant and positive. Finally, SDUM × CAP × POST indicates the interaction of the bank type with capital adequacy ratio and the type of regime (post capital regulation). Given the coding of the dummy variables, if the incentive to use LLPs to manage capital is reduced, we would expect the coefficient of this interaction variable to be significant and negative.

EMPIRICAL RESULTS

The regression results are shown in Table 3. We report the results from four regression models that incorporate different independent variables.

The first regression model does not include the interaction variables. The second model has, in addition, the SDUM × CAP and SDUM × EBT interaction variables, while the third model also incorporates the two-way interaction variables, CAP × POST and EBT × POST. The fourth model also includes the two three-way interaction variables, SDUM × CAP × POST and SDUM × EBT × POST.

The model statistics for the first regression model reveal that the basic model (reported in column 1) explains almost 48% of the model with marginal increases obtained by adding additional interactive variables (second, third, and fourth regression models reported in columns 2, 3, and 4). In all estimates, the R^2 and F-statistics show strong model statistics.

The results in the first model indicate that, overall, loan loss experience, economic activity, the level of the capital adequacy ratio, level of earnings,

Table 3. Impact of Organizational Form and Deregulation on LLP OLS Regressions for Model 1 (t-Statistics in Parenthesis, $n = 970$).

Model 1: $\text{LLP} = a_0 + a_1\Delta\text{LLOSS} + a_2\Delta\text{UNEMP} + a_3\text{CAP} + a_4\text{EBT} + a_5\text{SDUM} + a_6\text{POST} + a_7\text{ASSETS} + a_8\text{BRANCH} + a_9\text{CFEER} + a_{10}\text{SDUM} \times \text{CAP} + a_{11}\text{SDM} \times \text{EBT} + a_{12}\text{CAP} \times \text{POST} + a_{13}\text{EBT} \times \text{POST} + a_{14}\text{SDUM} \times \text{CAP} \times \text{POST} + a_{15}\text{SDUM} \times \text{EBT} \times \text{POST}$

Variable Name	Without Interaction Variables	With Interaction Variables Added		
		SDUM × CAP SDUM × EBT	CAP × POST EBT × POST	SDUM × CAP × POST SDUM × EBT × POST
Intercept	0.014 (3.83)***	0.017 (4.88)***	0.018 (5.03)***	0.019 (5.11)***
ΔLLOSS	0.428 (12.74)***	0.441 (13.43)***	0.460 (13.91)***	0.457 (13.80)***
ΔUNEMP	0.003 (1.81)*	0.003 (1.76)*	0.004 (1.70)*	0.003 (1.86)*
CAP	−0.07 (1.85)*	−0.17 (1.92)*	−0.346 (0.498)	−0.210 (0.318)
EBT	0.014 (2.19)**	0.015 (1.96)**	0.020 (2.35)**	0.004 (1.96)**
SDUM	−0.004 (6.97)***	−0.004 (6.62)***	−0.002 (5.21)***	−0.003 (3.41)***
POST	−0.016 (27.09)***	−0.017 (23.06)***	−0.015 (25.65)***	−0.016 (21.85)***
LASSETS	0.0001 (0.27)	0.0001 (0.319)	0.0001 (0.106)	0.0001 (0.101)
BRANCH	−0.001 (2.85)**	−0.001 (2.97)**	−0.001 (2.65)**	−0.001 (2.72)**
CFEER	−0.248 (3.11)***	−0.216 (3.02)***	−0.254 (3.18)***	−0.247 (3.09)***
SDUM × CAP		−0.487 (1.83)*	−0.972 (1.60)	–0.003 (1.58)
SDUM × EBT		0.001 (2.39)**	0.003 (2.04)**	0.007 (2.08)**
CAP × POST			0.284 (1.73)*	0.223 (1.69)*
EBT × POST			0.050 (2.69)**	0.043 (2.94)**
SDUM × CAP × POST				0.987 (1.71)*
SDUM × EBT × POST				0.001 (3.60)***
Adjusted R^2	0.4795	0.4820	0.4876	0.4903
F-Statistic	98.25***	98.96	90.38	75.58

*Significantly different at the $p = 0.10$ level.
**Significantly different at the $p = 0.05$ level.
***Significantly different at the $p = 0.01$ level.

non-traditional banking activity, and extent of branch networks all significantly influence the level of LLPs. The change in actual loan loss is positively associated with LLP levels. Similarly, the variable ΔUNEMP is positively associated with LLPs indicating that a slump in the economy (as characterized by rising unemployment rates) force banks to increase their loan loss provisions. The branch variable is negatively correlated with LLPs implying that banks with a greater number of branches (indicating more dispersed lending activities) have lower loan loss provisions. Interestingly both capital and earnings are significantly associated with LLP. The negative sign of the CAP ratio indicates that, overall, the lower the capital ratio (i.e. the closer it moves to the minimum required capital), the higher the loan loss provision. This is consistent with the findings of Moyer (1990) and Beatty et al. (1995) that loan loss provisions are used as a mechanism to increase loan loss reserves and hence the capital ratio of which the loan loss reserve was, prior to 1992, an integral component. This finding supports hypothesis H1a that Spanish banking institutions manage capital using loan loss provisions. Similarly, earnings are significantly and positively associated with LLP. This is also in accordance with earnings management theory discussed in the literature review section. This finding supports hypothesis H2a that states loan loss provisions will be used to manipulate earnings, hence implying a positive relationship. The sign of the coefficient indicates that, as earnings decline, loan loss provisions are reduced in order to manage earnings. Thus, it would appear that overall, for the whole sample, when interactions are not taken into account, both earnings management and capital management did occur.

The negative coefficient of SDUM and POST indicate that commercial banks and post-capital adequacy regulation regime experienced less loan loss provisions. Moreover, the CFEER coefficient indicates that banks with greater non-traditional banking activities are less likely to have higher loan loss provisions in their books. These findings are consistent with the theory in the published literature.

The second regression model in column 2 of Table 3 incorporates two interactions, namely, SDUM $\times$ CAP and SDUM $\times$ EBT. As shown in Table 3, the relationship in the first model still holds true. The coefficient of the SDUM $\times$ CAP interaction variable is negative and significant at p-value 0.01 level. This indicates that commercial banks or stock institutions use loan loss provisions to manage capital in order to avoid violation of minimum capital requirements. This finding supports hypothesis H1c that states that commercial banks (who are responsible to investors and whose stock prices may be adversely affected) will have a greater incentive to manipulate loan loss provisions to avoid violating capital adequacy regulation. Similarly, the coefficient of the SDUM $\times$ EBT interaction

variable is positive and significant at the *p*-value 0.05 level. This indicates that stock institutions are more aggressive in earnings management using loan loss provisions.

The third regression model in column 3 of Table 3 incorporates two more interaction terms. The coefficient of the CAP × POST is positive and significant at the *p*-value of 0.01 level. This indicates that in the post capital regulation regime, low capital adequacy ratios did not cause managers to increase loan loss provisions. On the contrary, LLPs appear to have been reduced. (Under the old regime this would have moved banks closer to violation of minimum capital requirements, but this is not an issue in the new post regulation regime.) This finding supports hypothesis H1b that states that the relation between loan loss provision and capital will be less negative for banks in the new capital regime relative to the old regime. Under the new regime, the negative coefficient indicates that banks had other priorities such as increasing earnings. H1c posited that commercial banks would have a greater incentive to manipulate capital relative to savings banks. However the coefficient of the SDUM × CAP variable is not significant. We conclude that there is not sufficient evidence to support this hypothesis.

The coefficient of the interaction variable EBT × POST indicates a positive relationship that is significant at a *p*-value of 0.05. This indicates that in the new regime lower earnings caused companies to reduce LLPs. This finding supports hypothesis H2b that states that the relation between loan loss provisions and earnings (before loan loss provision) will be more positive in the new capital regime than in the old regime. Thus, in the new regime, the level of capital no longer appears to influence loan loss provisions and earnings management appears to be pursued more aggressively.

The fourth regression model in column 4 of Table 3 incorporates two additional three-way interactions. These interaction variables help to further test hypotheses H1c and H2c. The coefficient of the SDUM × CAP × POST is positive but only significantly different from zero at the 10% level. While H1c postulated that commercial banks will have a greater incentive to manipulate capital, we further conclude that there is not sufficient evidence to support H1c since the coefficient was only significantly different from zero at the 10% level that we consider marginal. The coefficient of the SDUM × EBT × POST is positive and significantly different from zero at the 1% level. This finding supports hypothesis H2c, which states that the relation between loan loss provisions and earnings (before loan loss provision) will be more positive for commercial banks relative to savings banks in the new capital regime.

Table 3 examines earnings management and capital management behavior of banks via loan loss provisions. Table 4 examines whether loan loss provisions are used as a tool for signaling future earnings (i.e. the signaling theory).

Table 4. Impact of Organizational Form and Deregulation on LLP OLS Regressions for Models 2, 3, and 4 (t-Statistics in Parenthesis).

Variable Name	Dependent Variable			
	LLP Model 2		ΔEBTPMVE ($t+1$)	
	Without Control Variables	With Control Variables	Model 3	Model 4
Intercept	0.019 (2.07)**	0.026 (2.78)**	0.053 (3.79)**	0.081 (4.51)***
ΔLLOSS	0.259 (11.43)***	0.382 (10.51)***		
ΔUNEMP	0.001 (1.78)*	0.001 (1.90)*		
CAP	−0.06 (1.29)	−0.04 (1.07)		
EBT	0.010 (2.11)**	0.018 (2.35)**		
SDUM		−0.002(5.83)***		
CAP × POST	0.185 (1.79)*	0.205 (1.68)*	0.178 (1.62)	
EBT × POST	0.045 (2.08)**	0.063 (2.59)**	0.079 (2.32)**	
SDUM × POST		−0.003 (4.92)		
ΔEBTP (1 year ahead)	−0.030 (5.12)***	−0.038 (4.58)***		
ΔEBTPMVE			−0.03 (1.96)**	−0.05 (2.04)**
ULLPMVE			−0.402 (2.77)**	−0.402 (3.55)**
Adjusted R^2	0.3744	0.3925	0.1986	0.1834
F-Statistic	68.30	70.93	28.53	20.63
N	970	970	225	225

Model 2: $\text{LLP} = a_0 + a_1\Delta\text{LLOSS} + a_2\Delta\text{UNEMP} + a_3\text{CAP} + a_4\text{EBT} + a_5\text{CAP} \times \text{POST} + a_6\text{EBT} \times \text{POST} + a_7\Delta\text{EBTP}$

Model 3: $\Delta\text{EBTPMVE}_{(t+1)} = a_0 + a_1\text{CAP} \times \text{POST} + a_2\text{EBT} \times \text{POST} + a_3\Delta\text{EBTPMVE} + a_4\text{ULLPMVE}$

Model 4: $\Delta\text{EBTPMVE}_{(t+1)} = a_0 + a_3\Delta\text{EBTPMVE} + a_4\Delta\text{ULLPMVE}$

*Significantly different at the $p = 0.10$ level.

**Significantly different at the $p = 0.05$ level.

***Significantly different at the $p = 0.01$ level.

The regression model employed was:

$$\begin{aligned} \text{LLP} = {} & a_0 + a_1 \Delta\text{LLOSS} + a_2 \Delta\text{UNEMP} + a_3 \text{CAP} + a_4 \text{EBT} \\ & + a_5 \text{CAP} \times \text{POST} + a_6 \text{EBT} \times \text{POST} + a_7 \Delta\text{EBTP} \end{aligned} \tag{2}$$

where:

ΔEBTP = one year ahead change in earnings (all other variables as defined earlier).

In this model, we examine whether loan loss provisions are related to future earnings changes after controlling for economic determinants of loan loss provisions using regressions similar to those in Table 3 augmented by the change in one-year ahead earnings before taxes and loan loss provisions. If signaling of this type is an important determinant of loan loss provisions, then we should observe a positive relation between the one-year ahead change in earnings and loan loss provisions as reported in Wahlen (1994) and others. This is because signaling theory postulates that increase in LLPs are used to signal good news about future earnings changes.

The first regression in column 1 of Table 4 presents the results of the augmented regression. The coefficient of the one-year ahead change in earnings is negative and significantly different from zero at the 1% level. The sign of the coefficient and its significance is not consistent with the signaling hypotheses. The results do not support hypothesis H3. The results are not consistent with the findings reported in Wahlen (1994) who concluded that the signaling hypothesis was valid. The results here are, however, consistent with the findings of Ahmed et al. (1998) who did not find evidence of the signaling hypothesis in the United States.

The second regression in column 2 is identical to the first regression in column 1 of Table 4 except that we incorporate two control variables, namely, SDUM (a dummy variable representing bank type, 1 if commercial, 0 otherwise) and an interaction variable SDUM $\times$ POST (where post is a dummy variable, 1 if post capital regulation, 0 otherwise). We included SDUM and SDUM $\times$ POST since commercial banks, especially post regulation, may have a greater incentive to use LLPs after the new regulations came into effect. The coefficients of both these variables were not significant. Overall, the coefficient of the one-year ahead change in earnings was still negative and significantly different from zero at the 1% level. Thus, we do not find evidence to support the signaling hypothesis.

To further understand this phenomena, we reexamined the signaling hypothesis using Wahlen's (1994) model that was also used by Ahmed et al. The regressions are shown in columns 3 and 4 of Table 4. In these models we only used commercial banks for which consistent stock market return data was available.

The model examined in column 3 is as follows:

$$\Delta\text{EBTPMVE}_{(t+1)} = a_0 + a_1\text{CAP} \times \text{POST} + a_2\text{EBT} \times \text{POST} + a_3\Delta\text{EBTPMVE} + a_4\text{ULLPMVE} \quad (3)$$

where:

$\Delta\text{EBTPMVE}_{(t+1)}$ = Future (one year ahead) change in earnings before provisions and taxes (divided by market value of equity at the beginning of that year)

CAP = Ratio of actual regulatory capital before loan loss reserves to the minimum required regulatory capital

POST = A dummy variable which equals in the new capital regulation regime and 0 otherwise

ΔEBTPMVE = Change in earnings before provisions and taxes (divided by market value of equity at the beginning of the year)

ULLPMVE = Unexpected loan loss provision measured by the residuals from a regression of loan loss provisions (deflated by beginning of year market value of equity) on expected change in non-performing loans, beginning of year loan loss allowance, beginning of year non-performing loans, and five loan composition variables all deflated by beginning of year market value of equity. The expected change in non-performing loans is the predicted value in regression of change in non-performing loans and the 5 loan composition variables all deflated by beginning of year market Value of equity.

The models in columns 3 and 4 presents tests of signaling using the valuation approach used in Beaver and Engel (1996) and Ahmed et al. (1998). Regressions were run using the Wahlen and Ahmed et al.'s model for discretionary LLP provision and empirical specifications. Columns 3 and 4 of Table 4 present the results of the models. The model presented in Table 4 is a similar regression to that of column 3 but only including ΔEBTPMVE and ULLPMVE. In essence, the results in both indicate that the relation between future earnings changes and the discretionary component of the loan loss provision remain negative and significantly different from zero at the 5% level. This is not consistent with the signaling hypothesis, which would postulate a positive relationship. These

results are, however, consistent with Ahmed et al. who also found no evidence for signaling theory in their sample of U.S. banks.

CONCLUSIONS

It is important to understand whether banks use tools such as the loan loss provision to manage earnings and avoid minimum capital adequacy regulations. Much research has already been conducted in the United States in the area of earnings management and capital management via loan loss provisions. However, not much research has been conducted in the European environment. It is important for European regulators to understand if and how mechanisms such as the loan loss provision are used to manage earnings to inflate stock prices, as a signaling device, and as a tool to manage capital. Such knowledge can help regulators understand if the reported numbers are truly meaningful or are subject to manipulation. Arthur Levitt, Chairman of the Securities Exchange Commission in the United States, stated that, in the U.S., managing has become "manipulation" and integrity has been substituted by "illusion" (Levitt, 1998). This study provides information to Spanish regulators, investors and other stakeholders on the accuracy of reported numbers in their country.

The Spanish banking industry is important to study because it is representative of that of Europe in general. Similar to most European countries, Spanish depository institutions consist of commercial and savings banks. While savings banks are owned by their depositors, and hence, not responsible to external parties, commercial banks are owned by stockholders, and managers of commercial banks are responsible to stockholders for the annual performance of those banks. Managers of such banks may have an incentive to use tools to manipulate numbers in their favor especially after the 1992 deregulation. Lower monitoring as a consequence of deregulation may act as an incentive to banks to use tools at their disposal to manage earnings and capital.

In the U.S., capital adequacy regulation enacted in 1990 could have influenced banks' behavior by ruling that loan loss reserves would not constitute an integral part of required minimum capital that banks are required to hold. This may have had the unintended consequence of stimulating more aggressive earnings management behavior by banks. (This is because, prior to this regulation, reducing loan loss provisions to inflate earnings had the unintended consequence of reducing loan loss reserves, which in turn, constituted an important component of the capital adequacy ratio.) Thus, prior to the new regulation aggressive earnings management had costs associated with it. (Namely, the cost of moving closer to violating capital adequacy ratios.) This cost has now been eliminated. In Spain

too, under new and similar capital regulation enacted in 1992, this cost has been eliminated.

Our results indicate that, overall, LLPs were used as a tool for avoiding capital adequacy regulation. Similarly, overall, LLPs were used as a tool for earnings management. We found that LLPs were not used as tool for managing capital after the new regulation came into effect. This intuitively makes sense. We also found that banks have adopted a more aggressive earnings management strategy after the new capital adequacy regulation came into effect. This is plausible since there is no capital constraint to act as a disincentive to aggressive earnings management. We would have assumed that commercial banks would be pursuing earnings management strategies relative to savings banks. Although the results indicated that this was true, it was not statistically significant. This is somewhat surprising. Finally, unlike in the U.S., we did not find evidence that Spanish used LLPs as a tool to signal their intentions about future earnings.

ACKNOWLEDGMENTS

The authors thank Bill Francis and Larry Wall and participants of the Rutgers University Research Workshop for suggestions and comments.

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THE ROLE OF ACCOUNTING INFORMATION IN STOCK MARKET LIBERALIZATION: EVIDENCE FROM KOREA

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ABSTRACT

Stock market liberalization is a decision by a country's government to allow foreigners to buy securities in that country's capital market. This study examines how the liberalization of the Korean stock market affected stock price behavior and changed the role of accounting information for investment decisions. The Korean stock market opened its door to foreign investment in 1991. Prior to this, market inefficiencies, such as the superfluous co-movement of stock prices with industry or market indices or investment based on rumor and speculation, were widespread. Since the opening of the stock market to foreigners, a more rational pricing behavior has emerged. This setting provides a unique opportunity to investigate how stock price behavior has changed with market liberalization and what was the role of accounting information in this process. Our results indicate that the co-movement behavior of stock prices by industry decreased and stock price differentiation based on individual firm characteristics increased after market liberalization. The results also show that the explanatory power of accounting numbers increased after market liberalization. Overall, the results imply that foreign

Advances in International Accounting
Advances in International Accounting, Volume 16, 67–84

ISSN: 0897-3660/doi:10.1016/S0897-3660(03)16004-7

investors contributed to the improvement of market efficiency with the opening up of capital markets in Korea. We believe that our results provide useful evidence to other capital markets that are in a similar situation.

INTRODUCTION

This study examines how the liberalization of the Korean stock market affected stock price behavior and changed the role of accounting information in investment decisions. The Korean stock market first allowed foreign investors to purchase stock in 1991. Prior to this, many believed that stock prices in Korea did not properly reflect accounting information, and market inefficiencies such as the superfluous co-movement of stock prices with an industry or market index, or investment based on rumors, anecdotes, and speculation, were commonplace.[1] Therefore, studies that examine the relationship between accounting information and stock price had been largely neglected.

Since the liberalization of the stock market, however, the behavior of stock prices is apparently more consistent with rational pricing behavior. Stock price differentiation seems to be based on the firm's economic fundamentals, which may be suggestive of a change in the way investors use accounting information in pricing decisions. The changes occurring in Korea provide a unique setting in which to investigate how the behavior of stock price changed with the entrance of foreign investors, and what was the role of accounting information in this process if the stock price differentiation indeed occurred since the market was opened to foreign investors.

This paper first tests the observation that stock price differentiation increased by comparing a stock price differentiation index before and after market liberalization. Then we examine whether the relevance of accounting information, such as earnings and book value, changed after market liberalization. This is tested by comparing the coefficients of accounting variables and R-squares in the regression of return on the accounting variables before and after the liberalization date. We hypothesize that market differentiation and the relevance of accounting information increases after market liberalization.

The results indicate that the co-movement of stock prices by industry decreased, and stock price differentiation based on the individual firm characteristics increased, after market liberalization. The results also show that the explanatory power of accounting numbers for stock prices increased after stock market liberalization. The results are similar regardless of whether we use levels or changes in price and accounting variables in our regression tests. Our findings imply

that participation by foreign investors following the stock market liberalization contributed to the improvement of market efficiency in Korea. We believe that our results provide useful evidence to other capital markets that are in similar circumstances.

BACKGROUND

Opening the Korean Stock Market to Foreign Investors

Korea started preparing for market liberalization well in advance of the liberalization date of January 3, 1992. In 1981, the Korean government announced a "Long-term plan for internationalization" as a first step towards an international stock exchange. Some of the actions undertaken by Korea to attract foreign investment during 1980s include issuance of income securities in 1981 exclusively for foreign investors, and establishment of the Korea fund in 1984. However, these actions were problematic in that foreign investors were not allowed to select a stock or exercise stockholder voting rights.

In December of 1988, as the Korean economy was growing rapidly, the government announced its intent to implement the long-term internationalization plan during the upcoming three-year interval from 1989 through 1992. Under the plan, Korea invited indirect investments from foreign investors, and finalized its plan for the liberalization of the stock market in September 1991 by establishing the "Regulation for stock transactions by foreign investors." This time, the government allowed foreign investors to make stock purchases only with the proceeds from the sale of convertible securities that Korea issued in foreign countries.

On January 3, 1992, general investment in stocks by foreign investors was allowed, but to a certain limit. Initially, the limit was set at 10% of the total shares of a company, out of which the same foreign individual may hold not more than 3%. It became and stayed at 20% level until 1996, but Korea accelerated the market opening from 1997 when it experienced the foreign exchange crisis. The limit was as high as 55% at December 30, 1997. Finally Korea lifted the restriction entirely on May 25, 1998.

Investment in government-invested companies was opened to foreign investors starting on May 20, 1992. The limits are slightly different than those for privately listed companies. Presently, the maximum ownership for a foreign investor in a government-invested company is 30%. This limit can be reduced for each individual as determined by company bylaws. The changes in the related regulations for investment by foreigners are summarized in Table 1.[2]

Table 1. The Stock Market Opening and the Change in the Limit to the Investment by Foreigners.

Date	Stock Market Opening Policy	Investment Limit		Limit to Government Invested Company
		By Each		By Each
		Company (%)	Individual (%)	Individual (%)
9/30/91	Announced the regulation for stock trading by foreigners. Allowed reinvestment of the proceeds from the sale of certain stocks	5	2	Investment not allowed
1/3/92	Stock market open to foreign investors in general	10	3	Investment not allowed
5/20/92	Allowed investment to government invested companies by foreigners			8[a]
12/1/94	Increase in the limit for the investment	12	3	
6/23/95	Increase in the limit for the investment	15	3	10[a]
4/1/96	Increase in the limit for the investment	18	4	10[a]
10/1/96	Increase in the limit for the investment	20	4	12[a]
5/2/97	Increase in the limit for the investment	23	6	15[a]
11/3/97	Increase in the limit for the investment	26	7	18[a]
12/11/97	Increase in the limit for the investment	50	50	21[a]
12/30/97	Increase in the limit for the investment	55	50	
5/25/98	Increase in the limit for the investment	100	100	30[a]

[a] As determined by the bylaws.

The Impact of Liberalization on the Stock Market

Foreign investment is an attractive diversification vehicle for foreign investors to the extent that returns from the foreign investment and those from domestic

investment are not highly correlated. However, foreign investors are usually at an information disadvantage relative to domestic investors. Thus, foreign investors tend to be mid- and long-term investors rather than investing in the short-term. Around the market liberalization, the turnover ratio, which reveals the investment horizon, was 186% for the whole market vs. 62% for foreign investors. This is consistent with the view that foreign investors have mid- and long-term time horizons.

The information disadvantage also makes the stocks of large companies the investment choice of foreigners since financial information is generally more available and credible, and future earnings are less uncertain. Foreign investors are also known to use fundamental analysis based on earnings and future growth potential. At the beginning of the stock market liberalization, foreign investors selected companies with high earnings retention, high return on invested capital, and low *P/E* ratios. However, as these stocks became less liquid and exhausted, they switched to high performance large company stocks.

Foreign investor's participation in the Korean stock market influenced the market in many ways. First, market size increased. The size of the stock market in 1991 immediately before liberalization was U.S. $730 billion. It increased to $840 billion in 1992, $1,120 billion in 1993, and $1,240 billion in 1994. Second, foreign investor's stock transactions have become a major factor affecting stock market activity. Yeon (1994) shows that there is a positive relationship between net stock purchases by foreign investors and the stock market indices.

Also, stock prices polarized between high and low performance stocks. The stock price stream now excludes low performance stocks, and the differences in stock prices between the companies have become greater than before. Further, as investors started to focus on the future growth potential rather than short-term returns, the stock price of growth companies continued to rise, changing the perception that the returns on low price stocks is higher than those of high price stocks. The result was a decrease in the growth rate of low price stocks. Finally, the correlation between domestic and foreign stock market returns increased.

LITERATURE REVIEW

Market liberalization studies in finance tend to focus on integration and valuation effects of liberalizing (Bekaert & Harvey, 2000; Henry, 2000; Kim & Singal, 2000). There are few domestic studies that examine the effects of market liberalization on the Korean stock market. Yeon (1994) examined the trading volume and buy/sell ratio for individual investors, institutional investors, and foreign investors from January 1992 through June 1993 and analyzed the effect of foreign

investors on the behavior of domestic investors. His results showed that the trading volume of foreign investors affects both individual and institutional investors while individual investors influence foreign and institutional investors. The trading volume of institutional investors marginally affects individual investors, but does not significantly affect foreign investors' trading volume.[3] Kim (1995) investigated the characteristics of firms that institutional and foreign investors invest in and found that firm size, labor intensity, profit margin on sales, and dividend payout ratio, and *P*/*E* ratio are common factors that explain the behavior of these investors.

Studies examining international accounting issues tend to concentrate on differences in accounting information. Some of these studies focus on the differences in country-related properties or factors (Ali & Hwang, 2000; Ball, Kothari & Robin, 2000; Pope & Walker, 1999) while much of this research focuses on the variation in the information content of earnings across international GAAP regimes (Alford & Jones, 1993; Amir, Harris & Venuti, 1994; Barth & Clinch, 1996). Alford et al. (1993) examined how the differences in the information environment affect the return-earnings relationship across countries. They find significant international differences in the relevance and timeliness of accounting earnings across 17 countries during the period 1983 through 1990 and attribute these differences to variation in disclosure requirements, government regulation, and ownership structures. Frost and Pownall (1994) compared the stock market reaction to the annual and quarterly earnings in the U.S. and U.K. They report greater market reactions to earnings in the U.S. and attribute this to high liquidity and more frequent information disclosure in U.S. market. They also report that the market reaction to earnings announcements by the same multinational corporation is different between the U.K. and the U.S. Their results suggest that the investors in different countries react to the same earnings announcement in different ways.

Studies such as Alford et al. (1993) and Frost and Pownall (1994) suggest that differences in the relevance of earnings associated with institutional and capital market characteristics might imply differences in fundamental earnings measurement attributes. Analysis of this issue is scarce, and is not always supported empirically. Booth et al. (1994) compared the return-earnings relation between the U.S. and Finland and find that despite significant differences in market structure and earnings definitions between the U.S. and Finland, the functional form of earnings and stock prices is very similar.

With a focus on cross-country comparisons, international accounting researchers have not paid much attention to how capital market liberalization affects the use of accounting information in an international context. The primary objective of our study is to examine how accounting information is used in valuation before and after the market liberalization in Korea.

HYPOTHESIS DEVELOPMENT AND TEST MODELS

Change in the Perception of Information – A Conceptual Analysis

Previously, we discussed the change in the Korean stock market due to the participation of foreign investors. The discussion suggested that Korean investor's perception about accounting information has changed significantly. Accounting information is now considered as an important information source for firm valuation, indicating that the stock market has become more efficient.

Since the Capital Asset Pricing Model (CAPM) is used to test market efficiency in information content studies, the underlying assumptions of the CAPM provide a basis for explaining the improvement in market efficiency due to stock market liberalization. CAPM assumes that: (i) publicly disclosed information reaches the investors instantaneously and on an equal basis; (ii) there is no cost for information analysis; and (iii) investors have homogeneous expectations. Information will be reflected in the price instantaneously and without bias if the above conditions are met. In practice, however, there is information asymmetry. This is supported by observing financial analysts spending significant resources on information acquisition and analysis. Further, investors with different backgrounds and analytical ability could have heterogeneous expectations on the future cash flows of a firm. This suggests that perfect market efficiency is difficult to obtain in reality, and that market reactions to information could differ across countries and time periods according to the differences in the above conditions.

The fact that homogeneous expectations cannot be fully achieved in reality provides a good basis for explaining the change in the relationship between accounting information and stock prices after the market liberalization in Korea. Foreign investors have different investment experiences, analytical abilities to process information, and investment strategies than domestic investors, and therefore, could react differently than domestic investors to the same information. When foreign investors participate in a domestic market where market equilibrium was previously set by domestic investors only, market equilibrium could be disrupted and market prices could change even though new information is not released. As described previously, foreign investors primarily use the fundamental approach in their investment analysis. As foreign investors' investment behavior becomes more influential, domestic investors will learn from their investment techniques, and their perception of accounting information in stock pricing will change. The end result is an improvement in market efficiency.

Prior to liberalization, the Korean stock market did not properly reflect financial characteristics of individual companies. Stock prices were determined at the industry level, moving together within an industry according to the change in

market situations. Stock prices were mainly determined by non-company specific factors such as macro-economic variables, the change in industry business cycle, and political factors. Accounting information did not play a major role in pricing.

Domestic market participants observed foreign investor's use of more sophisticated investment tools based on fundamental valuation techniques after market liberalization. To test this observation, we examine whether the stock price differentiation based on economic fundamentals of a firm increased after market liberalization.

Stock Price Differentiation

The following hypothesis examines whether price differentiation existed before market liberalization, and if it did, whether it increased after the market liberalization.

Hypothesis 1a. The within-industry stock price differentiation increased on average after stock market liberalization.

Hypothesis 1a is examined using a stock price differentiation index (DIFF) as calculated below:

$$\text{DIFF}_t = \frac{\text{STD}(P_t)}{\text{AVERAGE}(P_t)} \tag{1}$$

where:

STD(P_t): Standard deviation of stock prices within an industry at time t.

AVERAGE (P_t): Average stock price of all firms in an industry at time t.

The stock price differentiation index, DIFF, will be closer to 0, if the stock prices are less differentiated across firms within an industry. A large differentiation index on the other hand, indicates that stock prices are more differentiated among companies within the industry. We expect the average stock price differentiation index to be greater after market liberalization than before. That is, average DIFF_a > average DIFF_b for all industries where DIFF_a (DIFF_b) represents the stock price differentiation index after (before) stock market liberalization. Since the stock market opened to foreigners on January 1, 1992, we use the following two-year periods as before and after market liberalization, respectively:[4]

After market liberalization period:	01/01/92 through 12/31/93
Before market liberalization period:	01/01/89 through 12/31/90.

We exclude 1991, the year immediately preceding the market liberalization, because foreigners were allowed to acquire Korean stocks on a limited basis starting in September 1991. Therefore, inclusion of 1991 will contaminate the results.

As a corollary to the Hypothesis 1a, we examine the movement of a firm's stock returns with an industry stock price index before and after market liberalization. If stock prices are more differentiated within an industry, co-movement of stock prices with industry price index will decrease. We propose that the co-movement behavior of stock prices decreased after market opening as in Hypothesis 1b below:

Hypothesis 1b. After market-wide factors are controlled, the co-movement of stock prices with the industry stock price index decreased on the average after market liberalization.

The following regression is performed to test Hypothesis 1b:

$$r_{it} = a + b_1 \text{MKRT}_t + b_2 \text{INRT}_{jt} + e_{it} \tag{2}$$

where:

r_{it} = Stock returns of firm i at time t.

MKRT_t = Stock returns on the market composite index at time t.

INRT_{jt} = Stock returns at time t for firm i in industry j.

If co-movement behavior decreased after market liberalization, the coefficient on the industry index, b_2, should be smaller after liberalization than it was before. Also, we expect the explanatory power of the model, R^2, to be smaller after liberalization than before.

Relation Between Accounting Numbers and Stock Price

If Hypothesis 1a were supported, it would be meaningful to investigate the reasons for the increase in price differentiation and the decrease in price co-movement behavior after market liberalization. If investors use accounting information in stock pricing, the stock price will be differentiated according to the accounting numbers. An increase in the association between stock price and accounting numbers after market liberalization can be interpreted as an indication that investors' perception about accounting information has changed.

Hypothesis 2a examines whether the reasons for the increase in differentiation can be explained by the change in the investor's perception about accounting numbers. The distance of the firm's stock price and accounting numbers from their respective industry averages measures the degree of differentiation.

Hypothesis 2a. The association between the difference in the firm's stock prices and accounting numbers from their respective industry averages increases after market liberalization.

Hypothesis 2a is tested using the following regression:

$$\mathrm{DPRC}_{it} = a + b_1\mathrm{DERN}_{it} + b_2\mathrm{DBOK}_{it} + e_i \tag{3}$$

where:

DPRC_{it} = Stock price difference of firm i from the industry average, calculated as (stock price of firm i – industry average stock price)/industry average stock price.

DERN_{it} = Income difference from the industry average, calculated as (earnings per share of firm i – industry average earnings per share)/absolute value of industry average earnings per share.

DBOK_{it} = Book value difference from the industry average, calculated as (book value per share of firm i – industry average book value per share)/industry average book value per share.

e_{it} = Random error term.

Equation (3) measures the association between stock price and earnings and book value relative to their respective industry averages. The difference in a firm's stock price from the industry average will be greater, the greater the difference in earnings and book value from the industry averages, respectively. Comparing R-squares of the regression in Eq. (2) before and after market liberalization will tell us whether accounting numbers are more or less influential in valuation. We use the last days of each test period as comparison dates: December 31, 1990 for the pre-liberalization period and December 31, 1992 for the post-liberalization period. We expect the R-square to increase after market liberalization if the explanatory power of accounting numbers for valuation purposes increases.

We then examine the influence of accounting numbers using the changes in stock prices (stock returns) in Hypothesis 2b.

Hypothesis 2b. The association between stock returns and accounting earnings increases after market liberalization.

Hypothesis 2b is tested using the following return-earnings relation as in Easton, Harris and Ohlson (1992):

$$R_{it} = a + b_1\mathrm{AE}_{it} + b_2\Delta\mathrm{AE}_{it} + e_i \tag{4}$$

where:

R_{it} = Stock returns of firm i for year t, calculated as $(P_{it} - P_{it-1} + D_{it})/P_{it-1}$.

P_{it} (P_{it-1}) represents stock price of firm i for year t ($t-1$), and D_{it} is dividends for firm i in year t.

AE_{it} = Earnings per share of firm i for year t.

DAE_{it} = The change in earnings per share of firm i from $t-1$ to t.

We expect the coefficients on earnings and earnings change, b_1 and b_2, to be greater after market liberalization. This indicates that the earnings informativeness increased from pre- to post-market liberalization.

DATA

We selected sample firms from listed companies on the Korean Stock Exchange. The sample firms meet the following criteria:

(1) The firm is listed on the Korean Stock Exchange during the test periods, January 1, 1989 through December 31, 1994.
(2) The industry that a firm belongs to has more than ten firms.
(3) The firm is not going through legal proceedings during the test period.
(4) Financial data is available during the test periods.
(5) The firm does not report a loss during the last three years prior to the test period or have an accumulated deficit during the test period.

Criterion 2 is necessary to meaningfully examine the stock price differentiation within an industry. Industry is classified using the first two digits of the industry code used by the Korean Stock Exchange. Criteria 3, 4, and 5 are imposed to exclude companies that are under unusual circumstances. The final sample

Table 2. Samples Firms by Industry.

Industry	Number of Firms
Textile, clothing	11
Paper and paper products	13
Chemical products	13
Medicine	32
Electric and electronic products	32
Construction	32
Wholesale and retail	27
Investment financing	24
Total	184

includes 184 firms that met all of the selection criteria. Table 2 shows the industry distribution of the sample firms.

RESULTS

Stock Price Differentiation

As explained before, stock price differentiation is examined by investigating the stock price differentiation index and co-movement of a firm's stock prices with those of its industry before and after market liberalization. We report the results for the differentiation index first, followed by those for the co-movement behavior.

Stock Price Differentiation Index

The stock price differentiation index (see Eq. (1)) is calculated as the standard deviation of stock prices of all the firms within an industry divided by the average stock price of the firms and measures the degree to which a firm's stock price is differentiated from the industry average. Firm's stock prices tended to cluster around their industry average before market liberalization. The results indicate that this phenomenon disappeared after liberalization and stock prices are now more differentiated from the industry average.

Table 3 shows the change in the stock price differentiation index. In all eight industries, the stock price differentiation index significantly increased after market

Table 3. Stock Price Differentiation Index Before and After Stock Market Liberalization.[a]

Equation (1): $\text{DIFF}_t = \text{STD}(P_t)/\text{AVERAGE}(P_t)$

Industry	Before (1989–1990)	After (1992–1993)	Change	*t*-Value
Textile, clothing	0.30	0.97	0.67	14.51*
Paper and paper products	0.26	0.57	0.29	11.15*
Chemical products	0.22	0.64	0.42	9.76
Medicine	0.20	0.44	0.24	11.56*
Electric and electronic products	0.28	0.52	0.36	8.38*
Construction	0.20	0.27	0.07	3.66*
Wholesale and retail	0.21	0.54	0.33	7.61*
Investment financing	0.17	0.24	0.07	4.82*

[a] Stock price differentiation index (DIFF) was calculated using monthly end closing prices.
* Significant at 1% level.

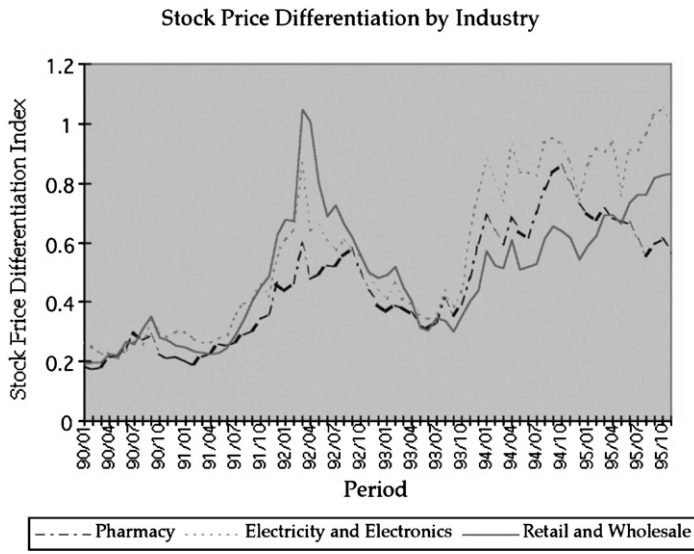

Fig. 1. Stock Price Differentiation by Industry.

liberalization, supporting Hypothesis 1a. The increase in the differentiation index varies across industries. Textile, medicine, and paper industries show greater increases than other industries. Interestingly, the differentiation indices were not much different across industries before market liberalization. However, the differences grew in the post-liberalization period, suggesting that the influence of market liberalization varies across industries.

Figure 1 graphically presents the change in the differentiation index before and after market liberalization for medicine, electricity and electronics, and the retail and wholesale industries from January 1990 to October 1995.

Co-Movement of Stock Prices

Co-movement of stock prices means that a firm's stock price or stock returns change in a fashion similar to those of the market or industry. We examine changes in co-movement by comparing the explanatory power and the coefficients of market- and industry-wide factors before and after market liberalization in a regression of stock returns on industry- and market-wide factors (as in Eq. (2)). The results are reported in Table 4.

Table 4. Co-Movement of Stock Prices Before and After Market Liberalization (t-Values in Parenthesis).

Equation (2): $r_{it} = a + b_1\text{MKRT}_t + b_2\text{INRT}_{jt} + e_{it}$

Variable	Before (1989–1990)	After (1992–1993)	Change
b_1	0.16 (0.96)	0.02 (0.18)	−0.14 (−4.17)*
b_2	2.43 (7.02)*	1.48 (5.64)*	−0.95 (−5.12)*
Adj. R^2	0.61	0.37	−0.24 (−17.03)*

*Significant at 1% level.

The average R-square of all the industries was 0.61 before liberalization and decreased to 0.37 afterwards. The change is significant with a t-value of 17.03. The coefficient on the market-wide stock price index was 0.16 before market liberalization and decreased to 0.02 after market liberalization. The decrease is statistically significant at the 1% significance level. The coefficient on the industry stock price index is highly significant both before and after market liberalization, decreasing to 1.48 in the post-liberalization period from 2.43 in the pre-liberalization period. The decrease is statistically significant at the 1% significance level.

The results in Table 4 show that the influence of market and industry stock price indices on the individual stock returns significantly decreased after market liberalization. This supports the Hypothesis 1b that the co-movement behavior of stock prices decreased after liberalization.

Relation Between Stock Price and Accounting Numbers

The results of Tables 3 and 4 show that stock prices are more differentiated and the co-movement behavior of stock prices is lower after market liberalization. Hypothesis 2a proposes that the reason for these results is due to a greater use of accounting information in firm valuation. We examine this hypothesis by investigating the association of earnings and book values with stock prices before and after market liberalization.

Relation Between the Levels of Stock Price, Earnings and Book Value

The levels test is conducted by examining how the deviations of an individual firm's stock price level from the industry average are associated with those of accounting numbers as in Eq. (3). Equation (3) regresses the distance of a firm's stock price from the industry average on those of earnings and book values from

Table 5. Relation Between Accounting Numbers and Stock Price Before and After Market Liberalization (*t*-Values in Parenthesis).

Equation (3): $\text{DPRC}_{it} = a + b_1\text{DERN}_{it} + b_2\text{DBOK}_{it} + e_i$		
Variable	Before (1989–1990)	After (1992–1993)
Intercept	0.01 (0.71)	0.01 (0.53)
b_1	0.11 (4.49)	0.15 (6.93)
b_2	0.22 (5.32)	0.36 (8.97)
Adj. R^2	0.39	0.65

their respective industry averages. We compare the coefficients on earnings and book value variables at December 31, 1990 (before market liberalization) and December 31, 1992 (after market liberalization). For the earnings variable, we use three-year averages to reduce the effects of transitory components of reported income.

The results are reported in Table 5. The earnings and book value variables are significant both before and after market opening period. The coefficients and their statistical significance substantially increased after market liberalization, however. The *t*-values increased 49% for the earnings and 69% for the book value coefficients, respectively. The adjusted *R*-square of the model also increased by 67% from 0.39 before market liberalization to 0.65 after market liberalization. We interpret the results as supporting Hypothesis 2a.

Relation Between Stock Returns and Earnings

We examine the increase in the influence of accounting numbers post-market liberalization using the return-earnings relation as in Eq. (4). Table 6 compares the results of the regression of earnings and changes in earnings variables on the stock returns before and after market liberalization. A year variable, DM, controls for the year effects within each test period. *F*-statistics provided in the last column show incremental explanatory power of earnings and earnings changes beyond the year variable, DM, only.

The *F*-statistics substantially increased after market opening, suggesting that explanatory power of both earnings variables for the stock returns, taken together, increased after market liberalization. The earnings level variable is highly significant both before and after market liberalization. However, the earnings change variable is significant in the post-liberalization period only. These results generally support Hypothesis 2b that the return-earnings relation improved after market liberalization.

Table 6. The Relation Between Stock Returns and Earnings Before and After Market Liberalization (t-Values in Parenthesis).

Equation (4): $R_{it} = a + b_1 \mathrm{AE}_{it} + b_2 \Delta \mathrm{AE}_{it} + e_i$

Variable	Before (1989–1990)	After (1992–1993)
Intercept	−0.33 (−24.30)*	0.13 (5.35)*
b_1	0.85 (6.44)*	0.67 (3.36)*
b_2	0.15 (0.86)*	1.44 (5.72)*
DM (year variable)	0.34 (22.51)*	0.02 (0.80)*
F-statistic for AE and ΔAE	25.35	42.53

*Significant at 1% level.

SUMMARY AND CONCLUSION

This study examines changes in Korean stock market behavior around its market liberalization in 1992. Before market liberalization, Korean firms' stock prices tended to move together with industry or market indices, and accounting information did not play an important role in stock pricing. With the market liberalization in 1992 however, anecdotal evidence suggested that the co-movement behavior of stock prices decreased, and stock price differentiation emerged according to their future potentials.

We propose that accounting information has become a more important factor in stock pricing, which helps to explain changes in stock market behavior in the post-liberalization period. The results support our hypotheses and are sufficiently robust to using alternative proxies (including levels of and changes in the stock price and accounting variables). The co-movement behavior of stock prices by industry decreased, and stock prices are more differentiated and determined by individual firm specific factors such as earnings and book values after market opening. We interpret these findings as evidence of the influence of foreign investors introducing fundamental valuation techniques with the market liberalization.

We believe that our findings make the following contributions to accounting research in this area. First, this study provides evidence to the accounting policy makers documenting how the demand for accounting information for valuation purposes increases in the post-liberalization period. Therefore, policy makers should require listed companies to provide more value relevant information on a timely basis (such as through quarterly financial statements).[5] Also, policy makers should consider increasing disclosure requirements. Disclosure requirements under the Korean GAAP are not as comprehensive as those of the U.S. and

some European countries. Disclosure of value relevant information should be expanded.

Second, most stock market research assumes homogenous expectations by investors. This study provides a unique example in which such an assumption can be relaxed because of a change in the composition of market participants. Our results show how the participation of heterogeneous foreign investors in the Korean stock market changed the way in which stocks are priced. This holds valuable implications for other countries in a similar situation.

A limitation of this study is that it does not control for the improvement in market efficiency due to increasing market size regardless of liberalization. Also, we only examine the effect of liberalization on the behavior of stock prices. A more comprehensive examination of its effect on the capital market could provide a broader explanation on the role of accounting information in the pricing of other securities.

NOTES

1. There are numerous articles that report the change in investment behavior since market liberalization. For instance, an article entitled "Foreign investors' power that influence Korea's stock market" in *Monthly Chosun* (July 2000), one of the most popular Korean monthly magazines, reports the following:

> Prior to stock market opening, investment was mainly based on the rumors and anecdotes that a company has a certain good news. However, foreign investors have brought into Korean market an eye to see the company as well as money. . . . Foreign investors changed the shape of Korean market since the market opening. . . . Recently, Korean investors spend a considerable amount of time analyzing foreign investor's investment behavior . . .

Monthly Chosun (July 2000) also reports that foreign investors occupy about 30% of market value of Korean Stock Exchange, 70% of which is U.S. investors. Most of these investors are institutional investors.

2. The limit is for the companies listed in the Korean Stock Exchange (KSE), a major Korean stock exchange. The Korean version of NASDAQ, KOSDAQ was established in 1997. The limits for the KOSDAQ companies are 15% (5%) for a company (an individual) in 1997, which increased to 55% (50%) at April 1, 1998. The limit was entirely lifted on May 25, 1998. This paper only examines KSE companies.

3. Most Korean newspapers report the foreign investor's investment strategy (net buy and sell order by foreign investors). Many domestic investors consider foreign investors' investment behavior as a good market indicator.

4. As shown in Table 1, foreigner's investment limit gradually increased to 26% by December 1997, at which time it drastically increased to 50%, and finally the restriction was entirely lifted on May 25, 1998. It would be interesting to examine the period when the market is completely liberalized. However, we focus on the initial market opening period because we believe that the most important time period is around the market opening.

Further, Korean stock market is under a deep recession since its economic crisis around the end of 1997, being influenced by many non-company specifics factors.

5. Quarterly financial statements are now required in Korea from the fiscal year of 2000.

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PREDICTING CONSOLIDATED EARNINGS IN JAPAN: THE INCREMENTAL USEFULNESS OF SUBSIDIARY EARNINGS

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ABSTRACT

Despite the wide acceptance of consolidated earnings worldwide, parent-only financial statements have historically been the primary financial statements in Japan. We examine whether subsidiary earnings in Japan are incrementally useful in predicting consolidated earnings beyond the information already available in parent-only earnings. For each of the six primary earnings levels reported in Japan (sales, gross profit, operating income, current income, earnings before taxes, and net income), we find that the persistence of subsidiary earnings is similar to or greater than the persistence of parent-only earnings in explaining year-ahead consolidated earnings. Consistent with expectations based on earnings persistence, we find that, for each of the six earnings levels examined, subsidiary earnings improve the predictability of consolidated earnings beyond the information already found in parent-only earnings. Furthermore, we find that firm-specific characteristics such as the ratio of subsidiary assets to consolidated assets and the persistence of subsidiary earnings are related to the usefulness of subsidiary earnings in predicting consolidated earnings.

Advances in International Accounting
Advances in International Accounting, Volume 16, 85–103

ISSN: 0897-3660/doi:10.1016/S0897-3660(03)16005-9

INTRODUCTION

Publicly traded firms in Japan are required to report both parent-only and consolidated financial information. Consolidated financial statements are more widely accepted internationally and are generally required under international accounting standards (IAS 27, 1988). Since earnings for the entire consolidated entity, not just the parent company, accrue to shareholders in the form of dividends, predictions of consolidated earnings should be more useful in valuing the firm (Ohlson, 1995). However, due to the unique business environment, some question whether consolidated earnings provide useful information in Japan (Lowe, 1990; McKinnon, 1984). The purpose of our paper is to examine whether subsidiary earnings are incrementally useful in forecasting consolidated earnings in Japan beyond the information already available in parent-only earnings. For simplicity, we refer to the additional earnings information due to consolidation, computed as the difference between consolidated and parent earnings, as "subsidiary earnings."[1]

Bernard (1995) suggests that the focus of financial accounting research should be on predicting earnings in contrast to understanding the contemporaneous association of accounting information with stock returns. By so doing, financial accounting researchers can offer findings that are prescriptive in nature, and not just descriptive of the information already being impounded into stock prices. In this spirit, our paper addresses the usefulness of consolidated earnings in Japan from the perspective of earnings prediction. Specifically, we estimate the persistence of parent and subsidiary earnings to determine if subsidiary earnings information potentially adds to parent information in explaining future consolidated income. If subsidiary earnings are persistent, then inclusion of subsidiary earnings in forecast models should improve the predictability of consolidated earnings.

We examine earnings persistence and earnings predictability for each of the six primary earnings levels reported in Japan: sales, gross profit, operating income, current income, earnings before taxes, and net income. Operating income is equal to gross profit minus selling, general and administrative expenses. Current income is computed as operating income less non-operating revenues and expenses. Earnings before taxes include current income adjusted for extraordinary items. Extraordinary items are defined more broadly in Japan to include items such as prior period adjustments and income on the sale of assets. An analysis by earnings level is important since prior research indicates earnings persistence varies by earnings level for U.S. firms (Fairfield, Sweeney & Yohn, 1996) and Japanese firms (Herrmann, Inoue & Thomas, 2000). Likewise, differences in the persistence of earnings are related to the predictability of earnings. Greater earnings persistence improves earnings predictability (Fairfield, Sweeney & Yohn, 1996). Related to

our study, since the persistence of parent and subsidiary earnings is likely to vary by earnings level, the improvement in earnings predictability due to subsidiary earnings is also likely to vary by earnings level. Another reason to examine earnings predictability for different earnings levels is that standard setters in both the United States and Japan are placing increasing emphasis on the reporting of earnings levels. The Financial Accounting Standards Board is currently reexamining the proper classification of earnings components in its financial performance reporting project (FASB, 2001). The Japanese Securities and Exchange Law require listed firms to publicly disclose annual management forecasts in their annual and semiannual press releases at four different earnings levels: sales, operating income, current income, and net income. Furthermore, analyst forecasts of parent-only and consolidated data are also reported for these same four earnings levels, providing an indication that information by earnings level is valued in the Japanese market.

The results provide evidence supporting the usefulness of subsidiary earnings in predicting consolidated earnings in Japan. For each of the six levels of earnings, we find that the persistence of subsidiary earnings levels are similar to or exceed the persistence of parent-only earnings levels in explaining year-ahead consolidated earnings levels and therefore, the inclusion of subsidiary earnings should improve the predictability of earnings. Consistent with expectations based on subsidiary earnings persistence, subsidiary earnings are useful, beyond the information found in parent-only earnings, in predicting consolidated earnings. This result holds for each of the six earnings levels examined with the strongest contribution of subsidiary information found at the sales level and the weakest, yet still highly significant, contribution at the net income level. Extending the analysis, we find that firm-specific characteristics such as the ratio of subsidiary assets to consolidated assets and the persistence of subsidiary earnings are positively related to the usefulness of subsidiary earnings in predicting consolidated earnings. Earnings predictability improves as the relative influence of subsidiaries increases and as the persistence of subsidiary earnings increases.

RELATED LITERATURE AND HYPOTHESIS DEVELOPMENT

Consolidated earnings in Japan represent the earnings of the parent company, earnings of consolidated subsidiaries, and earnings under the equity method for controlled investments, less any income assigned to non-controlling interest and other consolidation adjustments (e.g. goodwill amortization), and elimination

of all income arising from affiliated transactions. For the parent financial statements, all subsidiaries and affiliated companies are accounted for using the cost method. The earnings of the parent company are computed as the earnings of the individual operations of the parent company plus dividends received from subsidiaries and affiliates. Subsidiary earnings are defined as the difference between consolidated earnings and parent-only earnings. Thus, while we use the term "subsidiary earnings" for expositional purposes, this measure represents the incremental earnings beyond parent earnings due to consolidation practices.

There are several alternative approaches that may be taken to examine the usefulness of consolidated earnings information in relation to parent-only earnings information in Japan. One alternative is to compare the returns-earnings relations for consolidated and parent earnings. Hall, Hamao and Harris (1994) report a similar association with returns for Japanese consolidated and parent earnings over both a one-year window and long window regressions. No evidence is found of a better returns-earnings relationship for Japanese consolidated earnings than for Japanese parent earnings. As earnings explain such a small portion of returns, especially in Japan, it is difficult to arrive at definitive conclusions regarding the potential usefulness of consolidated earnings information based on the association between returns and earnings. A second alternative is to examine financial analyst forecasts. Beckman (1998) examines the bias and accuracy of analyst forecasts in Japan. She finds that consolidated forecasts are more biased and less accurate than parent earnings forecasts. While this provides evidence regarding the relative accuracy of consolidated and parent forecasts, it does not directly address whether consolidated earnings provide useful information in Japan. A third approach would be to specifically examine if and how the consolidated earnings information is being used relative to the parent earnings information. Possibly, a case study or survey could provide insights into how consolidated information is being used leading to empirical testing. We take an entirely different approach. We examine the usefulness of consolidated earnings in Japan from the perspective of earnings prediction. Does the disclosure of consolidated information add to the information available in parent earnings in forecasting total earnings for Japanese firms?

Predicting consolidated earnings may be more value relevant than predicting parent-only earnings for several reasons. Conceptually, since earnings for the entire consolidated entity will accrue to the shareholders in the form of dividends, forecasts of future consolidated earnings should be more useful in valuing the firm (Ohlson, 1995). Consolidated earnings include parent earnings and accrual-basis earnings of the subsidiaries and affiliates while eliminating earnings created through inter-company transactions. Parent earnings include only the cash dividends received from subsidiaries and affiliates and fail to remove

the effects of inter-company transactions. As parent earnings represent only a portion of the total future earnings of the company, they provide only a partial measure of firm value. Empirically, Herrmann, Inoue and Thomas (2001) find that Japanese consolidated earnings beyond parent earnings are related to future earnings, yet the Japanese stock market impounds this additional information found in consolidated earnings with a lag. Therefore, although the additional information in consolidated earnings is persistent, investors initially either ignore or at least underestimate its importance. Finally, an argument for consolidated earnings can be made from practice. Consolidated financial statements are more widely-accepted around the world than parent-only financial statements especially for cross-border listings. Consolidated financial statements are also generally required under international accounting standards (IAS 27, 1988).

Despite the greater acceptance of consolidation practices worldwide, it is not clear whether consolidated earnings are preferable to parent-only earnings in Japan. Much of the previous market based research in Japan has been performed using parent-only data (Conroy, Eades & Harris, 2000; French & Poterba, 1991) and parent-only data tends to equal or outperform consolidated information in empirical testing (Darrough & Harris, 1991; Douthett & Jung, 2001; Hall, Hamao & Harris, 1994; Sakurai, 1988). Furthermore, Japanese analysts more commonly engage in forecasts of parent earnings compared to consolidated earnings. In discussions with I/B/E/S, we were told that I/B/E/S published forecasts and actual earnings per share amounts in Japan were based on the "primary" earnings number, where primary represents the majority of earnings estimates received by analysts for a company. For 80–85% of the Japanese companies listed by I/B/E/S, parent-only earnings represented the primary earnings number.

In recent years, consolidation practices have received more attention in Japan. Beginning in March 1995, the Ministry of Finance required companies to widen disclosures of consolidated subsidiaries and affiliates (e.g. consolidated statements can no longer exclude subsidiaries that have assets or sales less than 10% of the parent's) as part of a move to bring accounting standards more into line with international practice. Beginning in March 2000, the Japanese Securities and Exchange Law required consolidated financial statements to be the primary financial statements and parent-only statements to be secondary in the annual report filed with the Ministry of Finance. The Japanese Commercial Code, however, continues to consider the parent-only statements as the primary financial statements.

We investigate whether, in the Japanese business environment, subsidiary earnings are useful beyond parent earnings in improving the predictability of consolidated earnings. If the criticisms offered by academic researchers and analysts regarding the inferiority of consolidated financial information in the Japanese

business environment are correct, then subsidiary earnings may provide no incremental benefit in predicting future consolidated earnings (i.e. subsidiary earnings represent only noise in earnings). On the other hand, if subsidiary earnings are persistent in relation to future consolidated earnings, then inclusion of subsidiary earnings in prediction models should improve the predictability of consolidated earnings. The formal hypothesis to be tested is stated below in the null form.

H_0. Subsidiary earnings are not incrementally useful beyond parent-only earnings in predicting next year's consolidated earnings.

SAMPLE AND RESEARCH DESIGN

Japanese financial data are obtained from the NEEDS-CD ROM, NIKKEI Corporate Financial Data. The initial sample includes all Japanese listed firms reporting both consolidated and parent-only financial statements. Financial, insurance, real estate, transportation, utility, and service industries are excluded from the sample as these industries are either specially regulated or have specialized income reporting practices in Japan and therefore do not commonly report earnings levels such as gross profit. This results in an initial sample of 7,565 observations over the estimation period from 1987 to 1999. Observations for year 2000, are not used in estimation, but are used in computing forecast error. To control for differences in size across firms and over time, all earnings variables are scaled by average consolidated assets.[2] To control for outliers, we delete the top and bottom 1% of the distribution for consolidated and parent sales, gross profit, operating income, current income, earnings before taxes, and net income in year t and year $t-1$. This reduces the estimation sample to 6,808 firm-year observations for 809 firms.[3]

The relation between consolidated earnings levels in year t and parent and subsidiary earnings levels in year $t-1$ are estimated in the following persistence equations:

$$C_t = \beta_0 + \beta_1 P_{t-1} + \nu_t \tag{1}$$

$$C_t = \alpha_0 + \alpha_1 P_{t-1} + \alpha_2 S_{t-1} + \varepsilon_t \tag{2}$$

where: C_t = the consolidated earnings level in year t; P_{t-1} = the parent-only earnings level in year $t-1$; S_{t-1} = the subsidiary earnings level in year $t-1$.[4]

Subsidiary amounts for sales, gross profit, operating income, current income, income before taxes, and net income are defined as the difference between consolidated and parent amounts.[5] Thus, subsidiary earnings represent the earnings

beyond parent earnings due to consolidation practices. Model (1) estimates the persistence of parent earnings in relation to next period's consolidated earnings. Model (2) measures the persistence of both parent and subsidiary earnings in relation to next period's consolidated earnings.

For each of the six earnings levels, Model (1) and Model (2) are estimated separately for each three-digit industry (thirteen different industries) over rolling three-year estimation periods.[6] The estimated relation is then applied out of sample to provide a forecast of next year's consolidated earnings level. Predictive accuracy is measured as the absolute value of the difference between the actual consolidated earnings level in year $t + 1$ and the expected consolidated earnings level based on Model (1) or Model (2):

$$\text{AFE}_1 = |C_{t+1} - \beta_0 - \beta_1 P_t| \tag{1a}$$

$$\text{AFE}_2 = |C_{t+1} - \alpha_0 - \alpha_1 P_t - \alpha_2 S_t| \tag{2a}$$

where: AFE_1 = the absolute forecast error consolidated earnings in year $t + 1$ using β_0 and β_1 from Model (1) and parent earnings in year t; AFE_2 = the absolute forecast error using α_0, α_1, and α_2 from Model (2) and parent and subsidiary earnings in year t; C_{t+1} = the consolidated earnings level in year $t + 1$; P_t = the parent-only earnings level in year t; S_t = the subsidiary earnings level in year t.

For example, for industry i we use observations of the dependent variable over the 1987–1989 period to estimate the coefficients in Models (1) and (2). We then apply the estimated coefficients to earnings amounts in 1989 to formulate a prediction of consolidated earnings in 1990. The process is then repeated using observations of the dependent variable over the 1988–1990 period to forecast consolidated amounts for 1991, and so on. The mean and median absolute forecast errors are then compared across models. A significantly lower absolute forecast error for Model (2) provides evidence that subsidiary amounts improve predictive accuracy and supports the incremental usefulness of subsidiary earnings in predicting consolidated earnings. If Model (2) does not improve predictive accuracy, then criticisms made by Japanese analysts and investors against consolidated reporting appear warranted.

A total of 5,799 forecasts are made for each earnings level over the eleven-year period from 1990 to 2000. The number of forecasts is 1,009 less than the number of observations used in the estimation models for two reasons. First, 832 observations were in 1987 and 1988. Since three years of data are used in the estimation models, 1987 and 1988 do not have sufficient data for the current and two preceding years. Second, 177 observations are deleted because they contain data for the estimation period, but not for the prediction year. In developing our estimation models, we

Table 1. Descriptive Statistics ($n = 6{,}808$).

Panel A: Distribution Statistics

Earnings Level[a]	Consolidated Mean	Parent Mean	Consolidated Std. Dev.	Parent Std. Dev.
Sales	1.05	0.892	0.411	0.397
Gross profit	0.231	0.179	0.112	0.100
Operating income	0.041	0.032	0.030	0.026
Current income	0.036	0.032	0.032	0.028
Earnings before taxes	0.034	0.029	0.033	0.029
Net income	0.015	0.014	0.020	0.017

Panel B: Pearson Correlation Coefficients

Earnings Level[a]	Consolidated/ Parent	Consolidated/ Subsidiary	Parent/ Subsidiary
Sales	0.933	0.280	−0.091
Gross profit	0.907	0.468	0.051
Operating income	0.924	0.511	0.144
Current income	0.948	0.558	0.265
Earnings before taxes	0.942	0.518	0.199
Net income	0.917	0.542	0.162

[a] Sales = total sales. Gross profit = sales minus cost of goods sold. Operating income = gross profit minus selling, general, and administrative expenses. Current income = operating income minus (plus) non-operating expenses (income). Earnings before taxes = current income minus (plus) extraordinary losses (gains). Parent net income = earnings before taxes minus income tax expense. Consolidated net income = earnings before taxes minus income tax expense and, consolidation adjustments, and minority interest. All variables are scaled by average consolidated assets. Subsidiary amounts are defined as consolidated amounts less parent amounts.

control for outliers in the estimation period, but we do not control for outliers or missing data in the prediction year in order to avoid hindsight bias.

The descriptive statistics are presented in Table 1. The distribution statistics in Panel A indicate that consolidated earnings levels are larger than parent earnings levels. The difference between consolidated and parent is greatest for sales and decreases as the earnings levels approach net income. The difference between consolidated and parent net income, scaled by average consolidated assets, is only 0.001. Consolidated income items are also more variable as the standard deviation for consolidated information exceeds that for parent information at every earnings level. The Pearson correlation coefficients are presented in Panel B between consolidated/parent, consolidated/subsidiary, and parent/subsidiary. The consolidated/parent correlation is much greater than the consolidated/subsidiary

correlation at each earnings level. The final column indicates that the correlation between parent and subsidiary earnings levels is lower, and thus, subsidiary earnings levels likely provide different information from that already available in disclosures of parent earnings levels.

RESULTS

Our primary tests examine the persistence and earnings predictability based on parent earnings levels (Model (1)) and based on both parent and subsidiary earnings levels (Model (2)) in explaining year-ahead consolidated earnings levels. We investigate the incremental contribution of subsidiary earnings for each of the six earnings levels reported in Japan. We also perform additional tests replacing consolidated earnings with parent earnings as the dependent variable in the estimation and prediction models. Finally, we explore whether firm specific characteristics, such as the ratio of subsidiary assets to consolidated assets and the persistence of subsidiary earnings, are related to the usefulness of subsidiary earnings in predicting consolidated earnings.

Predictions of Consolidated Earnings

The relation between consolidated earnings levels in year t and parent and subsidiary earnings levels in year $t + 1$ are presented in Table 2. Results are presented

Table 2. Relationship Between Consolidated Earnings in Year t and Parent and Subsidiary Earnings in Year $t - 1$ ($n = 6{,}808$).

Earnings Level[a]	Model (1)[b]: $C_t = \beta_0 + \beta_1 P_{t-1} + \nu_t$			Model (2)[b]: $C_t = \alpha_0 + \alpha_1 P_{t-1} + \alpha_2 S_{t-1} + \varepsilon_t$			
	β_0	β_1	R^2	α_0	α_1	α_2	R^2
Sales	0.293*	0.824*	0.714	0.043*	0.935*	0.950*	0.924
Gross profit	0.069*	0.899*	0.680	0.010*	0.934*	0.962*	0.915
Operating income	0.014*	0.816*	0.556	0.008*	0.793*	0.784*	0.660
Current income	0.006*	0.901*	0.657	0.005*	0.835*	0.820*	0.737
Earnings before taxes	0.008*	0.849*	0.583	0.006*	0.796*	0.802*	0.669
Net income	0.004*	0.775*	0.440	0.004*	0.727*	0.715*	0.529

[a] Same as in Table 1. All variables are scaled by average consolidated assets. Subsidiary amounts are defined as consolidated amounts less parent amounts.

[b] C_t = consolidated earnings level in year t. P_{t-1} = parent-only earnings level in year $t - 1$. S_{t-1} = subsidiary earnings level in year $t - 1$.

*Significant at the 0.01 level.

for each of the six primary earnings levels reported in Japan. The persistence of parent earnings (β_1) in Model (1) for year-ahead consolidated earnings is significant at each level of earnings. Comparing the persistence across earnings levels, the persistence coefficients for parent earnings levels show no obvious trend. The regression coefficients in Model (1), the model excluding the effects of subsidiary amounts, have a much larger intercept at each earnings level than the intercept reported for Model (2). The intercepts in Model (1) may be absorbing at least part of the effect of the omitted subsidiary amounts for each earnings level.

The inclusion of subsidiary earnings levels in Model (2) indicates that both parent earnings levels (α_1) and subsidiary earnings levels (α_2) are highly persistent. There is also a general decrease in persistence as earnings levels go from sales at the top of the income statement down to net income at the bottom of the income statement. This is consistent with prior research findings that earnings components reported lower in the income statement contain more transitory components of income (Fairfield, Sweeney & Yohn, 1996).

Comparing the persistence between parent and subsidiary earnings for each level reveals that the persistence of subsidiary earnings is higher than or not significantly different from the persistence of parent earnings. Tests of differences (not tabulated) reveal that the coefficient on subsidiary sales exceeds that on parent sales (p-value $= 0.0153$) and the coefficient on subsidiary gross profit exceeds that on parent gross profit (p-value $= 0.0002$). The remaining parent and subsidiary persistence coefficients on operating income, current income, earnings before taxes, and net income are not significantly different. The reported adjusted R-square represents the average over the thirteen industries and eleven years. The higher average adjusted R-square for Model (2) in comparison to Model (1) for each earnings level is also consistent with subsidiary earnings providing information regarding next period's consolidated earnings. The results support subsidiary earnings being incrementally useful in explaining year-ahead consolidated earnings.

The results examining the predictability of consolidated earnings based on Models (1) and (2) are reported in Table 3. Both mean (Panel A) and median (Panel B) absolute forecast errors are presented. The estimation models are run separately for each three-digit industry code and pooled over three-year periods. The coefficients are then used to estimate consolidated earnings for the following year. Thus, observations over three-year periods (e.g. 1987–1989) are used to predict out of sample year-ahead consolidated earnings (e.g. 1990). Predictions of consolidated earnings are made over the eleven-year period from 1990 to 2000.

The results in Table 3, consistent with expectations based on the persistence findings reported in Table 2, indicate that subsidiary information is informative beyond parent information in predicting consolidated amounts. The absolute forecast error for Model (1) is significantly greater than the absolute forecast error

Table 3. Mean and Median Absolute Forecast Errors of Consolidated Earnings in Year $t + 1$ Using Coefficients from Models (1) and (2) and Parent and Subsidiary Earnings in Year t ($n = 5{,}799$).

Panel A: Mean Absolute Forecast Errors

Earnings Level[a]	Model (1a)[b]: $AFE_1 = \lvert C_{t+1} - \beta_0 - \beta_1 P_t \rvert$	Model (2a)[b]: $AFE_2 = \lvert C_{t+1} - \alpha_0 - \alpha_1 P_t - \alpha_2 S_t \rvert$	Mean Difference	t-Statistic
Sales	0.1140	0.0601	0.0539*	40.77
Gross profit	0.0366	0.0199	0.0167*	39.96
Operating income	0.0157	0.0143	0.0014*	14.10
Current income	0.0156	0.0143	0.0013*	13.48
Earnings before taxes	0.0183	0.0169	0.0014*	14.00
Net income	0.0131	0.0122	0.0009*	12.26

Panel B: Median Absolute Forecast Errors

Earnings Level[a]	Model (1a)[b]: $AFE_1 = \lvert C_{t+1} - \beta_0 - \beta_1 P_t \rvert$	Model (2a)[b]: $AFE_2 = \lvert C_{t+1} - \alpha_0 - \alpha_1 P_t - \alpha_2 S_t \rvert$	Median Difference[c]
Sales	0.0897	0.0465	0.0394*
Gross profit	0.0274	0.0152	0.0110*
Operating income	0.0115	0.0104	0.0010*
Current income	0.0112	0.0102	0.0007*
Earnings before taxes	0.0121	0.0109	0.0007*
Net income	0.0077	0.0071	0.0005*

[a] Same as in Table 1.

[b] AFE = absolute forecast error. C_{t+1} = consolidated earnings level in year $t + 1$. P_t = parent-only earnings level in year t. S_t = subsidiary earnings level in year t. β_0, β_1, α_0, α_1, and α_2 are coefficient estimates obtained from Model (1) and Model (2) in Table 2.

[c] The median difference is calculated as the median paired difference of AFE_1 and AFE_2, which generally will not equal the median of AFE_1 minus the median of AFE_2. All variables are scaled by average consolidated assets. Subsidiary amounts are defined as consolidated amounts less parent amounts.

* Significant at the 0.01 level.

for Model (2) at every earnings level. This result holds for both mean differences (based on a t-test of paired differences) and median differences (based on the signed rank test) at every earnings level. We reject the null hypothesis and conclude that subsidiary earnings at each earnings level are useful in predicting consolidated earnings, beyond the information already available in parent earnings.

The usefulness of subsidiary amounts in predicting consolidated amounts appears to be positively associated with the level of earnings. Comparing the difference in absolute forecast error across earnings levels, the difference and the significance of the difference generally decreases the lower the earnings level on

the income statement. Subsidiary sales contribute most to predictions of consolidated sales followed by the contribution of subsidiary gross profit to predictions of consolidated gross profit and so on down to net income. The results by earnings level appear to be related to subsidiary earnings persistence. Sales and gross profit have the greatest subsidiary earnings persistence in Table 2 and also exhibit the greatest improvement in predictive accuracy from inclusion of subsidiary earnings in the predictive model. Likewise, net income has the lowest subsidiary earnings persistence and has the lowest improvement in predictive accuracy. This relation between the usefulness of subsidiary earnings in predicting consolidated earnings and the persistence of subsidiary earnings levels is examined in the next section.

Predictions of Parent Earnings

The previous section demonstrated that subsidiary earnings improved consolidated earnings predictions at each level on the income statement. This improvement is likely due to subsidiary earnings providing additional information unique to the information provided by parent earnings in explaining future consolidated earnings. However, it is possible that subsidiary earnings are simply helping to predict *parent* earnings, which leads to an improvement in predicting consolidated earnings. That is, subsidiary earnings may serve the purpose of predicting the portion of next period's parent earnings that is not predicted by current parent earnings. For instance, parent earnings predict next period's parent earnings with error. This error may be related to factors such as changes in the economic climate. If subsidiary earnings were impacted earlier by changes in the economic climate than parent earnings were, subsidiary earnings may help in explaining next period parent earnings. This residual effect of subsidiary earnings could explain the results reported in Tables 2 and 3 and would not necessarily be consistent with the conclusion that consolidated reporting is superior in Japan. To differentiate between the two alternative explanations, we examine persistence and predictive accuracy using parent earnings, rather than consolidated earnings, as the dependent variable. If the former explanation is true, we should not expect subsidiary earnings levels to be informative in explaining year-ahead parent earnings levels. If the latter explanation is true, then subsidiary earnings levels should also improve predictions of year-ahead parent earnings levels. Analogous to Models (1) and (2), the persistence coefficients are estimated as follows:

$$P_t = \beta_0 + \beta_1 P_{t-1} + \nu_t \tag{3}$$

$$P_t = \alpha_0 + \alpha_1 P_{t-1} + \alpha_2 S_{t-1} + \varepsilon_t \tag{4}$$

Table 4. Relationship Between Parent Earnings in Year t and Parent and Subsidiary Earnings in Year $t-1$ ($n = 6{,}808$).

Earnings Level[a]	Model (3)[b]: $P_t = \beta_0 + \beta_1 P_{t-1} + \nu_t$			Model (4)[b]: $P_t = \alpha_0 + \alpha_1 P_{t-1} + \alpha_2 S_{t-1} + \varepsilon_t$			
	β_0	β_1	R^2	α_0	α_1	α_2	R^2
Sales	0.027*	0.942*	0.939	0.034*	0.937*	−0.018*	0.940
Gross profit	0.006*	0.938*	0.918	0.007*	0.936*	−0.001	0.920
Operating income	0.005*	0.801*	0.677	0.006*	0.800*	0.005	0.682
Current income	0.004*	0.835*	0.750	0.004*	0.829*	0.090*	0.754
Earnings before taxes	0.005*	0.790*	0.657	0.004*	0.778*	0.191*	0.668
Net income	0.004*	0.702*	0.502	0.004*	0.687*	0.258*	0.530

[a] Same as in Table 1. All variables are scaled by average consolidated assets. Subsidiary amounts are defined as consolidated amounts less parent amounts.
[b] P_{t-1} = parent-only earnings level in year $t-1$. S_{t-1} = subsidiary earnings level in year $t-1$.
*Significant at the 0.01 level.

where: P_t = the parent-only earnings level in year t; P_{t-1} = the parent-only earnings level in year $t-1$; S_{t-1} = the subsidiary earnings level in year $t-1$.

The relation between parent earnings levels in year t and parent and subsidiary earnings levels in year $t-1$ are presented in Table 4. The persistence of parent earnings in relation to year-ahead parent earnings in Models (3) and (4) are similar to those reported in Table 2 in relation to year-ahead consolidated earnings. However, this is not the case for subsidiary earnings. The relation of subsidiary earnings with year-ahead parent earnings is much lower than the relation of subsidiary earnings with year-ahead consolidated earnings reported previously in Table 2. The coefficients on subsidiary earnings levels for sales and gross profit are negative, and the coefficients on the remaining four earnings levels are substantially lower for subsidiary earnings than for parent earnings. Furthermore, the average R-squares are nearly identical across Models (3) and (4).

Tests of forecast accuracy for Models (3) and (4) are measured as follows:

$$\mathrm{AFE}_3 = |P_{t+1} - \beta_0 - \beta_1 P_t| \tag{3a}$$

$$\mathrm{AFE}_4 = |P_{t+1} - \alpha_0 - \alpha_1 P_t - \alpha_2 S_t| \tag{4a}$$

where: AFE_3 = the absolute forecast error consolidated earnings in year $t+1$ using β_0 and β_1 from Model (3) and parent earnings in year t; AFE_4 = the absolute forecast error using α_0, α_1, and α_2 from Model (4) and parent and subsidiary earnings in year t; P_t = the parent-only earnings level in year t; S_t = the subsidiary earnings level in year t.

Table 5. Mean and Median Absolute Forecast Errors of Parent Earnings in Year $t + 1$ Using Coefficients from Models (3) and (4) and Parent and Subsidiary Earnings in Year t ($n = 5{,}799$).

Panel A: Mean Absolute Forecast Errors

Earnings Level[a]	Model (3a)[b]: $AFE_3 = \lvert P_{t+1} - \beta_0 - \beta_1 P_t \rvert$	Model (4a)[b]: $AFE_4 = \lvert P_{t+1} - \alpha_0 - \alpha_1 P_t - \alpha_2 S_t \rvert$	Mean Difference	t-Statistic
Sales	0.0518	0.0518	0.0000	−0.35
Gross profit	0.0160	0.0161	−0.0001	−2.39
Operating income	0.0116	0.0116	0.0000	−1.58
Current income	0.0114	0.0114	0.0000	−1.13
Earnings before taxes	0.0142	0.0142	0.0000	0.53
Net income	0.0101	0.0101	0.0000	1.05

Panel B: Median Absolute Forecast Errors

Earnings Level[a]	Model (3a)[b]: $AFE_3 = \lvert P_{t+1} - \beta_0 - \beta_1 P_t \rvert$	Model (4a)[b]: $AFE_4 = \lvert P_{t+1} - \alpha_0 - \alpha_1 P_t - \alpha_2 S_t \rvert$	Median Difference[c]
Sales	0.0377	0.0379	0.0000
Gross profit	0.0117	0.0118	−0.0001*
Operating income	0.0081	0.0082	−0.0001*
Current income	0.0079	0.0078	0.0000
Earnings before taxes	0.0086	0.0087	0.0000
Net income	0.0052	0.0053	0.0001*

[a] Same as in Table 1.

[b] AFE = absolute forecast error. P_{t+1} = consolidated earnings level in year $t + 1$. P_t = parent-only earnings level in year t. S_t = subsidiary earnings level in year t. β_0, β_1, α_0, α_1, and α_2 are coefficient estimates obtained from Model (3) and Model (4) in Table 4.

[c] The median difference is calculated as the median paired difference of AFE_1 and AFE_2, which generally will not equal the median of AFE_1 minus the median of AFE_2. All variables are scaled by average consolidated assets. Subsidiary amounts are defined as consolidated amounts less parent amounts.

* Significant at the 0.01 level.

Results are reported in Table 5. As subsidiary earnings are generally not persistent in relation to future parent earnings, we do not expect subsidiary earnings to be useful in predicting future parent earnings (i.e. $AFE_3 - AFE_4 = 0$). In contrast to the results in predicting consolidated earnings reported in Table 3, subsidiary earnings are not useful in predicting parent amounts, beyond parent-only data. The mean difference between AFE_3 and AFE_4 is not significant in the hypothesized direction for any of the six earnings levels. The only significant mean difference is for gross profit (p-value = 0.0168), but this difference is in the opposite direction whereby inclusion of subsidiary earnings in the estimation model reduced

predictive accuracy. The median differences in Panel B were insignificant, except for gross profit and operating income where forecast accuracy declined with the addition of subsidiary amounts and for net income where forecast accuracy increased. We conclude that subsidiary earnings provide additional information unique to parent earnings in explaining future consolidated earnings since subsidiary earnings are generally not incrementally useful in predicting parent earnings.

Factors Explaining the Improvement in Forecast Accuracy of Consolidated Earnings

In this section, we explore firm-specific characteristics that may explain the incremental usefulness of subsidiary earnings in predicting consolidated earnings. For certain types of firms, subsidiary earnings may play an increasing role in helping to predict consolidated earnings. We estimate the following model:

$$\begin{aligned} \mathrm{AFE}_{1,t+1} - \mathrm{AFE}_{2,t+1} = {} & \delta_0 + \delta_1 \mathrm{SCratio}_t + \delta_2 \mathrm{PersistS}_t + \delta_3 \mathrm{PersistP}_t \\ & + \delta_4 \mathrm{DE}_t + \delta_5 \mathrm{Size}_t + \mu_{t+1} \end{aligned} \tag{5}$$

where: $AFE_{1,t+1} - \mathrm{AFE}_{2,t+1}$ represents the usefulness of subsidiary earnings in forecasting consolidated earnings (the more positive the difference, the greater is the reduction in absolute forecast error upon inclusion of subsidiary earnings in the forecast model); SCratio = the ratio of subsidiary assets (consolidated assets minus parent assets) to consolidated assets; $\mathrm{PersistS}_t$ = the persistence of subsidiary earnings levels in year t (α_2 from Model (2)); $\mathrm{PersistP}_t$ = the persistence of parent earnings levels in year t (α_1 from Model (2)); DE_t = the ratio of total debt to market value of equity in year t; and Size_t = the log of the market value of equity in year t.

We expect SCratio and PersistS to be positively related to the usefulness of subsidiary earnings in predicting consolidated earnings. As subsidiary assets relative to consolidated assets increase, the benefit of including subsidiary earnings in forecasts of consolidated earnings should also increase. Similarly, as the persistence of subsidiary earnings levels increase, the more important the subsidiary component should become in predicting consolidated earnings. We include PersistP as a control variable with no expectation of the sign of the coefficient. DE is expected to be negatively related to the difference in predictive accuracy. Firms with higher debt ratios in Japan are more likely to have informal corporate relations (e.g. *keiretsu* affiliations) that are not based solely on equity holding (Meric, Kyj, Welsh & Meric, 2000). Since consolidation is based on the percentage of equity

holding, the profitability of these companies may relate to the profitability of companies not reported in the consolidated statements. As a result, subsidiary information reported under equity method consolidation may be a noisier measure of future profitability for high debt ratio firms than for low debt ratio firms and result in subsidiary information that is less useful in predicting consolidated earnings. Size is included as a control variable with no prediction of the sign of its coefficient.

The results are reported in Table 6. SCratio is significantly positive for all earnings levels. As subsidiaries represent a larger portion of the overall company, the importance of subsidiary earnings levels in predicting consolidated earnings levels becomes greater. PersistS is positive for all levels and significant for all levels except gross profit. The greater the relation between current subsidiary earnings and future consolidated earnings, the greater the usefulness of subsidiary earnings levels in forecasting. PersistP is generally not significant. DE has a significant negative relation. Japanese firms with a higher debt to equity ratio are more likely to have corporate structures and relationships that are less appropriate for Western-based consolidation guidelines. Firms with higher debt to equity ratios weaken

Table 6. Regression of Differences in Absolute Forecast Error of Consolidated Earnings in Year $t+1$ on Explanatory Factors in Year t ($n = 5{,}799$).

Earnings Level[a]	Model (5)[b]: $AFE_{1,t+1} - AFE_{2,t+1} = \delta_0 + \delta_1 SCratio_t + \delta_2 PersistS_t + \delta_3 PersistP_t + \delta_4 DE_t + \delta_5 Size_t + \mu_{t+1}$					
	δ_0	δ_1	δ_2	δ_3	δ_4	δ_5
Expected sign	?	+	+	?	−	?
Sales	−0.0348	0.2478*	0.0676*	0.0730	−0.0014*	−0.0065*
Gross profit	−0.0098	0.0737*	0.0102	0.0230*	−0.0011*	−0.0013*
Operating income	0.0030	0.0067*	0.0015*	−0.0009	−0.0002*	−0.0003*
Current income	0.0023	0.0073*	0.0019*	−0.0006	−0.0001*	−0.0002*
Earnings before taxes	0.0014	0.0071*	0.0018*	0.0016	−0.0001*	−0.0009*
Net income	0.0001	0.0024*	0.0007*	0.0010	0.0000	−0.0001

[a] Same as in Table 1.

[b] AFE_1 = absolute forecast error of consolidated earnings in year $t+1$ using parent-only earnings in year t (see Model (1a) in Table 3). AFE_2 = absolute forecast error of consolidated earnings in year $t+1$ using parent-only earnings and subsidiary earnings in year t (see Model (2a) in Table 3). SCratio = ratio of subsidiary assets to consolidated assets (subsidiary assets are defined as consolidated assets minus parent assets). PersistS = the persistence of subsidiary earnings in year t (α_2 from Model (2) in Table 2). PersistP = the persistence of parent earnings in year t (α_1 from Model (2) in Table 2). DE = the ratio of total debt to market value of equity. Size = log of market value of equity.

* Significant at the 0.01 level.

the improvement in predictive accuracy from using subsidiary earnings beyond parent earnings. Size is negatively related to improvement in predictive accuracy. While we did not have an expectation of the sign of this relationship, one possible explanation for the significant negative relationship is that larger firms may have a greater ability to manage earnings between parent and subsidiary (Thomas, Herrmann & Inoue, 2002). Earnings management by shifting income between the parent and subsidiary may distort the usefulness of subsidiary earnings.

SUMMARY AND CONCLUSIONS

We examine whether subsidiary earnings in Japan are incrementally useful in predicting consolidated earnings beyond the information already available in parent-only earnings. If subsidiary earnings are persistent in relation to year-ahead consolidated earnings, then inclusion of subsidiary earnings in forecast models should improve the predictive accuracy of consolidated earnings. We then test whether inclusion of subsidiary earnings information improves predictions of consolidated earnings by comparing the absolute forecast errors of models excluding and including subsidiary earnings. The persistence and predictive accuracy of subsidiary earnings are examined for each of the six major earnings levels reported in Japan: sales, gross profit, operating income, current income, earnings before taxes, and net income.

For each of the six levels of earnings, we find that the persistence of subsidiary earnings levels is similar to or greater than the persistence of parent-only earnings levels in explaining year-ahead consolidated earnings levels. Consistent with expectations based on earnings persistence, we find that subsidiary earnings are incrementally useful in predicting consolidated earnings beyond the information found in parent-only earnings. This result holds for each of the six earnings levels examined. In contrast to the prediction results for consolidated earnings, we find that subsidiary earnings are generally not useful in predicting parent-only earnings, beyond the information already contained in parent-only earnings. Subsidiary earnings are not simply helping to predict *parent* earnings leading to an improvement in predictions of consolidated earnings, but rather subsidiary earnings appear to be providing information unique to that provided by parent earnings in explaining future consolidated earnings. Finally, we explore whether certain firm-specific characteristics explain the improvement in the predictability of consolidated earnings from inclusion of subsidiary earnings in the forecast models. We find that the ratio of subsidiary assets to consolidated assets, the persistence of subsidiary earnings, the degree to which firms are dominated by debt,

and firm size are related to the usefulness of subsidiary earnings in forecasting consolidated earnings.

Our results contribute to the literature by documenting the incremental usefulness of subsidiary earnings in predicting consolidated earnings. We document this finding not only for net income, but also for each of the six primary earnings levels reported in Japan. Subsidiary earnings represent more than just noise in earnings. They are persistent in relation to year-ahead consolidated earnings and inclusion of subsidiary earnings improves the predictability of consolidated earnings.

NOTES

1. The individual earnings of subsidiaries are not separately disclosed in Japan. The difference between parent-only earnings and consolidated earnings includes earnings of the subsidiaries but also includes other items (e.g. goodwill amortization) and excludes other items (e.g. profits from intercompany transactions, dividends paid by subsidiaries). We are interested in the incremental earnings beyond parent-only earnings due to consolidation practices, labeled "subsidiary earnings" in the paper.

2. The results are not dependent on the choice of scale variable. We also ran the tests after scaling by average parent assets and total market value of equity with similar results.

3. All tests were also conducted without deleting any outliers. Conclusions in our primary tests regarding the predictability of consolidated earnings are unaffected. However, conclusions in our supplementary tests regarding the predictability of parent earnings are affected. Without deleting outliers, models using parent earnings alone provide a significantly better prediction of parent earnings than do models that employ both parent and subsidiary earnings. The deletion of outliers results in the finding that there are generally no significant differences in the predictability of parent earnings between these models. With or without deletion of outliers, subsidiary earnings are not useful in predicting parent-earnings.

4. Since we focus on predicting next period's earnings, we estimate the persistence coefficients using a levels model to facilitate the interpretability of the results. Prior research using time-series models to predict earnings have often relied on changes models because of the non-stationarity of (unscaled) earnings levels. This is not a concern for our tests for two reasons. First, we estimate the models cross-sectionally over three-year periods, thus reducing substantially the effects of non-stationarity. We estimate the model cross-sectionally because of the limited number of annual observations per firm and because firms do not disclose quarterly earnings in Japan. Second, we scale by average total assets, thereby eliminating the non-stationarity of unscaled earnings.

5. Consolidated amounts never equal parent amounts.

6. The results are not dependent on the length of the estimation period. We also ran the results with one- and five-year estimation periods with consistent findings. One-year estimation periods result in smaller sample sizes for each regression, less than 30 observations in some cases. Five-year estimation periods reduce the number of forecast observations. We report the results using three-year estimation periods, weighing the tradeoff between smaller sample sizes for shorter estimation periods and the loss of prediction year observations for longer estimation periods.

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INTERIM REPORTING PRACTICES BY COMPANIES IN BAHRAIN: PREPARATION OF INTERIM ACCOUNTS AND EARLY ADOPTION OF IAS 34

P. L. Joshi and Wayne G. Bremser

ABSTRACT

This study examines the preparation of interim accounts and adoption of International Accounting Standard 34 (IAS 34) by companies in Bahrain. Data was gathered through questionnaires returned from 31 companies listed on the Bahrain Stock Exchange (BSE). It was found that although 87.6% of the sample did prepare interim reports, only 65.5% have adopted IAS 34. Four hypotheses were tested to determine the factors influencing the early adoption of IAS 34. A discriminant analysis model was employed and three variables namely, size, profitability and leverage were found significant as the most discriminating variables between the early adopters and non-adopters. The predictive power of the model was found to be more than 80%. Companies prepare interim reports for a variety of purposes including management control and listing requirements.

Advances in International Accounting
Advances in International Accounting, Volume 16, 105–122

ISSN: 0897-3660/doi:10.1016/S0897-3660(03)16006-0

INTRODUCTION

Interim financial reports provide users with timely information for making economic decisions. However, until recently, the interim financial reporting varied widely throughout the world. The release of the Cadbury Report in the U.K., as well as the initiative taken by the International Accounting Standards Committee (IASC) through International Accounting Standard 34 (IAS 34), provided momentum to the process of improving standards for the "Preparation and Presentation of Interim Reports" (IASC, 1998). Consequently, companies in Bahrain have started adopting IAS 34. One of the reasons for that might be the listing requirement. If the company is trying to maintain a presence in the listed market, it should prove its strength and ability to survive through preparing a more costly IAS 34 Interim Reports, sacrificing those cost to gain investors' goodwill. Furthermore, equity investors need to know what is going on in those companies and through Interim Reports they can get the most recent data instead of relying only on the previous years' data. Interim Reports provide important information to creditors and other stakeholders who need to assess the enterprise's capacity in generating adequate cash flows and maintain liquidity.

Bahrain is an Island nation in the Arabian/Persian Gulf and is situated about 15 miles from the east coast of Saudi Arabia. Like other oil producing countries, Bahrain also experienced remarkable economic growth following the 1970 oil prices. Petroleum processing and refining, aluminum smelting, offshore banking, ship repairs, tourism, poultry and dairy, etc. are the major industries in Bahrain. According to the Heritage Foundation (2001), by the end of 2000, the gross domestic product of Bahrain was $5.9 billion with a growth rate of 2.1%. Total exports and imports of goods and services were $4.5 billion and $4.4 billion, respectively. The major trading partners of Bahrain are Saudi Arabia, India, Japan, USA, and the U.K. Foreign Direct investment (FDI) stood at $2.7 billion. Bahrain has established a thriving financial centre with both onshore and offshore operations and the financial sector accounted for 23% of GDP. Bahrain was ranked ninth country of the world by the Heritage Foundation in its "The 2001 Index of Economic Freedom."

Bahrain has an emerging stock exchange with 41 listed companies. By the end of 1999, the value of total market capitalization of these companies was $7,152.35 million and the total number of shareholders was 103,884 (Bahrain Stock Exchange Directory, 1999). Foreign investors are allowed to invest and trade in shares in the Bahrain Stock Exchange (BSE). The primary users of financial statements are stockholders, and investors as well as the lenders and the creditors are other users of financial statements. There are eleven audit firms in Bahrain, out of which seven are international firms. Commercial Companies Act (CCA) 1975 requires all limited liability companies to prepare books of accounts

(income statement, a balance sheet, and Board of Directors' report on distribution of dividends) and get them audited. The CCA, 1975 does not require the limited liabilities companies to follow a specific set of accounting standards. However, in 1993, through an official circular, the Ministry of Commerce and Agriculture advised the corporate sector companies to adopt IASs.

REQUIREMENTS OF IAS 34

IAS 34 addresses interim financial reporting and is effective for accounting periods beginning on or after January 1999 (IASC). The objectives of this standard is to prescribe the minimum content of an interim financial report and to prescribe the principle for recognition and measurement in complete or condensed financial statements for an interim period. Timely and reliable interim financial reporting improves the ability of investors, creditors, and others to understand an enterprise's capability to generate earnings and cash flows and its financial conditions and liquidity.

An interim financial report may contain either a complete or condensed set of financial statements for a period shorter than an enterprise's full financial year. IAS 34 defines the minimum content of an interim financial report, including disclosures. IAS 34 also prescribes the accounting recognition and measurement principles that should be applied in an interim financial report. The minimum content requirement for the interim financial report is a condensed balance sheet, condensed income statement, condensed cash flow statement, condensed statements showing changes in equity, and selected explanatory notes. An enterprise should apply the same accounting policies in its interim financial report as are applied in its annual financial statements, except for accounting policy changes made after the date of the most recent annual financial statements that are to be reflected in the next annual financial statements. The frequency of an enterprise's reporting annual, half-yearly, or quarterly should not affect the measurement of its annual results. To achieve that objective, measurements for interim reporting purposes are made on a year-to-date basis.

In deciding how to recognise, classify, or disclose an item for interim financial reporting purposes, materiality is to be assessed in relation to the interim period financial data. Forecasted annual data is not to be used to judge materiality.

CONTENT OF AN INTERIM FINANCIAL REPORT

IAS 1 defines a complete set of financial statements as including the following components: balance sheet; income statement; statement showing either all

changes in equity or changes in equity other than those arising from capital transactions with owners and distributions to owners; cash flow statement; and accounting policies and explanatory notes. Additionally, the standard states that if an enterprise's interim financial report is in compliance with this standard that fact should be disclosed. An interim financial report should not be described as complying with International Accounting Standards unless it complies with all of the requirements of each applicable standard and each applicable interpretation of the Standing Interpretations Committee.

REVIEW OF LITERATURE

There is some evidence available on the adoption of International Accounting Standards and firm characteristics in the selected countries, for example, Al-Bastaki (1996) for Bahrain, Dumontier and Raffournier (1998) for Switzerland, Murphy (1999) for Switzerland, Leuz and Verrecchia (1999) for Germany, El-Gazzar et al. (1999) for the world, and Maria and Ana (2000) for Europe. However, prior research on the interim reporting practices by companies is very limited. Nieuwoudt (1998) studied the interim financial reporting practices of South African companies in a sample of fifty listed companies. His study found that the extent to which South African listed companies already complied with the proposed international and local standards on interim financial reporting is highly commendable, except for the two areas: (i) the minimum components of cash flow information were not properly disclosed; and (ii) very few companies clearly identified the accounting pronouncements applied in preparing the interim reports.

Schadewitz and Blevins (1988) carried out a study of the 256 sample interim reports of Finnish companies for the 1986 calendar year. Twenty-nine independent variables were used to explain the disclosure index. Using a Multiple Regression method, the study reported that ten variables were found significant (governance, business risk, capital structure, growth potential, size and market maturity).

McEwen and Schwartz (1992) examined if the American firms were complying with the provisions of Accounting Principle Board (APB) No. 28. A study of 76 firms was conducted to investigate compliance with the minimum disclosure requirements for the fiscal year 1989. The study found that firms did not disclose all of the information required by APB No. 28. None of the firms defined or assigned dollar values to the fourth quarter adjustments associated with the "setting up" process, even though 24 firms reported that adjustments had been made. The study suggested that enforcement of the existing provision of APB 28 would enhance the usefulness of interim reports.

On the other hand, Tan and Tower (1999) explained the issues of statutory half-yearly reporting compliance exhibited by Australian and Singapore listed companies and the potential influence of selected contingent variables. A total of 186 half-yearly reports were examined for the year 1995–1996. The degree of compliance was measured using a compliance index. Multiple regression and logistic methods were used. Four contingent variables namely, country of origin, industry, size and debt leverage upon compliance were tested. The study found that there was a significant country-effect upon compliance practices adopted and that Singaporean companies' compliance was significantly higher than their Australian counterparts.

Adoption or compliance is considered as an important function in the setting of accounting standards (Masel, 1983). This is so because standard setting becomes a futile exercise if there is an absence of compliance with accounting standards promulgated (Walker, 1987).

The purpose of this paper is to report on a study of those who were the early adopters of IAS 34 in Bahrain, and what are the firm characteristics and views on interim reporting. The study results provide some feedback to IASC on how firms viewed IAS 34. It also extends the literature on firm accounting policy choices. Companies in Bahrain have reported that their annual reports are prepared based on IASC's standards (Al-Bastaki, 1996; Joshi & Al-Bastaki, 1999; Joshi & Sayel, 2000). Thus, public firms in Bahrain had the opportunity to adopt IAS 34 early. Therefore, the main objectives of this study are:

(1) To report on the extent of adoption of IAS 34 by companies in Bahrain.
(2) To provide survey data on the type of interim financial reports prepared.
(3) To provide survey data on questions concerning the suitability and relevance of interim reports in terms of cost and benefits to firms.
(4) To model the factors affecting the early adoption of IAS 34.

Since Bahrain does not have its own local accounting standards and companies have been adopting IASs for a long time (since 1993), the findings from this study will provide some feedback to other countries in the Middle Eastern region, for example, Oman, Kuwait, Qatar, United Arab Emirates, Jordan because recently these countries have also adopted IASs. Therefore, Bahrain is important in the Middle East as a model for IASs adopter.

HYPOTHESES

Agency, signaling and legitimacy theory, and cost benefit analysis, all indicate that there may be a positive relationship between size and disclosure. Ball and Foster

(1982) and Firth (1979) found that if the production cost relating to certain accounting policy is high, then large firms are more likely to have resources necessary to adopt such policy. This hypothesis is consistent with many empirical disclosure studies, (see, e.g. Ashbaug et al., 1999; Botosan, 1997; Dumontier & Raffournier, 1998; Lang & Lundholm, 1993; Maria & Ana, 2000; Marston & Leow, 1998) which have found, in most cases, that size is a significant explanatory variable. The size of a company can be measured in a number of different ways, e.g. total assets, total sales turnover, total employees and total stockholders' equity. In current study, size variable was considered, namely log of total stockholders' equity. Thus, prior accounting research (e.g. Ahmed & Nicholls, 1994; Wallace & Naser, 1995) found a positive relation between company size and annual report disclosure requirements. The findings about size in prior studies provide a basis for the first null hypothesis.

H1. There is no significant relationship between company size and the early adoption of IAS 34 by companies in Bahrain.

Singhvi and Desai (1971) argued that higher earnings would stimulate managers to disclose more information in order to ensure investors of the firms' profitability and boost management's compensation. This view was supported through empirical studies by Singhvi and Desai (1971) themselves as well as by other researchers (e.g. Cerf, 1961; Malone et al., 1993). El-Gazzar et al. (1999) found that profitability (return on equity) is a determining factor for world firms to use IAS. Bowman and Haire (1975) confirmed a positive relationship, while other studies have produced different opinions, for example, confusing (Belkaoui & Karpik, 1989) and no relationships between profitability and financial disclosure (Cowan et al., 1987). However, the study by Hassan et al. (1999) indicated that higher profitable companies are more likely to disclose financial information on the Internet. On the other hand, in the study of Ashbaug et al. (1999), profitability (ROA) was not found to be a significant variable. Based on the above evidence, the second hypothesis is:

H2. There is no significant relationship between profitability and the early adoption of IAS 34 by companies in Bahrain.

In an earlier study on the voluntary utilization of IASC standards in Bahrain, due to the availability of limited data, Al-Bastaki (1996) measured foreign operations using an indicator variable to identify whether or not a company had a foreign branch, office or subsidiary. However, this variable was not an indicator variable in explaining the adoption of IASs in Bahrain. Murphy (1999) examined firm specific characteristics of Swiss companies that have voluntarily elected to prepare financial reports using IASC's standards. He used two variables to

measure foreign activity. One was percentage of foreign to total sales, and the second was foreign stock exchange listings. The step-wise discriminant analysis retained foreign activity variable. El-Gazzar et al. (1999) used a regression model, and found that percentage of foreign sales was a determinant variable in IAS adoption.

Since, companies in Bahrain do not disclose foreign sales, whether a firm has foreign operations will be tested in this study as an indicator variable in the early adoption of IAS 34. A value of one is assigned if the company has foreign operations and a value of zero is assigned if the company does not. Therefore, the following hypothesis is developed:

H3. Early adoption of IAS 34 is positively related with companies' foreign operations.

Financial leverage is a variable that may offer some explanation for early adoption. A number of researchers (e.g. Jenson & Meckling, 1976; Watts & Zimmerman, 1986) suggest that potential wealth transfers from bondholders to shareholders are more likely to take place in highly leverage companies. Bahrain has a well-established banking system. Agency theory predicts that restrictive covenants may be incorporated into debt contracts in order to protect the bondholders interest (Schipper, 1981). Radebaugh and Gray (1997) argue that the development of and relationship of banking and corporations within some companies provide the lender with more direct access to information.

Empirically, the debt leverage hypothesis has been studied to assess whether it bears any relationship with annual report disclosure and compliance levels. Results have been of mixed type (e.g. Robbins & Austin, 1986; Wallace & Naser, 1995). Therefore, to examine whether debt ratio (total debt to total assets) has any bearing in the adoption of IAS 34, the fourth hypothesis is:

H4. The debt ratio of Bahraini companies that adopt IAS 34 is equal to the debt ratio of Bahraini companies that do not use IAS 34.

METHODOLOGY

The target group selected for this study was all the 41 companies listed on the Bahrain Stock Exchange (BSE). The survey was based on a four-page questionnaire distributed personally to the heads of accounting departments. The questionnaire was pre-tested with the two companies and one audit firm. The questionnaire was revised in the light of their feedback received. Thirty-one questionnaires were returned resulting in a response rate of 75.6%. The questionnaire

covered general information on the company, adoption of IAS 34, and costs-benefits from the adoption of IAS 34.

It is to be noted that accountants and accounting managers completed 61.5% of questionnaires, and finance managers and finance controllers completed the other 39.5%. A majority of the respondents possessed professional qualifications, such as Chartered Accountancy (43.8%), Certified Public Accountancy (28.2%), and Certified Management Accountancy (12.5%), while 15.% were either graduates or post-graduates in accounting. The average age of the respondents was 39.2 years, with a maximum of 61 years and minimum of 26.5 years. Furthermore, a good number of them were very experienced. The average experience of the respondents was 8.4 years, with a maximum of 29 years and minimum of 4.1 years at the time of conducting this survey. They have been in their present position in the company for an average of 6.11 years. The purpose of the above analysis was to ensure that accounting professionals who have experience of and interest in accounting practices and development in Bahrain completed the survey. Seventeen (54.8%) of companies have foreign operations and 14 (45.2%) do not have any foreign operations.

RESULTS AND DISCUSSION

The analysis of the survey data consists of two parts. One part gives a descriptive analysis of the survey and the other part provides a discriminant model of the characteristics of the firms adopting IAS 34.

Descriptive Analysis

The analysis of results of this study consists of two parts. One part gives a descriptive analysis of the survey and the other part provides the characteristics of the firms adopting IAS 34.

Table 1 provides industry classification of the sample companies and their financial data. It is clear that out of 31 respondents, 11 (46.3%) were from banks and investment, 10 (24.4%) from the industrial sector, the rest were from the services as well as the insurance sectors. Since Bahrain is viewed as an international finance centre, it is not surprising that banks comprise the largest group of respondents in this study. In view of the fact that banks deal extensively with foreign exchange transactions either directly or indirectly, this type of study should be of great relevance to them.

Table 1 shows industry distribution of the mean and standard deviation for total shareholders' equity, market capitalization, ROA and debt ratio. Services sector

Table 1. Types of Companies and Selected Financial Data.

Industry	Companies		Total Shareholders' Equity[a]		ROA%		Debt Ratio		Market Capitalization[a]	
	No.	%	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Banks and investment	11	35.5	12,197	18,444	3.04	1.78	0.77	0.14	157,639	169,913
Insurance	7	22.6	5,812	4,015	3.79	1.77	0.41	0.27	10,813	5,893
Industrial	4	12.9	9,512	10,052	9.01	8.12	0.27	0.34	11,029	15,699
Services	6	19.4	31,236	60,890	13.47	5.65	0.45	0.25	90,545	179,629
Hotel and tourism	3	9.7	21,640	6,194	2.81	0.29	0.04	0.04	12,957	1,556
Total	31	100.0	16,080	19,919	6.42	3.52	0.39	0.21	56,597	74,538

[a]Figures are in thousands of Bahraini Dinar (1 BD = 2.65 U.S. dollars).

Table 2. Computerization of Accounting System.

Type of Accounting System	Number	%
Fully computerised	19	61.3
Semi-computerised	11	35.5
Manual system	1	3.2
Total	31	100.0

had the highest mean value for shareholders' equity and insurance sector firms had the lowest. Again services sector had the highest ROA and hotel and tourism had the lowest ROA. Banks and investment companies had the highest debt to total asset ratio and hotel and tourism had the lowest ratio. The market capitalization value was the highest for banks and investment companies and again the lowest for hotel and tourism sector. In many cases, the standard deviation is more than the related mean value that indicates the wide variations in the companies' size.

The companies were asked whether their accounting systems were computerized, either fully or partly.

Table 2 shows that 19 (61.3%) companies operated a fully computerized accounting system, while 11 (35.5%) companies had partially computerized their accounting systems. Only one company stated that it was operating a manual accounting system. Computerization of an accounting system is an important element in the adoption of accounting standards like interim reporting because the incremental cost of processing data and preparation of financial statements is much lower than a manual system.

Table 3 shows that 87.1% of the listed companies prepare Interim Reports. Twenty (65.5%) companies reported that they adopted IAS 34 in preparing their 1999 interim reports. The remaining seven companies that prepared Interim Reports did so according to other standards (e.g. according to previous IAS).

The respondents were asked why do they prepare Interim Reports? The responses of sampled companies are provided in Table 4.

Table 3. Preparation of Interim Reports and Compliance with IAS 34 ($n = 31$).

	Yes		No		Total	
	No.	%	No.	%	No.	%
Prepare interim reports	27	87.1	4	19.2	31	100.0
Comply with IAS 34	20	64.5	11	35.5	31	100.0

Table 4. Reasons for Preparing Interim Reports.

Reasons	No.	%
Management control	14	36.8
Requirement of stock exchange	10	26.3
Board of directors	5	13.2
Public(external users)	9	23.7
Total	38[a]	100.0

[a]Many companies gave multiple responses.

As we can see from Table 4, a good number of companies stated that they prepare Interim Reports as a method of controlling their organisations (for management control and Board of Directors). Companies also prepare Interim Reports for meeting the stock exchange requirements and for external users.

Type of Financial Reports Prepared

Table 5 shows the type of financial reports prepared by adopters of IAS 34.

We can observe from Table 5 that all adopters of IAS 34 prepared income statements and balance sheets. Since, 18 (90%) companies also prepared cash flow statements, we observe that two firms did not comply with IAS 34's statement of cash flow requirement. Forty five percent of companies also prepared other related statements. Furthermore, all respondents stated that their interim report was published in the local and international newspapers.

The survey also investigated whether respondents view interim reports as being relevant to their company. Of the 27 firms that prepared interim reports, 21 (77%) strongly agreed that they were relevant. Some of the reasons given by them about the relevance of interim reports are:

- These reports reflect company's latest financial position.
- Help management in decision-making.

Table 5. Financial Reports Prepared by IAS 34 Adopters.

Type of Financial Reports Prepared	Yes		No	
	No.	%	No.	%
Balance sheet	20	100.0	0	0.0
Income statement	20	100.0	0	0.0
Cash flow statement	18	90.0	2	10.0
Others	9	45.0	11	55.0

Table 6. Interim Reports and Share Prices.

Effect on Share Price	No.	%
No effect	2	7.4
Low effect	7	25.9
Neutral	6	22.2
High effect	12	44.6
Total	27	100.0

- Increases company's market share.
- To know the standing or status of the business and the results thereof and analysis against budgets.
- It is a mean of measurement of company's performance and results.
- Help for site analysis.
- Update financial information for budgeting and forecasting purposes.

Furthermore, to support the above analysis, the respondents were also asked their views on whether preparation and publication of interim reports have any effect on their company's share prices.

Table 6 shows mixed reactions by the respondents on the effect of interim reports on their company's share prices. However, about 44.6% of respondents believed that preparation and publication of interim reports do have high effects on share prices, while 9 (33.3%) strongly believed that the publication of interim reports has low effects on share prices. One reason for such a mixed opinion may be that the Bahrain Stock Exchange (BSE) is still a relatively underdeveloped capital market and some firms have not yet experienced the effects of the release of interim information on their share prices.

Table 7 shows the perceptions of the respondents companies whether compliance with IAS 34 is costly or not. Again, it seems that the respondents are divided on this issue. On the one hand, 11 (44%) of respondents disagreed that compliance

Table 7. Implementation Cost.

Complying with IAS 34 is Costly?	No.	%
Strongly agree	2	8.0
Agree	8	32.0
Neutral	4	16.0
Disagree	10	40.0
Strongly disagree	1	4.0
Total	25	100.0

with IAS 34 is costly, while 10 (40%) agreed. Benefits can be goodwill gained by being one of the earlier adopters of IAS 34 and timely release of information to the firm's shareholders.

Discriminant Analysis

Statistical analysis was performed using Multiple Discriminant Analysis techniques to determine which variables discriminate the most among the companies in adopting IAS 34. Four variables namely, log of total shareholders' equity, return on assets, foreign operations, and log of debt ratio (total debt/total assets) were included in the Discriminant analysis. Since the dependent variable (early adoption of IAS 34) was in "yes" and "no" form, Discriminant analysis was used in this study. It means that the dependent variable (IAS 34) in the Discriminant analysis will take the value of one or zero (whether the company adopted or not with IASC's IAS 34, respectively). Since Big-5 audit firms perform 87% of the annual audits of these companies, this variable was not included in the study. The four hypotheses explained previously are:

H1. There is no significant association between company size and the early adoption of IAS 34 by companies in Bahrain.

H2. There is no significant association between profitability and the early adoption of IAS 34.

H3. Early adoption of IAS 34 is positively associated with companies' foreign operations.

H4. The debt ratio of Bahraini companies that adopt IAS 34 is equal to the debt ratio of Bahraini companies that do not use IAS 34.

Results were computed using STATISTICA software package. Results are presented in Tables 8, 9, 10 and 11, respectively.

Table 8 shows that the correlations among the independent variables are low, except for foreign operations. A moderate level of correlation was observed between foreign operations and size. Some researchers (e.g. Emory, 1982; Kaplan, 1982) consider that when correlation is 0.80 and above, there may be a multicollinearity problem. Consequently, the correlations presented in Table 8 do not pose a severe multicollinearity problem, which would jeopardize the interpretation of results reported above.

Table 9 shows company size (log of total stockholders' equity), profitability (ROA), and leverage (debt ratio) to be significant ($p < 0.05$) variables in the

Table 8. Correlation Matrix.

Independent Variables	FO	Size	Leverage	Profitability
FO (Foreign operations)	1.00	0.44	0.12	0.22
Size (Log of total stockholders' equity)	0.44	1.00	0.25	−0.08
Leverage (Log of debt ratio)	0.12	0.25	1.00	−0.30
Profitability (ROA)	0.22	−0.08	−0.30	1.00

Table 9. Discriminant Function Analysis.

Independent Variable	Wilk's Lambda	p-Level
Size (Log of total stockholders' equity)	0.783	0.010
Profitability (ROA)	0.683	0.021
Leverage (Debt ratio)	−0.819	0.047

Wilk's Lambda = 0.589; $F = 3(27)6.273$; $p < 0.01$. Canonical $R = 0.641$; Chi squared = 14.540; df 3(27); $p < 0.01$.

Table 10. Standardized Canonical Coefficient.

Variable	Root 1
Size (Log of total stockholders' equity)	−0.740
Leverage (debt ratio)	−0.727
Profitability (ROA)	−0.645
Eigen value	0.697

discriminant model of early adoption IAS 34 on interim reporting by companies in Bahrain. Thus, the null hypotheses relating to companies' size (Ho1), profitability (Ho2), and debt ratio (leverage) (Ho4) are rejected. Therefore, firm size, profitability and debt ratio are determinants for IAS 34 compliance in our model. Foreign operations was not a significant variable for an early adoption of IAS 34 for Bahraini companies, which is contrary to prior research cited.

Table 11. Classification Matrix.

Group	Correctly Classified	Group I ($p = 0.354$)	Group II ($p = 0.645$)
Group I	72.7%	8	3
Group II	85.0%	3	17
Total	80.64%	11	20

The overall discriminant function is found to be significant (Chi squared = 14.540; df = 3(27); $p < 0.01$). The Canonical $R = 0.641$ is also found to be robust. The values of standardized canonical coefficients for the discriminating variables are presented in Table 10. Results indicate that log of total shareholders' equity, leverage (debt ratio), and profitability (ROA) are variables, in the order of importance, which discriminate the most for companies in their early adopting of IAS 34. The eigen value is 0.698. Table 11 shows the classification matrix. Results indicate that the discriminating model correctly classifies the cases up to 80.64%, indicating thereby a reliable predictive model.

SUMMARY AND CONCLUSIONS

This study was carried out to determine the extent of adoption of IAS 34 by companies in Bahrain. The study found that 65.5% of the sample companies had adopted IAS 34 in the first year of the implementation date. A discriminant model ($p < 0.01$) was also developed which showed a high predictive ability in the classification of cases.

All the early adopters prepared income statements, balance sheets and 90% of them prepared cash flow statements, indicating a high degree of compliance to IAS 34. All firms published their interim reports in newspapers. Companies prepared interim reports for a variety of purposes mainly for management control and listing requirements. The majority of respondents viewed interim reports to be highly relevant for their company. Moreover, 44.6% viewed interim reports affecting their company's share prices. The respondents were divided on the issue of whether compliance to IAS 34 is costly or not.

The discriminant model of Bahrain shows that large size companies are more likely to be earlier adopters of IAS 34. Profitability and leverage are also important influencing factors for companies in deciding to adopt IAS 34. These findings confirm prior findings (e.g. Ashbaug et al., 1999; Marston & Leow, 1998). The foreign operations variable was not significant and is excluded from the model. This is perhaps due to the fact that none of the Bahraini companies are listed on foreign stock exchanges.

The findings of this study could apply to other countries in Middle eastern region because, in a forum in Dubai, the representatives of twenty-two Arab countries issued a recommendation in 1997 to support the use of IAS (Corporate Finance Study, 1997). Consequently, Oman, Qatar, Kuwait, Jordan, United Arab Emirates in Middle East have already started implementing IASs and more companies are implementing IASs. Therefore, the study results will provide some benchmarks for the listed companies in these countries.

LIMITATIONS

The study findings are limited by the population, which is one small country. There may be country effects. Since Bahrain is a small developing country, a model of IAS 34 adoption in a larger and more developed country might be different.

Another limitation is that the data is cross sectional. Non-response was not investigated, which suggests the question of whether there is non-response bias. The high response rate (75.6%) and anonymous responses influenced the authors' decision to forego non-response bias techniques.

DIRECTION FOR FUTURE RESEARCH

More research is needed in order to gain further understanding of how emerging markets in the developing countries use interim statement based information. Since this study covered only the first year of the adoption period for IAS 34, a longer time frame that includes the date that IAS 34 is required needs to be studied. Other research questions related to early adoption of IAS 34 are corporate governance, country effects, and the economic impact in the securities markets.

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ATTRIBUTES AND TECHNIQUES OF HIGHLY EFFECTIVE ACCOUNTING EDUCATORS: A MULTINATIONAL STUDY

David S. Kerr and L. Murphy Smith

ABSTRACT

Recently, many organizations and the general public have called for increased attention to, and improvements in, the effectiveness and quality of higher education. To this end, a multinational field study of the teaching techniques and attributes of master accounting educators was conducted, the findings of which are reported in this paper. Results of the study reveal that master accounting teachers in several nations employ interactive learning techniques extensively, exhibit genuine interest in and concern for students, and possess strong communication and organizational skills. Additional insight is provided into specific attributes of highly effective accounting educators, their lecturing and questioning techniques, techniques of enhancing student interest and participation, and syllabus and examination construction.

INTRODUCTION

An important step in improving accounting education is to identify and understand the characteristics of effective teaching. Prior research on teaching effectiveness

Advances in International Accounting
Advances in International Accounting, Volume 16, 123–138

ISSN: 0897-3660/doi:10.1016/S0897-3660(03)16007-2

in accounting has generally relied on students' opinions and attitudes regarding instructor characteristics and teaching techniques (e.g. Chen & Hoshower, 1998; Farrell, 2000; Rebele et al., 1991). In contrast, the focus of the current study is on master teachers themselves.

The purpose of this study is to address two important questions about master teachers in accounting: (1) What are the general attributes of highly effective accounting teachers?; and (2) What specific techniques and methods do highly effective accounting teachers employ? We surveyed accounting educators who had distinguished themselves as outstanding teachers at universities in several nations and asked them to share their methods and techniques for achieving teaching excellence. They were also asked to indicate the attributes and characteristics they believe distinguish them from "average" instructors. By reporting the attributes and specific instructional methods used by some of accounting's most effective educators, we hope to provide information that can be used by all accounting educators to enhance the quality of their teaching.

A widely held view of higher education is that its primary function is the facilitation of learning (Rogers, 1969). Given this aim of education, educators should continually evaluate their teaching style and strive to identify and implement the most effective teaching techniques to stimulate the learning process in their students. Master teachers can be described as those educators who are most effective at enhancing this learning process, which includes the ability: (1) "to create people who are capable of doing new things, creative, inventive, and discoverers; and (2) to form minds which can be critical, can verify, and not accept everything they are offered" (Ripple & Rockcastle, 1964). However, there remains much to be learned about the attributes and methods of effective teaching and master teachers. Furthermore, there is little consensus concerning standards of education quality.

Many entities are now calling for increased attention to, and improvements in, the quality of university accounting education. These entities include the major accounting firms, the Accounting Education Change Commission (AECC), legislative bodies, and the general public (cf., AAA, 1996, 2002; AECC, 1993; Farrell, 2000; Rebele et al., 1991; Stevens & Stevens, 1992; Thomas, 1993). Comprehensive reviews of prior research on accounting education and teaching effectiveness are provided by Rebele et al. (1998a, b) and Apostolou et al. (2001). The current study extends this line of research by examining the attributes of, and teaching methods used by, outstanding accounting educators.

METHODOLOGY

Sixty-eight universities with five or more accounting faculty members in Australia, Canada, England, Israel, New Zealand, and Scotland were identified in

Hasselback's *Accounting Faculty Directory*. A cover letter and two copies of the survey instrument were mailed to each accounting department chairperson at these schools. In the cover letter, chairpersons were asked to participate in the study by distributing questionnaires to their two most effective accounting instructors as measured by course evaluations, personal observations, and/or feedback from students. Because we wanted to survey the most effective accounting educators at each university, no restrictions were placed on chairpersons' selections regarding the course (i.e. principles, managerial accounting, tax, etc.) or level of students (i.e. undergraduate, masters, doctoral) taught most often by participants. Only universities with five or more accounting faculty were included in the study to ensure that department chairpersons had several faculty members from which to choose when distributing the questionnaires. As an incentive to participate in the study, each chairperson was promised a summary of the study's results if a completed questionnaire was received from his or her university.

A cover letter accompanied each questionnaire explaining the purpose of the study and indicating that, on the basis of his/her outstanding teaching record, the faculty member had been chosen by his or her department chairperson to participate in the study. Participants were told they need not identify themselves, that a summary of the results would be mailed to their department head in appreciation for their participation, and were given a response deadline.

The questionnaire itself consisted of seven parts. Part one was designed to address the question, "What general attributes of master teachers account for their distinction?" In part one, respondents were asked to evaluate the degree to which each of several attributes differentiates him or her from an "average" instructor and to identify additional distinguishing attributes. Parts two through five were designed to address the second question of interest, "What specific techniques and methods do master teachers employ to achieve superior teaching?" Parts two through five focused on specific teaching activities, including lecturing strategies and techniques, methods of enhancing student involvement and participation, use of questions in class, syllabus construction and content, and policies concerning examinations, assignments, and grading. Part six was a broad question inviting respondents to provide other information concerning their methods and approaches for effective teaching. The questionnaire's final section dealt with demographic information about the respondent. For each part, participants were asked to base their responses on the course they teach most frequently.

RESULTS

Each of the 68 department heads contacted was asked to distribute two surveys. Twenty-nine completed questionnaires were received from accounting educators.

Table 1. Department Size.

Department Size	Institutions			
	Respondents		Non-respondents	
	No.	%	No.	%
5–9	4	19.0	14	29.8
10–14	7	33.3	13	27.7
15–19	7	33.3	9	19.1
20 and over	3	14.3	11	23.4
Total	21	100.0	47	100.0

$\chi^2 = 2.62$; df $= 3$; $p = 0.45$.

Two surveys were received from each of eight institutions, while a single survey was received from each of 13 institutions. Thus, accounting educators at 21 different institutions responded to the survey, reflecting an institutional response rate over 30% (21 out of 68).

The possible presence of non-response bias was examined by comparing respondent and non-respondent institutions on the basis of accounting faculty size. Results of a chi-square independence of classification test are presented in Table 1. Respondent and non-respondent institutions were very similar in terms of their numbers of accounting faculty. No significant size difference was found between respondent and non-respondent institutions ($p = 0.45$).

To obtain additional information about the accounting educators participating in this study, the survey included several demographic questions relating to the subject taught most frequently, class size taught most often, years of college teaching experience, and gender. Seventy-six percent of the respondents indicated they teach undergraduate courses most frequently, 24% graduate courses. Seven percent reported they teach classes of 25 students or less most often, 58% reported classes between 26 and 50 students, 14% reported classes between 51 and 100 students, and 21% respondents reported teaching classes over 100 students most frequently. Respondents had an average of 15 years of college teaching experience. Thirteen percent of the respondents were women; 87% were men. Demographic data are summarized in Table 2.

Effective Teaching: General Attributes

To address the first question of interest, part one of the survey was designed to identify the general attributes that distinguish effective teachers and the relative

Table 2. Demographics of Respondents.

	Mean	Std. Dev.	Range
Years of college teaching experience	15	6.6	5–25
		No.	%
Academic rank			
Instructor/lecturer (non-tenure track)		2	7
Assistant professor		7	24
Associate professor		7	24
Full professor		8	28
Other		5	17
Gender			
Female		4	14
Male		25	86
Course taught most frequently			
Undergraduate		22	76
Graduate		7	24
Class size taught most frequently			
25 or less		2	7
26–50		17	58
51–100		4	14
Over 100		6	21
Country location			
Australia		6	21
Canada		17	59
Israel		1	3
New Zealand		1	3
United Kingdom		4	14

importance of each attribute. Specifically, each respondent was asked to indicate the degree to which each of several attributes differentiates him or her from an "average" instructor, and to identify additional distinguishing attributes. Each attribute's degree of differentiation was rated on a five-point Likert scale anchored with "none" and "high." The attributes presented to respondents in part one were based on prior research associated with master teaching techniques (e.g. Andrews, 1985; Brightman, 1987; Cahn, 1982; Conant et al., 1988; Goldsmid et al., 1977; Grunenwald & Ackerman, 1986; Hise et al., 1989; Kelley et al., 1991). General attributes of highly effective accounting teachers are presented in Table 3.

Respondents indicated that the three most distinguishing attributes of highly effective accounting teachers are:

Table 3. Attributes of Highly Effective Accounting Teachers.

Attribute	Rank	Degree of Differentiation Ratings[a]					
		Mean Rating (Std. Dev.)	Responding (%)				
			1	2	3	4	5
Preparation and organization	1	4.10 (1.18)	6.9	3.4	10.3	31.0	48.3
Communication style	2	4.07 (1.13)	6.9	0.0	17.2	31.0	44.8
Show genuine interest in students as persons	3	3.90 (1.01)	3.4	3.4	24.1	37.9	31.0
Concern for student mastery of course materials	4	3.72 (1.16)	6.9	6.9	20.7	37.9	27.6
Challenging yet fair criteria for evaluating students	5	3.55 (1.15)	6.9	10.3	24.1	37.9	20.7
Real-world orientation	5	3.55 (1.43)	13.8	10.3	17.2	24.1	34.5
Ability to get students to participate in class discussions and activities	7	3.45 (1.15)	6.9	13.8	24.1	37.9	17.2
Scope and depth of knowledge of the material	8	3.34 (1.47)	13.8	10.3	17.2	24.1	34.5
Ability to stimulate students to work beyond minimum requirements	9	3.31 (1.20)	10.3	13.8	24.1	37.9	13.8
Use of applied projects	10	3.14 (1.19)	13.8	6.9	44.8	20.7	13.8

[a] Degree of differentiation ratings are based on five-point Likert scale anchored with 1 = none and 5 = high.

(1) Degree of preparation and organization;
(2) Communication style;
(3) Show genuine interest in students as persons.

Regarding a teacher's communication style, an important element of effective teaching is the ability to communicate clearly and, when necessary, in simple basic terms that facilitate students' understanding and allow them to relate to the material. As stated by Cahn (1982, p. 39), "Good teachers speak so virtually all their listeners can follow." An awareness of both the complexity of the material and of their students' understanding level is critical if teachers are to be effective learning facilitators.

In part one, respondents were invited to indicate additional distinguishing attributes and make other comments. Respondents emphasized the importance of communicating in an understandable way to students, and blending theory and practice. Also emphasized were the importance of being available to students outside of class time, providing prompt feedback to students, and care and planning with respect to the achievement of course objectives.

The remaining sections of the survey were designed to address the second question of interest, "What specific techniques and methods do master teachers employ to achieve superior teaching?" To answer this question, respondents were asked to share their insight into each of the following five specific teaching activities: (1) lecturing; (2) methods of enhancing student participation; (3) use of questions; (4) syllabus construction; and (5) examinations, assignments, and grading. In addition, respondents were invited to provide comments concerning other methods and approaches for effective teaching that were not specifically covered in the survey.

Lecturing

To identify the lecturing techniques and communication styles of master teachers in accounting and the perceived relative effectiveness of each technique, participants were asked to rate the effectiveness of various lecturing techniques and to indicate whether they use each technique. The list of lecturing techniques presented was based on prior research on lecturing in other disciplines (Conant et al., 1988; Smart et al., 1988). Effectiveness was rated in terms of student learning on a five-point Likert scale anchored with "not effective" and "highly effective." Results are presented in Table 4.

Of the techniques presented in the "lecturing" section of the questionnaire, respondents believe that the use of an enthusiastic and entertaining lecture style is the most effective technique for enhancing student learning. Effective instructors are able to convey a sense of excitement about the course and the material in a way that arouses students' interest and motivates learning. Research in education provides evidence of a direct relationship between the instructor's enthusiasm level and student learning (Coats & Smidchens, 1966; Mastin, 1963; Mohan & Hull, 1975).

Other techniques of enhancing lectures that are considered by respondents to be highly effective include the use of examples and discussion of their implications, and an interactive lecture style. The complexity of accounting can often cause confusion and frustration in students. Effective teachers anticipate this problem and can, to a large extent, overcome it by using clear, relevant examples to explain and illustrate difficult concepts.

Respondents were invited to indicate other lecturing techniques they use and make other comments. One respondent suggested instructors learn their students' names early in the semester, even in large classes, by means of photographs. Other respondents suggested the day-to-day use of preprinted case packages, and taking an applications approach in which students apply readings to problem situations.

Table 4. Lecturing Techniques.

Technique	Percentage Who Use	Rank	Effectiveness Ratings[a]					
			Mean Rating (Std. Dev.)	Responding (%)				
				1	2	3	4	5
Enthusiastic and entertaining lecture style	93	1	4.25 (1.00)	0.0	10.7	7.1	28.6	53.6
Use of examples and discussion of implications	93	2	4.21 (0.90)	0.0	3.4	20.7	27.6	48.3
Interactive style	89	3	3.89 (0.96)	0.0	7.1	28.6	32.1	32.1
Adopting a teamwork philosophy with your students	71	4	3.57 (1.17)	7.1	7.1	32.1	28.6	25.0
Use of supplemental aids	68	5	3.37 (1.21)	7.4	14.8	33.3	22.2	22.2
Professional tone while lecturing	48	5	2.78 (1.12)	7.4	40.7	29.6	11.1	11.1
Use of guest speakers	28	7	2.23 (0.91)	26.9	26.9	42.3	3.8	0.0

[a]Effectiveness ratings are based on five-point Likert scale anchored with 1 = not effective and 5 = highly effective.

Another respondent discussed the importance of maintaining an element of fun in the classroom.

Student Participation

Master teachers recognize that student involvement and participation in classroom discussions often facilitate the learning process by enabling students to become an active part of the process (Weaver, 1978). These interactions often help students understand the material by putting it into a context to which they can relate. To examine the manner in which master teachers in accounting motivate their students to participate, we asked respondents to indicate the techniques they use to enhance student participation and facilitate class discussion. Five specific methods for enhancing participation were included in the question, with space provided for respondents to indicate other methods used and to make other comments. The response distribution is shown in Table 5.

Results indicate that the method most frequently used by respondents to enhance student participation is the use of impersonal questions in which the instructor allows students to voluntarily answer questions. Eighty-six percent

Table 5. Techniques Used to Enhance Participation.

Technique	Percentage Who Use
Impersonal use of questions	86
Personalized use of questions	62
Student presentation	55
Discussion of current events	52

of the respondents indicated they use this technique. The methods used second and third most frequently by respondents were formally requiring students to participate by basing a portion of their grades on participation in class discussions (66% of respondents) and calling on individual students to respond in class (62% of respondents), respectively. Methods used less frequently include the use of student and team presentations, discussion of current events, debates, and providing continuous opportunity for students to raise their questions.

Use of Questions

Highly effective teachers use questions to change the focus of the class from teacher-centered to student-centered, motivating and stimulating students to learn. By questioning students during class time, teachers can also assess their students' level of understanding of the material. Davis and Alexander describe proper questioning techniques as follows (1977, p. 7): "Questions should be selected, formulated, and incorporated in an instructional plan to achieve a specific instructional purpose. You should respond to students' questions so as to create a climate in which they feel free to explore a topic, evaluate their ideas, evaluate their comprehension, and even make errors." In the current study, respondents were asked to indicate how they tend to use questions in class. Five response categories were provided in the question; responses are summarized in Table 6.

Table 6. Use of Questions in Class.

Method	Percentage Who Use
Use questions to assess students' understanding of the material	72
Use questions to encourage students to pay attention and participate	66
Often begin class by asking questions about the material to be discussed	38
Often begin class by asking questions relevant to the prior lecture	31
Rarely ask students questions in class	4

The majority of respondents use questions to assess students' understanding of the material (72%) and to encourage students to pay attention and participate (66%). Approximately one-third of the respondents indicated they often begin class by asking students questions about the material to be discussed in that day's lecture, and questions relevant to the material covered in the prior lecture. Respondents' additional comments revealed they also use questions to encourage students to think critically, and to consider related issues beyond those contained in a particular problem or case. One respondent who indicated he/she uses questions extensively, both personal and impersonal, cautioned that instructors should never use questions in a manner that makes a student uncomfortable or puts a student on the spot.

Syllabus Construction and Content

Student evaluations frequently indicate students prefer a high degree of structure in their courses. A course's perceived degree of structure can be increased by organizing the course in advance, making the framework clear to students, and scheduling assignments and projects within that framework (Weaver, 1978). We asked participants to indicate whether their syllabus for the course they teach most frequently is best described as comprehensive and detailed, or short and simple. Participants were also asked to indicate the topics covered in their syllabus, and the length of their syllabus. Respondents' answers provide insight into the degree of structure in their courses.

Sixty-two percent of the respondents described their syllabi as comprehensive and detailed, while 38% said they were short and simple. The average syllabus length was 6.2 pages. All respondents reported their syllabi include a description of the course and its objectives, while over 90% also discuss the grading policies for the course. Eighty-nine percent of the respondents include a homework assignment schedule. Exam dates and guidelines for term projects are also included frequently. Other topics covered by some respondents are student responsibilities, a day-by-day assignment schedule and objectives for each day, examples of "good" term papers/projects in prior years, guidelines for succeeding in the course, and an explanation of the teaching methods used in the course.

Smith (1993) recommends that traditional accounting course syllabi be expanded to include daily teaching plans that highlight general course objectives. In light of Brigham Young University's positive experiences with innovative changes in its accounting curriculum, Smith also recommends that a schedule of assignments and activities be included so students can see how the course is organized and how individual assignments help meet course objectives.

Examinations, Assignments, and Grading

To provide insight into respondents' policies regarding examinations, assignments, and grading, we asked seven questions requiring respondents to evaluate the construction and format of their examinations, course assignments, and grading practices. The first question provides insight into the types of exam questions typically used by master teachers in accounting. Specifically, participants were asked to indicate the approximate percentage of the total points possible on exams from each of several types of questions. They were asked to base their responses on a typical exam in the course they teach most frequently. Responses are summarized in Table 7.

On average, over half of the total points possible on typical exams given by master accounting teachers is comprised of problems, including both short-answer and long comprehensive problems, as well as problems involving preparation of journal entries. Essay questions are the next most common, comprising 38% of the total points possible. Multiple-choice questions are used sparingly, while true/false questions and matching-type questions are rarely used.

The next question asked respondents to indicate what percentage of a typical exam consists of questions from various sources. On average, slightly over half of their exam questions are original questions written by the instructor, and nearly one-fourth are adapted from test banks or from professional examinations. Six percent of their questions are written by other professors at the respondent's institution, and 18% are obtained from other sources. The most common other source is textbooks.

The next three questions asked respondents to evaluate the timing and extent of feedback provided to students after a major examination, and to indicate whether students are allowed to keep their exams after they have been graded. Prompt feedback appears to be an important issue to master teachers, as the majority of the respondents indicated they either provide feedback to students in the next class period or within two class periods after an exam. Only about one out of four

Table 7. Examination Content.

Type	Mean Percentage of Total Possible Points
Problems (short-answer, long comprehensive, and journal entries)	53
Essay questions	38
Multiple choice questions	6
Matching-type questions	1
True/False questions	1
Other	1

respondents reported they wait longer than two class periods after an exam to provide feedback. The extent of feedback generally consists of informing students of their scores and reviewing the exam in class. Over three-fourths of the respondents allow students to keep their exams after they have been graded. Participants were invited to make comments and discuss reasons why they do or do not allow students to keep their exams. The most common reasons expressed for allowing students to keep their exams were: (1) the exams serve as a learning tool; and (2) the exams are useful to students when reviewing for a comprehensive final. As one respondent put it, "I believe that exams must be given back with the students' answers and my comments, in conjunction with the posted marking guide, because students can learn a lot from such information." In contrast, one respondent's explanation for *not* allowing students to keep their examinations was, "I believe [allowing students to keep exams] encourages studying to the exam, rather than comprehending the material."

Respondents were also asked to evaluate their grading policies and indicate what percentage of students' course grades are based on each of several areas. On average, examinations comprise 66% of students' course grades, followed by group projects comprising 7% of grades. Student participation comprised 6%, while homework assignments from the text and/or term papers comprise 10% of the course grade. Least important to grades were student presentations (3%), non-computerized practice sets/cases (3%), quizzes (2%), computer-based assignments (2%), and "other" (1%).

The final question in this section provides insight into respondents' grading practices. Respondents were asked to indicate, on average, what percentage of their students receive As Bs, Cs, Ds or Fs in the course they teach most frequently. Responses reveal that accounting's master teachers are not "easy" teachers when it comes to assigning grades. On average, 21% of their students receive an A, 42% receive Bs, 29% receive Cs, and 8% receive Ds or Fs.

Respondents' Additional Comments Concerning Effective Teaching

The final question in the survey invited participants to comment on other methods and approaches for effective teaching that had not been covered in the survey. Eight respondents provided additional comments to this question. Their comments generally were quite fervent and lengthy and provided additional illumination and clarification of their teaching methods and philosophy.

Three of the respondents' comments centered on their interactive approach to teaching. One respondent described his/her teaching style as follows: "My approach is what I would call 'unstructured professionalism.' I make sure from the

outset that every student understands the objectives of the course and how I will be evaluating them. To this end I take great pains to put together a comprehensive course outline and package of notes. Within these guidelines, however, there is a lot of looseness. I try to make the course fun, I learn everyone's name, and I draw them into discussions – these often lead us into unknown territory. At all times I try to make sure that I'm not putting anyone on the spot and to create a sense that I want to hear what they have to say."

Another respondent indicated he/she does very little, if any, formal lecturing. Material is covered in class by means of student discussions of pre-assigned problems and cases, with an emphasis on applications. A third respondent provided useful comments on improving student interest in the material: "Place material in a context students are familiar with in order to demonstrate what is covered in the chapters/readings . . . students learn the material much better if [it] is taught within a context familiar to them. This tremendously increases the students' interest in, and motivation to, learning."

Comparisons of Teaching Techniques by Country and Course

To investigate whether the teaching techniques of participating accounting educators vary across countries, participants' responses to each section of the survey were grouped according to the location, by country, of their institutions. Scheffe's test for post hoc multiple pair-wise comparisons was used to examine whether respondents' teaching techniques differed significantly between countries. No meaningful differences were found across countries.

Analyses were also performed to examine whether respondents' teaching techniques differ according to the course taught most frequently. Participants' responses were grouped by graduate vs. undergraduate courses, and one-way analyses of variance were performed to test for significant differences between responses. Several differences were observed. First, graduate-level instructors believe that an interactive lecturing style involving discussions between students and the instructor is significantly more effective for enhancing student learning than do undergraduate instructors ($p = 0.001$). To the extent that the effectiveness of interactive discussions is positively correlated with student level and knowledge, it would seem reasonable that graduate-level instructors find interactive discussions to be more effective than undergraduate instructors. In addition, a greater percentage of graduate-level instructors reported they use a professional tone while lecturing than undergraduate instructors (83% vs. 40%; $p = 0.056$). There were also some differences in the grading practices between undergraduate- and graduate-level courses, with graduate courses assigning a greater percentage

of B's (59% vs. 37%; $p < 0.001$), and smaller percentages of Cs, Ds, and Fs (19% vs. 42%; $p < 0.05$). There was virtually no difference between the percentage of A's given (21%).

SUMMARY, LIMITATIONS, AND CONCLUSIONS

The purpose of this study was to gather and report information regarding two important questions about master teachers in accounting: (1) What are the general attributes of highly effective accounting teachers?; and (2) What specific techniques and methods do highly effective accounting teachers employ? The study examined a wide variety of attributes, approaches, and techniques related to teaching effectiveness. These included lecturing techniques, methods of facilitating student participation, use of questions in the classroom, examination and syllabus content, and policies concerning assignments and grading.

Results indicate that highly effective accounting teachers possess several common attributes and achieve teaching effectiveness through a variety of techniques. Specifically, effective teaching involves dynamic and enthusiastic communication, a high degree of class preparation and organization, genuine interest in students as persons and concern for student mastery of course materials, and availability to students both in and out of class. In addition, master teachers provide prompt feedback to students, often adapt an interactive teaching style, particularly in graduate-level courses, and encourage student involvement and participation.

Effective teaching is a dynamic, not a static, goal and always requires attention to one's current teaching style as a base for progress and improvement. To be effective teachers, we must determine what learning objectives are appropriate for our students and continually monitor and, where appropriate, modify our teaching approach to make certain those objectives are reached (Bonner, 1999; Weaver, 1978). Although effective teaching involves many techniques, skills, and attributes beyond those considered here, the quality of accounting education could be improved by instructors' consideration of the characteristics and methods examined herein and adapting, as appropriate, these methods to their own teaching style.

The results of the study must be evaluated with due regard to the following limitations. First, the selection of participants was limited to only two from each school; thus, a limitation of the study was that some outstanding teachers might have been excluded from the sample. Second, selection of participants was dependent on the chairperson's assessment of whom the best teachers are; thus, the reliability of the chairperson's assessment is a limitation of the study. Third, the relatively small sample size may affect the generalizability of the findings.

Future studies might include larger samples consisting of both higher numbers of professors and inclusion of additional countries.

This study highlights the teaching techniques and methods used by accounting educators who have distinguished themselves as outstanding teachers. The findings have important implications for university accounting educators. In addition, the findings may offer a useful starting point for future research regarding differences among effective teaching techniques for post-graduate vs. undergraduate students. Accounting educators are encouraged to evaluate their current teaching techniques, appraise the techniques considered herein and, when appropriate, experiment and try new approaches, with the goal of identifying those techniques and methods that most effectively facilitate their students' learning.

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ASSESSING CURRENCY EXCHANGE RATE EXPOSURE USING GEOGRAPHIC SEGMENT DISCLOSURES: THE IMPORTANCE OF CURRENCY-SPECIFIC TYPE AND DEGREE OF EXPOSURE

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ABSTRACT

This study provides descriptive evidence regarding the investors' assessment of the currency exchange rate exposure of U.S.-based multinational enterprises. We match sample firms' equity security returns with currency-specific exchange rate changes using their SFAS No. 14 geographic segment disclosures. Unique from prior research, we use a firm-specific longitudinal approach which allows the type and amount of currency-specific to vary. We document ample evidence of currency exchange rate exposure significantly different from zero at conventional confidence levels. Particularly, when grouped according to type of exposure (i.e. positive or negative) and in absolute value we find significant currency exposure for every currency examined. We use our results to illustrate the impact of firms natural hedging on obscuring associations between firms' equity security returns and currency exchange rate changes and

Advances in International Accounting
Advances in International Accounting, Volume 16, 139–152

ISSN: 0897-3660/doi:10.1016/S0897-3660(03)16008-4

conjecture natural hedging as one explanation for modest results in extant literature.

INTRODUCTION

Studies such as Bartov and Bodnar (1994) and Jorion (1990) addressing assessment of the foreign currency exchange rate exposure of U.S.-based multinational enterprises (MNEs): (1) use a trade weighted-average measure of aggregate exchange rate changes as an independent variable; and (2) apply those aggregate rates to sample U.S.-based MNEs equity security returns as dependent variables without considering specific currencies for which individual firms have (or do not have) exchange rate risk.[1] However, research such as Bazaz, Senteney and Sharp (1997) and Conover, Conover and Karafiath (1994) use the *Statement of Financial Accounting Standards* (SFAS) *No. 14* (Financial Accounting Standards Board, 1976) geographic segment disclosures to identify specific countries in which firms are a priori known to have foreign operations and use this information to match currencies for which firms have exchange rate exposure with their equity security returns in order to reduce the estimation bias resulting from including in the calculation of the average exchange rate currencies for which sample MNEs have no specific exposure.

We employ firm-specific longitudinal market model regressions extended to include measures of unexpected earnings as well as a vector of currency exchange rate changes corresponding to specific countries in which firms are known to have foreign operations per their SFAS No. 14 geographic segment disclosures. Utilizing a vector of currency exchange rates rather than an average as in previous research allows us to: (1) use an aggregated coefficients approach to estimating the currency exposure of firms by estimating separately exposure only for currencies for which MNEs report country of operations in their SFAS No. 14 disclosures; and (2) separately consider (at a firm-specific level) positive and negative exposures rather than having them off-setting in aggregate when estimating MNEs currency exposure using the trade-weighted average approach.[2] We use our results to illustrate how off-setting positive and negative exposures which are significantly different from zero at an acceptable confidence level are difficult to detect when average exchange rates are used due to the "natural hedging" of currency exposures associated with foreign operations located in different countries. Considered individually and on a firm-specific level, however, we document ample evidence of individually significant positive and negative currency exchange rate exposures for U.S.-based MNEs. Although weak in algebraic sum, the positive and negative exchange rates exposure coefficients are individually considerably stronger and significantly

different from zero in absolute sum. We contribute to the current literature by empirically documenting improvements in estimation of currency exchange rate exposure resulting from: (1) estimating separately exchange rate exposure coefficient on a firm-specific and currency by currency basis only for currencies that it is known a priori via the SFAS No. 14 geographic segment disclosures that the sample MNEs have exposure; and (2) allowing for the firm-specific variation in the type and degree exchange exposure on a currency by currency basis before testing the statistical significance of the measure of the currency exposure of the sample U.S.-based MNEs.

The remainder of the paper is presented in four sections. The first section discusses the underlying intuition and motivation for the study. The second section describes the U.S.-based MNEs utilized, the data sources and selection, and the empirical and statistical methods employed. Third, the results are presented and discussed. The last section presents the conclusions of this study.

LITERATURE ON EXCHANGE RATE EXPOSURE AND SHARE VALUES

The current literature suggests that the exchange rate exposure of MNEs may be assessed as the regression coefficient of equity security returns onto contemporaneous currency exchange rate changes.[3] This formulation of exchange rate exposure provides the foundation for two recent studies on the impact of exchange rates on equity share values of U.S.-based MNEs. Jorion (1990) uses a regression model to estimate firms' currency exchange rate exposure. He finds that the coefficient of currency exchange rate exposure increases in relation to the firms degree of foreign operations (Table 3, p. 342) and that the relation is significantly differently from zero at the $\alpha = 0.05$ confidence level. Similarly, Bartov and Bodnar (1994) (Table 2, Panel A, p. 1768) regress abnormal equity security price performance indices onto contemporaneous and lagged exchange rate changes and indicate significant lagged relations at the $\alpha = 0.05$ confidence level.[4]

A particularly noteworthy aspect of the extant literature is that it shows only somewhat sparse and weakly significant associations between currency exchange rate changes and the equity security returns of U.S.-based MNEs. In a study using 287 U.S.-based MNEs, Jorion (1990) reports finding that exchange rate exposure coefficients (estimated as regression coefficients of security returns onto trade weighted-average exchange rate changes) were generally not significant at normal confidence levels. These weak results may provide a partial explanation for the paucity of studies characterizing the association between the equity security returns of U.S.-based MNEs and currency exchange rate changes. However,

Bartov and Bodnar (1994) a priori chose firms with significant SFAS No. 52 cumulative translation gains or losses and grouped the sample firms accordingly as they are more likely to exhibit correlations between changes in firm value and the value of the U.S. dollar of the same sign. Nonetheless, the results of their study show no significant contemporaneous correlation between the risk-adjusted returns of U.S.-based MNEs and changes in a trade-weighted index of the U.S. dollar. The authors note that their finding, in spite of their attempts to illuminate relations, is consistent with the failure of prior research to document a contemporaneous relation between dollar fluctuations and firm value (Bartov & Bodnar, p. 1783).

Two research studies taking measures to overcome weaknesses in previous literature using the SFAS No. 14 geographic segment disclosures are Bazaz, Senteney and Sharp (1997) and Conover, Conover and Karafiath (1994).[5] Bazaz, Senteney and Sharp (1997) use the SFAS No. 14 geographic segment disclosures to identify firms with exposure to specific currencies (i.e. firms with operations located in specific countries) and match those firms with currency specific exchange rate changes in regressions estimating currency specific exchange rate exposure coefficients.[6] These authors report significant contemporaneous and lagged associations between the security returns of U.S.-based MNEs which appear to be time dependent. However, although the results are an improvement over prior research, this study does not control for the possible impact of the differential exposure of the sample firms to the same currency, which, in averaging, may bias the results toward zero. Conover, Conover and Karafiath (1994) investigate the abnormal return behavior of U.S.-based MNEs following upon devaluation of the Mexican peso. Using the Krafiath, Mynatt and Smith (1991) event methodology with control firm portfolios, their sample of U.S.-based MNEs consisted of 157 firms which were assigned to portfolios based on their peso exposure. Firms specifically identifying foreign operations in Mexico using their SFAS No. 14 geographic segment disclosures had significant negative returns within five trading days of the announcement of the closure of the market for pesos in the *Wall Street Journal*.

We believe that the somewhat poor results for associating currency exchange rate changes and the security returns of U.S.-based MNEs may result from the interaction of two aspects of the approach to estimation of currency exposure used in the prior literature: (1) not separately estimating an exposure coefficient for each currency for which a particular MNE has specifically identified exposure; and (2) not allowing the type and degree of exposure to vary on a firm-specific level in estimating currency exposure.[7] The result of these two factors in estimating currency exposure, if not explicitly considered, may obscure the true level of significance of the firm-specific currency-specific relationships.

We attempt to overcome some of the difficulties inherent in previous research with use of a different research design. First, estimate currency exposure on a longitudinal firm-specific basis rather than on a cross-sectional basis as in prior research. Second, we use a vector of currency exchange rates as independent variables rather that average currency exchange rates as in previous research which, considered with the longitudinal approach, allows for variation on a firm-specific basis of the type and degree of currency-specific exposure. In addition, we also explicitly consider in our longitudinal analyses other important events impacting the firm's security returns such as the firm's quarterly earnings announcements.

EXPERIMENTAL METHOD AND STATISTICAL TESTS

The firms used in this research meet the following data availability criteria:

- They have been identified as having operations in one of the ten countries for which Standard & Poors *Compustat PC Plus* SFAS No. 14 Geographic Segment disclosures data reports country-specific operations as an individual geographic segment.
- They have the following non-missing security data in the *Center for Research on Security Prices* (*CRSP*) Daily Master files for trading days between January 1, 1985 and December 29, 1991 (inclusive).
- They have non-missing quarterly earnings announcement date data available in the *Compustat* data files for the first calendar quarter of 1985 and extending through the fourth calendar quarter of 1991.
- They have non-missing quarterly primary earnings-per-share (before discontinued operations and extraordinary items) and quarterly median analysts' earnings forecasts in the *Institutional Brokers Estimate Service*(*IBES*) data files from January 1, 1985 and extending through December 29, 1991.

The daily currency exchange rate data are obtained from *DataStream International* service.

We utilize an extended market model to simultaneously estimate SFAS No. 14 country of operations currency specific exchange rate exposure coefficients. The extended market model regresses daily equity security returns onto: (1) daily equal weighted-average market returns; (2) quarterly analysts' earnings forecast errors; and (3) a vector with a maximum of eight daily SFAS No. 14 country of operations percentage exchange rate changes. The extended market model is estimated on a longitudinal (i.e. time series) basis and separately for each sample firm over the 1769 trading days beginning January 1, 1985, and ending December 29, 1991. The

regression model used to estimate the sample firms' earnings response coefficients and exchange rate exposure coefficients is shown in Eq. (1) below.

$$\ln[1 + R_{it}] = \gamma_{0i} + \gamma_{1i}\ln[1 + \bar{R}_{mt}] + \gamma_{2i}D_{it}\mathrm{FE}_{it} + \sum_{j=1}^{j=8}\gamma_{3i}\ln[1 + R_{Cjt}]\,\mathrm{GAREA}_{ij} + \mu_{it} \quad (1)$$

where:

$$R_{it} = \frac{\mathrm{Equity}_{it} - \mathrm{Equity}_{it-1} + \mathrm{Dividend}_{it}}{\mathrm{Equity}_{it-1}}$$

$$\bar{R}_{Mt} = \frac{1}{K}\sum_{k=1}^{k=K} R_{kt}$$

$$\mathrm{FE}_{it} = \frac{\mathrm{EPS}_{it} - E[\mathrm{EPS}_{it}]}{\mathrm{Price}_{it-3}}$$

D_{it} = qualitative variable assigned a value of one if trading-day t is one of the three trading-day period beginning one trading-day prior to the earnings release date and ending one trading-day after the earnings announcement date, and zero otherwise.

$$R_{Cjt} = \frac{\mathrm{Currency}_{jt} - \mathrm{Currency}_{jt-1}}{\mathrm{Currency}_{jt-1}}$$

$\gamma_{0ij}, \ldots, \gamma_{3ij}$ = Ordinary Least-Squares regression parameter estimates, and μ_{ji} = regression error terms having zero means and constant variance.

GAREA_{ij} is a 1×8 firm-specific vector of qualitative variables corresponding to the eight SFAS No. 14 county of operations and their respective currencies.[8] The *j*th element of this vector takes a value of one if the *i*th firm specifically identifies this country in its SFAS No. 14 disclosures and is given a value of zero otherwise. Consequently, if the *i*th firm identifies Australia as its only country of operation then $\mathrm{GAREA}_{ij=1}$ has a value of one and all other elements are zero resulting in the Australian Dollar as the only currency appearing the Eq. (1). If the *i*th firm identifies Australia and Canada as countries of operations then $\mathrm{GAREA}_{ij=1}$ and $\mathrm{GAREA}_{ij=2}$ are assigned values of one and the remaining elements of GAREA_{ij} take value of zero and as a result the Australian and Canadian Dollars are the only currencies in the *i*th regression. The mechanics of this design allow us to examine and test hypotheses regarding the γ_{3ij} and various cummulations thereof. The D_{it} are qualitative variables relating to the earnings forecast variables. As a result of

this variable the *i*th firm's earnings forecast errors appear only on days around earnings announcements and are zero otherwise and serve the important purpose of controlling for an important determinant of security returns.

In order to specifically address and summarize character and behavior of the currency exposure coefficients (γ_{3ij}) estimated from Eq. (1) shown above, we test a variety of hypotheses concerning several approaches to grouping the currency exposure coefficients. First, we test the null hypotheses that the coefficients for each currency are in mean not different from zero at the $\alpha = 0.05$ confidence level over all firms with a particular currency exposure. This null hypothesis disregards whether the firm-specific exposure for a particular currency is positive or negative and is shown in Eq. (2) below as H_{01}:

$$\mathbf{H_{01}}: \quad N_j^{-1} \sum_{i=1}^{i=N_j} \gamma_{3ij} = 0, \quad \forall\ j \in [j = 1, \ldots, 8] \tag{2}$$

The second set of hypotheses concerns only the currencies for which the sample firms have positive exposures. The second null hypothesis is that the average of the positive firm-specific currency exposure coefficients is not significantly different from zero at the $\alpha = 0.05$ confidence level for each of the currency specific exposures. The second hypothesis is labeled as H_{02} and is shown in Eq. (3) below:

$$\mathbf{H_{02}}: \quad N_{j\text{pos}}^{-1} \sum_{i=1}^{i=N_j} \gamma_{3ij} = 0, \quad \forall\ \gamma_{3ij} > 0, \quad \forall\ j \in [j = 1, \ldots, 8] \tag{3}$$

The third set of hypotheses concerns only negative exposures. The third null hypothesis is that the mean of the negative firm-specific currency exposure coefficients is not significantly different from zero at the $\alpha = 0.05$ confidence level for each of the currency specific exposures. The third hypothesis is labeled as H_{03} and is shown in Eq. (4) below:

$$\mathbf{H_{03}}: \quad N_{j\text{pos}}^{-1} \sum_{i=1}^{i=N_j} \gamma_{3ij} = 0, \quad \forall\ \gamma_{3ij} < 0, \quad \forall\ j \in [j = 1, \ldots, 8] \tag{4}$$

Fourth, we test the null hypotheses that the absolute value of the coefficients (i.e. both positive and negative coefficients considered together) for each currency are in mean not different from zero at the $\alpha = 0.05$ confidence level over all firms with a particular currency exposure. This null hypothesis is labeled as H_{04} and is

shown in Eq. (5) below:

$$\mathbf{H_{04}}: \quad N_j^{-1} \sum_{i=1}^{i=N_j} |\gamma_{3ij}| = 0, \quad \forall\ j \in [j = 1, \ldots, 8] \tag{5}$$

The next set of hypotheses tests concern the sums of currency exchange rate coefficients across currencies for the each firm and then across all firms. The first hypothesis in this group is that the algebraic sum of the coefficients (i.e. positive coefficients and negative coefficients added together) across currencies for each firm and then across all firms is not statistically different from zero at the $\alpha = 0.05$ confidence level. This hypothesis is labeled H_{05} and is shown in Eq. (6) below:

$$\mathbf{H_{05}}: \quad N_j^{-1} \sum_{i=1}^{i=N_j} \sum_{j=1}^{j=8} \gamma_{3ij} = 0 \tag{6}$$

The next null hypothesis in this group is that the sum of the positive coefficients only across currencies for each firm and then across all firms is not statistically different from zero at the $\alpha = 0.05$ confidence level. This hypothesis is labeled H_{06} and is shown in Eq. (7) below:

$$\mathbf{H_{06}}: \quad N_{j\text{pos}}^{-1} \sum_{i=1}^{i=N_{j\text{pos}}} \sum_{j=1}^{j=8} \gamma_{3ij} = 0 \tag{7}$$

The next null hypothesis in this group is that the sum of the negative coefficients only across currencies for each firm and then across all firms is not statistically different from zero at the $\alpha = 0.05$ confidence level. This hypothesis is labeled H_{07} and is shown in Eq. (8) below:

$$\mathbf{H_{07}}: \quad N_{j\text{neg}}^{-1} \sum_{i=1}^{i=N_{j\text{neg}}} \sum_{j=1}^{j=8} \gamma_{3ij} = 0 \tag{8}$$

The last null hypothesis in this group is that the sum of the absolute values of both the positive and negative currency exchange rate coefficients across currencies for each firm and then across all firms is not statistically different from zero at the $\alpha = 0.05$ confidence level. This hypothesis is labeled H_{08} and is shown in Eq. (9) below:

$$\mathbf{H_{08}}: \quad N_j^{-1} \sum_{i=1}^{i=N_j} \sum_{j=1}^{j=8} |\gamma_{3ij}| = 0 \tag{9}$$

Table 1. Summary Statistics for Underlying Data Used to Estimate Eq. (1) and Firm Specific Currency Exposure Coefficients.

Variable	Mean	Std. Dev.	t-Value[a]	p-Value[a]
Market return (R_{mt})	0.00665	0.00879	69.885	0.0001
Company specific return (R_{it})	0.00035	0.02952	10.193	0.0001
Earnings forecast error (FE_{it})	−0.00288	0.02858	−13.510	0.0001
Australia ($R_{Cj=1t}$)	0.00008	0.00690	5.197	0.0001
Canada ($R_{Cj=2t}$)	0.00014	0.00275	39.141	0.0001
France ($R_{Cj=3t}$)	0.00026	0.00770	15.792	0.0001
Germany ($R_{Cj=4t}$)	0.00033	0.00756	21.661	0.0001
Japan ($R_{Cj=5t}$)	0.00033	0.00756	16.115	0.0001
Philippines ($R_{Cj=6t}$)	−0.00161	0.01514	−5.609	0.2012
South Africa ($R_{Cj=7t}$)	−0.00006	0.00827	−1.278	0.0001
United Kingdom ($R_{Cj=8t}$)	0.00018	0.00729	16.121	0.0001

[a] t-Statistics and related p-values are in regards to tests of the null hypotheses that the means for the respective data variables are equal to zero under the null hypotheses.

RESULTS OF EMPIRICAL ANALYSES

Summary statistics for the data used to estimate the empirical model shown in regression Eq. (1) are shown in Table 1 by groupings of returns variables, earnings forecast errors, and currency exchanges rate changes. t-Statistics and probability values are also shown relating to the null hypothesis that the mean data values are equal to zero to help the reader judge the relative magnitudes of the data.

Mean values for the firm-specific currency-specific exchange rate exposure coefficients estimated from Eq. (1) are shown in Table 2 by SFAS No.14 country of operations as well as their respective probability values resulting from tests of the null hypotheses (i.e. H_{01} through H_{04} shown in Eq. (2) through Eq. (4)) that the average coefficient (per SFAS No.14 country of operations currency) is not equal to zero at the $\alpha = 0.05$ confidence level. In addition, Table 2 illustrates the mean values and related hypotheses tests for four the groupings of the currency-specific exchange rate exposure coefficients: (1) algebraic coefficients, including both positive and negative coefficients; (2) positive coefficients only; (3) negative coefficients only; and (4) the absolute value of both positive and negative coefficients.

Panel 1 of Table 2 indicates that only two (Canada and South Africa) of the mean values of the algebraic (i.e. allowing for natural hedging of offsetting currency-specific exposures) exchange rate exposure coefficients are significantly differently from zero in algebraic means at the $\alpha = 0.05$ confidence level. Consequently, H_{01} is rejected for only 25% of the currencies in Panel 1 of Table 2 and is a result which

Table 2. Estimates of U.S.-Based MNEs Firm-Specific Currency-Specific Exchange Rate Exposure Coefficients Eq. (1).

Statistic	Australia	Canada	France	Germany	Japan	Philippines	South Africa	United Kingdom
Panel 1: Algebraic coefficients								
Mean	−0.0041	−0.0044	−0.0008	0.0109	−0.0050	0.0063	−0.0259	−0.0107
t-Value	−0.4634	−3.4249	0.0545	0.7469	−0.4975	0.2541	−2.2268	−1.4415
p-Value	0.6437	0.0007**	0.9566	0.4562	0.6200	0.8034	0.0368**	0.1505
N	155	428	151	167	92	14	23	292
Panel 2: Positive coefficients								
Mean	0.0791	0.2014	0.1153	0.1414	0.0774	0.0682	0.0291	0.0866
t-Value	9.4240	14.2791	9.9097	8.7612	9.7754	4.9724	3.6470	11.2529
p-Value	0.0001**	0.0001**	0.0001**	0.0001**	0.0001**	0.0016**	0.0082**	0.0001**
N	75	170	75	85	44	8	8	136
Panel 3: Negative coefficient								
Mean	−0.0820	−0.2058	−0.1123	−0.1243	−0.0805	−0.0762	−0.0552	−0.0955
t-Value	−9.7406	−19.3027	−6.7151	−9.5814	−9.5818	−2.3535	−4.7697	−13.7757
p-Value	0.0001**	0.0001**	0.0001**	0.0001**	0.0001**	0.0653*	0.0003**	0.0001**
N	80	258	76	82	48	6	15	156
Panel 4: Absolute values								
Mean	0.0806	0.2040	0.1138	0.1330	0.0790	0.0716	0.0046	0.0914
t-Value	13.5926	23.9604	11.1814	12.8074	13.7100	4.7051	5.5235	17.7327
p-Value	0.0001**	0.0001**	0.0001**	0.0001**	0.0001**	0.0004**	0.0001**	0.0001**
N	155	428	151	167	92	14	23	292

*Indicates that the related regression coefficient is significantly different from zero at the $\alpha = 0.10$ confidence level using a two-tailed *t*-test of the null hypothesis that the regression coefficient is equal to zero.

**Indicates that the related regression coefficient is significantly different from zero at the $\alpha = 0.05$ confidence level using a two-tailed *t*-test of the null hypothesis that the regression coefficient is equal to zero.

is on par with previous research regarding the estimation of currency exchange rate exposure coefficients. Panel 2 of Table 2 shows the mean values and related hypotheses tests for the positive currency-specific exchange rate exposure coefficients only. In marked contrast to Panel 1, Panel 2 indicates that the exchange rate exposure coefficients are significantly greater than zero at the $\alpha = 0.05$ confidence level for every currency. Panel 3 of Table 2 shows the mean values and related hypotheses tests statistics for the negative currency exchange rate exposure coefficients. Consistent with Panel 2, Panel 3 indicates that the exchange rate exposure coefficients are significantly less than zero at the $\alpha = 0.05$ confidence level for every currency except that of the Philippines, which is significantly less than zero at the $\alpha = 0.10$ confidence level (i.e. it has a probability value of 0.0653). Panel 4 of Table 2 shows the mean values and related hypotheses tests statistics for the absolute value of both positive and negative currency exchange rate exposure coefficients. Consistent with Panel 2, Panel 4 indicates that the exchange rate exposure

Table 3. Results of Hypotheses Tests Concerning Sum of Exchange Rate Exposure Coefficients Over All Currencies For Which Coefficients Are Estimated in Regression Eq. (1).

Statistic	Algebraic Sum H_{01}	Positive Coefficient H_{02}	Negative Coefficient H_{03}	Absolute Sum H_{04}
Mean	−0.0366	0.1299	−0.1665	0.2965
t-Value	−3.4450	17.9135	−20.4168	26.4753
p-Value	0.0006**	0.0001**	0.0001**	0.0001**
N	591	591	591	591

**Indicates that the related regression coefficient is significantly different from zero at the $\alpha = 0.05$ confidence level using a two-tailed *t*-test of the null hypothesis that the regression coefficient is equal to zero.

coefficients are significantly greater than zero at the $\alpha = 0.05$ confidence level for every currency.

The results shown in Table 2 illustrate one of the difficulties with identifying the exchange rate exposure of U.S.-based MNEs which we suggest is attributable to "natural hedging" behavior of the U.S.-based MNEs used as the subject firms in the previous research. Panel 1 of Table 2 would lead one to believe that there is virtually no association between U.S.-based MNEs security returns and exchanges rate changes since only 25% of the currencies examined exhibit a significant relation. However, Panel 2 through Panel 4 of Table 2 lead to and entirely different conclusion. There, 96% of the hypothesized relations are significantly different from zero at the $\alpha = 0.05$ confidence level and 100% of the currencies demonstrate the hypothesized association at the $\alpha = 0.10$ confidence level or better.

Table 3 shows the results of the hypotheses tests that the sums of the firm-specific currency-specific exchange rate coefficients are equal to zero. As in Table 2, the null hypotheses are tested for algebraic, positive, negative, and absolute value coefficient sums. Similar to the results reported in Table 2, 100% of the hypotheses tests are rejected suggesting that all of the sums examined are significantly different from zero at the $\alpha = 0.05$ confidence level. In addition, an additional null hypothesis is tested from the data in Table 3 examining whether the sum of the positive and negative is not different from zero. This null hypothesis produced a *t*-statistic of −0.2598 and is not rejected at the $\alpha = 0.05$ confidence level.

CONCLUDING REMARKS

The current literature regarding the association between currency exchange rate changes and the equity security returns of U.S.-based MNEs empirically

documents the association raises and leaves unanswered important questions regarding the weak nature of the empirical evidence reported in the literature to date. We conjecture that important reasons for low frequencies of reported statistical significance may be that exchange rate coefficients are: (1) estimated in cross section rather than longitudinal firm-specific coefficients being used; and (2) estimated in aggregate using weighted-average exchange rates rather than separate coefficients for each currency for which the sample firms have specific currency risk. We use an aggregated coefficients approach to estimating the currency exchange rate risk of U.S.-based MNEs which allows us to: (1) longitudinally estimate firm-specific currency-specific exchange rate exposure coefficients; and (2) allow for varying amounts and types of currency exposure on a firm-specific currency-by-currency level. Testing a variety of hypotheses regarding specific currency exposure coefficients and sums of specific currency coefficients across all sample firms, we document ample empirical evidence regarding the exchange rate exposure of U.S.-based MNEs. In addition, we illustrate how the averaging of positive and negative coefficients tends to obscure the true association.

NOTES

1. These research studies employ a trade-weighted exchange rate obtained using weights from the Multilateral Exchange Rate Model provided by the International Monetary Fund. The details involved in the calculation of the Multilateral Exchange Rate Model are provided in Artus and McGuirk (1981). The percentage weights for each country entering the calculation of the trade-weighted average exchange rate are provided in Jorion (1990).

2. The type of currency exchange exposure will depend on whether an MNE has net monetary assets or net monetary liabilities denominated in a foreign currency. MNEs having a foreign subsidiary with net monetary assets in a foreign currency will benefit from declines in the dollar because the foreign-currency-denominated receipts translate into comparatively more dollars. MNEs having a foreign subsidiary with a net monetary liabilities in a foreign currency will suffer from declines in the dollar as the cash payments denominated in the foreign currency will require the use of comparatively more dollars. The preceding results would reverse when the dollar appreciates against foreign currencies. The degree of exposure will depend on the magnitude of the monetary asset or liability having currency exposure.

3. Extant literature examines the impact of inflation rates and interest rates on equity share values; however, the literature investigating the impact of currency exchange rate changes on equity security returns is comparatively sparse. French, Ruback and Schwert (1983), Flannery and Christopher (1984), Bernard (1986), and Sweeny and Varga (1986) are part of the extensive research literature investigating the impact of inflation or interest rates upon the equity share values of firms.

4. Bartov and Bodnar (1994) (Table 4, Panel A, p.1782) regress analysts' earnings forecast errors onto lagged exchange rate changes. They report that exchange rate changes are an important determinant of earnings forecast errors for U.S.-based MNEs. Noronha and

Seifert (1994) investigate the relation between the forecast error coefficient of exchange rate exposure and degree of international operations and report that the relation is positive.

5. Research literature on the usefulness of SFAS No. 14 Geographic Segment disclosures examines a variety of aspects of the usefulness of these disclosures. Balakrishnan, Harris and Sen (1990) and Roberts (1989) find that geographic segment data can improve consolidated earnings forecast accuracy. Prather-Stewart (1995) and Boatsman, Behn and Patz (1993) find significant equity security returns associated with firms' disclosure of geographic segment data. Prodhan (1986) and Prodhan and Harris (1989) report results suggesting that firms exhibited a systematic risk decline following upon their implementation of geographic segment disclosures. However, to our knowledge, extant research has not used the SFAS No. 14 Geographic Segment disclosures to estimate exchange rate exposure risk which allows the exposure to vary on a currency-by-currency basis.

6. One potentially important use of the SFAS No. 14 geographic segment disclosures may be aiding in investors' assessment of earnings uncertainty of U.S.-based MNEs arising from currency-specific exchange rate exposure. While many of the SFAS No. 14 geographic segment disclosures identify only aggregate geographic regions (usually continents e.g. Africa, Asia, Australia, Europe, and/or South America), many of the geographic segment disclosures identify specific countries in which U.S.-based MNEs have concentrated operations. The Standard and Poor's Compustat SFAS No. 14 geographic segment disclosure classification scheme allows for the identification of ten specific countries. The ten countries are (in alphabetical order): Australia (S&P Compustat Code No. 41), Brazil (No. 51), Canada (No. 62), France (No. 32), Germany (No. 33), Japan (No. 21), Mexico (No. 63), Philippines (No. 22), South Africa (No. 11), and U.K. (No. 31).

7. The exchange rate exposure of an MNC is difficult to assess externally, however, because of the general lack of publicly available information regarding the monetary assets and monetary liabilities of individual segments. The U.S.-based parent company may have a variety of subsidiaries differing in type (i.e. whether they hold net foreign monetary assets or net foreign monetary liabilities) and magnitude. The exchange rate exposure of the U.S.-based parent company is the value-weighted average of the exchange rate risk of its subsidiaries, and may be zero exposure due to diversification or costly hedging. Such a determination requires subsidiary-specific monetary asset and liability data that are not among publicly available information but which we are attempting estimate using currency-specific relations. This limitation increases the difficulty of finding significant relationships, a point which should be kept in mind when interpreting the results reported in the prior studies.

8. Mexico and Brazil are dropped from the ten countries selected because of hyperinflation.

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THE CHINESE SECURITIES REGULATORY COMMISSION AND THE REGULATION OF CAPITAL MARKETS IN CHINA

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ABSTRACT

The rapid development of China's capital markets necessitated the establishment of a regulatory agency that would administer market operations and protect investors' interests. The Chinese Securities Regulatory Commission (CSRC) was established in 1992 for this purpose. In 1999, the Chinese Securities Law recognized the CSRC as the sole regulatory agency responsible for regulating securities instruments and markets in China. Although the CSRC is considered instrumental to Chinese accounting reforms and capital market development, it has remained relatively unexamined in the accounting literature. This paper contributes to the accounting literature by providing insight into an important regulatory agency that has enormous impact on the economic development of China. Specifically, this paper discusses the CSRC's establishment and development, its regulatory efforts, and its achievements and shortcomings in its efforts to regulate China's emerging capital markets. The underlying factors that explain some of the CSRC's regulatory

Advances in International Accounting
Advances in International Accounting, Volume 16, 153–174

ISSN: 0897-3660/doi:10.1016/S0897-3660(03)16009-6

actions are also analyzed by discussing several cases involving fraudulent financial reporting.

INTRODUCTION

The emergence of stock markets in China at the beginning of the 1990s is the natural result of Chinese economic reforms in the 1980s and subsequent economic growth. Over the past decade, the number of listed companies has increased from 14 to more than 1,000 as of July 2000, making the Chinese capital market one of the ten largest global securities exchanges in terms of the number of listed firms. Thus far, approximately 315 billion shares have been issued on the Shanghai and Shenzhen Stock Exchanges, the two national exchanges in China (*Xinmin Evening News*, July 6, 2000). Currently, China has approximately 50 million equity investors and nearly $500 billion combined market capitalization. China's Shanghai and Shenzhen Stock Exchanges together form the third largest stock market in Asia, behind Japan and Hong Kong (Saywell, 2000).

Further development of China's capital market in the new century is also promising. China's entry into the World Trade Organization (WTO), which occurred in November 2001, will have a dramatic impact on China's developing securities markets. The efficiency, transparency, and liquidity of China's securities markets will be greatly improved. This will enable the Chinese capital markets to effectively compete with the securities markets in other countries (Burke, 1999). Meanwhile, the reforms of China's retirement and unemployment insurance systems should increase the number of long-term investors, thus facilitating market stability. Furthermore, national and international investors will continue to be attracted to investment opportunities in the Chinese capital markets.

After the establishment of the Shanghai Stock Exchange (SHSE) in 1990 and the Shenzhen Stock Exchange (SZSE) in 1991, China, like the U.S. before the passage of the Securities Acts, soon found itself in need of an effective regulatory agency capable of regulating market operations and protecting investor interests. Created in 1992, the Chinese Securities Regulatory Commission (CSRC) is responsible for oversight of the nascent capital markets in China. The survival and success of the CSRC has tremendous impact on the development of the Chinese economy and its capital markets.

The objective of this paper is to provide insight into the regulatory operations of the CSRC. More specifically, this study: (1) discusses the establishment and development of the regulatory authority of the CSRC; (2) discusses the CSRC's disclosure and listing requirements, market supervision, and the effectiveness

of its enforcement; and (3) examines several cases to determine how the CSRC typically responds to securities fraud.

PREVIOUS STUDIES

In recent years, the rapid development of securities markets in China has attracted the attention of researchers. Previous studies have examined various aspects of the Chinese capital markets, such as the information environment (Abdel-Khalik et al., 1999), disclosure requirements (Chen et al., 1999; Xiao, 1999), and capital market segmentation of A and B-shares (discussed later) (Chui & Wong, 1999). The CSRC, however, has remained relatively unexamined. This paper, therefore, contributes to the international accounting literature by providing insight into an important regulatory agency that has an enormous impact on the economic development of China.

ESTABLISHMENT OF THE CSRC

Upon its establishment in 1992, the CSRC functioned as the executive branch of the State Council Securities Commission (SCSC), which was directly responsible to the State Council. The SCSC was in charge of policy decisions, while the CSRC supervised daily market operations.

The CSRC's regulatory authority has emerged gradually over time. In 1993, it began to regulate the Shanghai and Shenzhen Stock Exchanges. At the end of 1993, the CSRC was given authority over China's futures markets, but this authority was not formally exercised until 1995. In the middle of 1995, the CSRC gained control of some 25 trading centers. Formerly, these trading centers had been supervised by local governments, and were beyond the jurisdiction of the Shanghai and Shenzhen Stock Exchanges. The trading of bonds constituted most of the activities of these trading centers. The takeover represented an expansion of the CSRC's regulatory authority.

In 1998, China's national securities regulatory mechanism was reorganized. In order to strengthen and clarify the CSRC's authority, the CSRC and the SCSC were merged to form one agency. Before the merger, the CSRC lacked administrative autonomy, and thus could not act as an independent agency. Also in 1998, the securities regulatory authority of local governments was formally transferred to the CSRC, and all organizations engaged in securities trading that were formerly supervised by the People's Bank of China were put under the control of the CSRC.

In 1999, China passed the National Securities Law. Prior to its passage, the CSRC operated without a clear and firm legal foundation for its authority.

Although there were several statutes indicating the jurisdiction and responsibility of regulatory organizations, some of these statutes were contradictory. The need to establish national securities laws was recognized as early as 1993, but final passage of the National Securities Law was delayed, as drafts of the proposed law went through numerous revisions and debates among government bureaus before its final passage in July 1999. The 1999 Securities Law grants the CSRC the sole responsibility for regulating the Chinese securities markets. The Law also prescribes issuing requirements and acceptable practices in the primary and secondary markets, as well as the operating requirements for securities firms, and penalties for securities fraud. However, the Law skirted some of the crucial issues that threaten the progress of the Chinese financial services industry, such as the regulation of financial instruments such as derivatives and bond issues.

Due to the above events, the CSRC's functions became more well-defined, and its authority strengthened and clarified. By 1999, the CSRC was the sole securities market regulatory authority in China. The ultimate source of power, however, still rests with the National People's Congress; any legislative changes sought by the CSRC would require approval by the Standing Committee of the National People's Congress.

CHARACTERISTICS OF CHINESE CAPITAL MARKETS AND MARKET REGULATION BY THE CSRC

China currently has two national stock exchanges located in Shanghai and Shenzhen, and numerous local exchanges scattered throughout the country.[1] These stock exchanges have evolved into an integrated marketplace connected by two nationwide electronic trading systems: the Securities Trading Automated Quotations Systems (STAQS) and the National Electronic Trading System (NETS). All stock exchanges are under the supervision of the CSRC.

Ownership restriction and market segmentation are two distinct differences between Chinese and Western stock markets. Ownership restriction applies to the government's shares of state-owned companies and is restricted with regards to the transfer of ownership (currently, 99% of listed firms are state-owned enterprises). These shares are called non-tradable shares, in contrast to tradable shares that can be purchased and sold by individual investors. Ownership restriction has effectively prevented state-owned enterprises from becoming totally privatized, since more than 50% of their shares are non-tradable. Such restrictions have also prevented investors who own tradable shares in these enterprises from dismissing incompetent management without governmental approval.

Market segmentation refers to two different types of stocks issued, namely, A-shares and B-shares.[2] Shares issued by private companies as well as state-owned shares can be either A or B-shares, or both. It should be noted, however, that state-owned shares (both A and B) may not be traded by private investors. The approval process for B-shares, however, is more complicated and more tightly controlled.[3] A-shares are denominated in Chinese currency (RMB) and can only be owned and traded by Chinese citizens, while B-shares are foreign-owned, denominated in U.S. dollars, and can only be traded by foreign investors. Both types of shares are traded solely on the Shanghai and Shenzhen Stock Exchanges. Investors in A-shares possess the same ownership rights as investors in B-shares. The A-share market is much larger than the B-share market, and A-shares are usually traded at a price multiple of 2–3 times that of B-shares of the same company (Chen & Thomas, 1997).

Capital Market Regulation

Listing Requirements

The CSRC's domestic listing requirements are unique in the sense that it utilizes a governmental quota-based system to determine which companies may list on the Chinese stock markets. Under this system, it is assumed that the government, rather than the market, should determine which companies may be listed.

The selection process occurs in the following manner. First, the State Planning Committee and the CSRC determine the quota – the number of firms to be listed and the number of new shares to be issued – on an annual basis, and then allocate the quota to the various provinces. Local governments then allocate the quota to individual firms.

At the local level, firms must fulfill certain requirements before a listing is approved, one of which is an appraisal of the firm's total fair market value obtained from the State Assets Bureau and State Land Administration. Once the listing has been approved by the firm's local government, the listing application may be submitted to the CSRC for final approval at the national level.

The intended objectives of the quota-based system are to: (1) allow only a limited number of low-risk, financially-sound companies to obtain a listing, in order to protect investors' interests; and (2) allow small, nascent securities markets to serve the capital needs of a select group of companies in urgent need of equity financing.

These objectives, however, have yet to be realized. Even though the quota-based system has the advantage of prioritizing the equity-financing needs of numerous firms by limiting the number of firms that may be listed, the system is extremely costly, and the time between initial application and formal listing can be quite long.

The process can also be affected by non-economic factors. For example, local governments generally favor the listing of State-Owned Enterprises (SOEs) rather than private enterprises, although the latter often create more profits and job opportunities than the former. The system has the tendency to lead to unfair competition and encourage corruption, since issuers sometimes bribe local officials in order to become the favored listing candidates.

Moreover, the local government's preference for SOEs has the possibility of misleading investors, since novice investors may place greater confidence in government-chosen companies and may not take necessary precautions when making their investment decisions. Some of these problems are discussed in the case analysis section of the paper.

The CSRC is not only responsible for selecting high-quality firms for listing on the Chinese securities markets, but also selects Chinese firms that wish to list on an international exchange. These responsibilities cost the CSRC time, money, and other resources that could otherwise be allocated to market regulation. In January 2000, Zhou Zhengqing, Chairman of the CSRC, stated that the quota system will be abandoned and replaced by a system under which the lead underwriters will take more responsibility. He emphasized, however, that priority would be given to the SOEs (*AsiaPulse News*, January 28, 2000).

Regulations on listings include: (1) The National Securities Law, released in 1999; (2) Provisional Regulations for Stock Issuing and Trading, issued in 1993; and (3) The Interim Regulation on the Administration of the Issue and Trading of Shares (1993).

Disclosure Requirements

With regard to the financial reporting and disclosure requirements, all listed Chinese companies are subject to the financial reporting and disclosure requirements promulgated by the CSRC. Requirements differ depending on the type of stock issued, an approach that, like the quota-based system for stock listings, is unique to China. As mentioned earlier, companies listed on a Chinese stock exchange may issue two different types of shares: A-shares and B-shares. The financial statements of A-share companies must adhere to Chinese GAAP and be audited by an accounting firm authorized by the CSRC. B-share firms must issue two sets of financial statements – one set following Chinese GAAP and the second prepared according to IAS. With regards to audit requirements, financial statements prepared according to Chinese GAAP must be audited by a domestic accounting firm, whereas statements prepared according to IAS must be audited by an international accounting firm, such as one of the Big Five accounting firms.[4] The CSRC has played a critical role in improving the level of compliance by listed companies with the mandatory requirements.

Inadequate disclosure by B-share firms in the past had been a major problem for foreign brokers and investors, until the CSRC issued new regulations on January 1, 1996, that require B-share companies to submit standard annual audited financial reports based on IAS (Chen & Thomas, 1997). The current disclosure requirements for A-share companies under Chinese GAAP are comparable to IAS disclosure requirements in most major areas. Chinese GAAP, however, is less detailed and less clear-cut than IAS.

The required financial statements are the balance sheet, income statement, and cash flow statement, as well as attached schedules and footnotes, all of which must be filed semi-annually with the CSRC. Summaries of these financial statements are required to be published in at least one of the seven securities newspapers or a journal selected by the CSRC by April 30 of the following year. Preparation costs prevent Chinese companies from providing quarterly financial information. Currently, there are no indications that the CSRC will require quarterly financial reports in the near future.

Transparency in financial reporting has been an important issue for both domestic and foreign investors in global capital markets. At the present time, however, the CSRC's disclosure requirements do not provide a basis for transparent financial reporting. Individual investors in China do not have access to complete financial information of listed companies. Just as in other capital markets, investors in China need financial information from listed firms that is timely and reliable. As mentioned above, the only available source of financial information consists of summarized annual reports published in newspapers specified by the CSRC. Such disclosures, compared with those commonly provided to investors in more developed markets, are far from adequate. One Chinese investor, after losing $2,500 on a recent stock purchase, an amount equal to the annual income for an ordinary family in China, stated: "I would never have purchased Baiwen's [a listed company] shares if I had been told the truth about the company's performance" (Leggett, July 31, 2000, p. A8).

To make matters worse, investors often do not know how the CSRC enforces its regulations and what remedies are available to them when fraud occurs. They have to wait hopelessly for the government to come to their rescue. The lack of transparency and inadequate disclosure greatly reduces investors' confidence in the reliability of financial information and ability of regulators to control China's capital markets.

Supervision of Market Operations

With regard to market supervision, the CSRC faces three problems: power overlap, undertaking too many responsibilities, and excessive market intervention. Power

overlap consists of jurisdictional conflicts that have paralyzed the CSRC in the past. Typical examples include conflicts between the CSRC and the Ministry of Finance (MOF), or the People's Bank of China (PBOC). The MOF has claimed the bond futures markets as its jurisdiction, even though the CSRC was granted jurisdiction in 1993. Such power overlap eventually led to a financial crisis in the bond futures market in 1995 (discussed shortly in the case analysis section). The PBOC resented the establishment of the CSRC, since the latter took away part of its power. The PBOC has refused to assist the CSRC in investigating financial institutions that have violated securities laws.

The power-overlap problem has been reduced year by year with the expansion of the CSRC's regulatory jurisdiction. The passage in 1999 of the Chinese Securities Law further secured the CSRC's legal status as the only securities and futures markets regulator. Whether the CSRC can act independently without interference from other organizations, however, still remains to be seen.

The role of the CSRC has been vaguely defined since its establishment. If the CSRC were modeled after the regulatory agencies found in more developed countries such as the U.S. SEC, its sole role would be that of capital-markets regulator. The CSRC, however, undertakes an all-encompassing role, i.e. the CSRC is a regulator, state planner, selector, and advisor. The CSRC is a state planner because it is striving to prevent financial distress and to encourage a steady and orderly inflow of foreign capital. The CSRC is a selector because it is responsible for selecting companies to be listed on the securities markets. The CSRC is also responsible for selecting Chinese firms that can be listed overseas. The CSRC is an advisor because it assumes the responsibility of educating companies that seek an overseas listing. As stated by Xie Shikun, the CSRC's Deputy Division Chief of the Department of International Operations: "For the overseas listings, we do have some regulatory functions, but we play a very important role in educating, advising, and coordinating. So we are educator, adviser, coordinator and, last of all, regulator" (Roell, 1996b, p. 147).

Frequent market intervention is another problem related to over regulation. In July 1994, after a precipitous decline in both the Shenzhen and Shanghai Stock Exchanges, the CSRC tried to bolster share prices by announcing that it would temporarily suspend the approval of any new A-share issues. This statement drove the market upward by 122% in less than a week. A World Bank report condemned the CSRC's actions as "unwarranted market manipulation of a major nature" (Roell, 1996a, p. S6 (1)).

Another typical market intervention occurred in March 1998. The CSRC granted to two newly established investment funds the preferential right to a 5% subscription in a new issue of A-shares. The announcement immediately triggered a wave of speculative buying. The CSRC was forced to suspend its

preferential policy within a week. Subsequently, the *China Economic Review* had the following to say about the CSRC's intervention: "This embarrassing switch bears witness to a regulator struggling to govern an immature market where government intervention, rather than rule of law, prevails" (June 1998, p. 20).

Generally speaking, the most important responsibility of a regulator is to set rules and ensure that they are followed. Regulators should avoid the problem of insufficient or excessive regulation. Excessive regulation impedes the healthy development of capital markets and leads to an inefficient allocation of resources. However, insufficient regulation may encourage fraud and corruption.

Enforcement

The CSRC tends to take a reactive rather than preventative approach to the enforcement of securities laws. It would normally not initiate an enforcement action against a firm unless a complaint was received from the public or a significant disaster or scandal occurred in the market. The CSRC has also had difficulty in enforcing compliance with market regulations. For instance, even though China's regulations on insider trading are similar to U.S. Securities Laws, they are very difficult to enforce. Political factors and a lack of available resources such as staff, funds, and high-tech equipment can explain most of the CSRC's difficulties in the enforcement of securities laws. Meanwhile, players in the stock market are still unfamiliar with the written and unwritten rules of regulation, which makes the CSRC's job more difficult.

In the following section, several cases are presented to illustrate the role of the CSRC in the regulation of securities markets in China. Although not intended as a comprehensive discussion of all CSRC enforcement activity to date, some cases illustrate the difficulties that result from jurisdictional conflicts. The cases further illustrate how enforcement of securities laws may be rendered ineffective and untimely due to the CSRC's reactive rather than preventative approach to the enforcement of rules. These cases are summarized in Appendix.

CASE ANALYSIS

The Huaan Investment Fund

Although undertaken with the best of intentions, the CSRC's decision to establish managed investment funds failed to improve the condition of China's capital markets. The first case illustrates the point that the CSRC's involvement in

implementing changes in China's capital markets without first ensuring proper regulatory oversight resulted in more, rather than less, market volatility.

Established in 1998, the Huaan Investment Fund (Huaan) was one of the first managed investment funds in China. For several years prior to 1998, the CSRC pinned its hopes on managed investment funds as the solution to the many ills of China's stock market. The CSRC believed that these new managed investment funds would accomplish three goals. The first was to reduce the degree of short-term speculation in the stock market, since fund managers were expected to invest primarily for the long-term. The CSRC also believed that as active shareholders, fund managers would be better able to oversee companies that routinely ignored the concerns of more passive, individual shareholders. Finally, as sophisticated traders with training in portfolio management, fund managers would be able to provide fund investors with steady income and capital appreciation.

The new managed investment funds, however, failed to accomplish the CSRC's goals of reducing market volatility and improving corporate governance. The investment performance of the new funds was poor. Even worse, *Business Finance Review* (*Caijing Magazine*), China's most respected business magazine, reported in October 2000 that fund managers were engaged in widespread market manipulation (Ping, 2000).

The CSRC launched a formal probe into the industry and released details of its investigation in March 2001. The CSRC found that eight out of ten fund-management firms had engaged in improper trading activities. Huaan was one of the funds investigated. Huaan frequently bought and sold stocks between its own funds, an illegal practice that increases stock prices by mimicking strong investor interest. Currently, China has ten fund-management companies that managed 33 closed-end stock funds. Huaan managed four funds with combined assets of $1 billion (Oyama, March 26, 2001). Huaan also bought the stock holdings of another fund-management company at inflated prices in exchange for a cash kickback, a transaction that was not in the best interests of its shareholders. Other violations included insider trading and misleading investors by actively changing the fund's holdings in the 15-day period after the end of each quarter and before the fund reported its end-of-quarter holdings.

After the scandal was publicized, Zhou Xiaochuan, Chairman of the CSRC, vowed to "strike hard against the illegal and improper behavior" of investment fund managers (Gilley, 2000, p. 75). Although the CSRC publicly denounced the illegal activities of many fund managers, its actions sent a different message to investors. Two days following the announcement concerning fund managers' misconduct, the CSRC publicly declared that Huaan had received preliminary approval to launch a new open-end mutual fund on a trial basis, sending a conflicting message to the market (Oyama, March 27, 2001). On the one hand, the

CSRC announced its commitment to reform the fund management industry, while on the other it implied that the CSRC did not consider Huaan's misconduct serious enough to merit censor or a restriction of the fund's activities. In its own defense, Huaan stated that its problems were less serious than those of its competitors.

The Huaan case illustrates how the lack of enforcement results in few restrictions or punishments imposed on violators and the limitations of existing regulations in China governing mutual-fund management. The CSRC has a funds-supervision bureau, but it mainly engages in formulating regulations and approving new funds. Thus, most of the CSRC's attention has been directed at approving the creation of new funds rather than regulating existing funds. A positive side to the case is that the CSRC gave *Business Finance Review* (*Caijing Magazine*) an endorsement for its courage in uncovering the scandal. Anthony Nethoh, a former Hong Kong market regulator who is now the CSRC's chief advisor, had the following to say about the significance of the news break: "An article like this is a good thing because it galvanizes the community – including the regulators and the industry – into action and makes the public more aware of what they should be looking for in a fund" (Gilley, 2000, p. 74).

Such support represents clear progress in the move towards a free business press, and towards alerting regulators to the existence of securities fraud.

The next case provides the details of a major market disturbance that resulted from heavy speculation in China's nascent bond-futures market. The scandal shocked China's financial community, and may be blamed for the CSRC's current reluctance to allow trading in more sophisticated financial products, such as derivatives.

Bond Futures Scandal

Shanghai International Securities Company (SISCO), a large Chinese securities firm, was accused of gross trading violations when it sought to corner the market on a three-year bond, whose futures contracts were commonly purchased by Chinese investors as an inflationary hedge. The price of the bond typically behaved contrary to what most investors in the West would expect: its price increased with inflation, because bondholders receive principal, interest, and an "inflation subsidy" (determined by the government) at maturity. Hence, investors speculate upon the government's inflation prediction, since a higher prediction increases the value of the bond at redemption.

On February 23, 1995, in anticipation of the government's announcement of an increase in the "inflation subsidy" of the bond, trading in the bond's futures contracts increased ten-fold to approximately $100 billion, causing futures prices

to rise. For unknown reasons, SISCO recommended to its clients to sell the bond, and did so itself. Subsequently, SISCO attempted to corner the market by short-selling futures contracts, hoping to drive the market down. The attempt at market manipulation failed, and SISCO teetered on the brink of insolvency, having lost most of its capital (more than $250 million). Henceforth, SISCO received the distinction of being called the "second Barings Bank," in reference to the collapse of England's Barings Bank.

Had the manipulation attempt succeeded, it would have generated gains that not only would have covered the $250 million loss that day, but would also have earned the company an additional $600 million. The transaction was in complete violation of the CSRC's regulations on futures markets. The CSRC was unwilling to look into the matter before the scandal broke out, because the Ministry of Finance typically claimed bond futures as its own jurisdiction, and was reluctant to allow the CSRC to intervene (Roell, 1996b).

The Bond Futures Scandal was the first big financial failure following the CSRC's establishment, and shocked both the domestic and international finance communities. The futures markets in China, which had been very promising at the time, were closed temporarily and have not prospered since. The healthy development of the Chinese securities and futures markets were greatly hampered. The former Chairman of the CSRC was replaced. The government, realizing that regulatory consolidation was necessary, began to decrease the pace of market expansion and increase market regulation.

Following the scandal, the CSRC was granted full jurisdiction over the bond futures market. Although the scandal cost Chairman Liu Hongru his job, he commented that "it took events like this to move things forward in China" (Roell, 1996b, p. 147).

The next case illustrates significant problems with China's regulatory system. The first is the CSRC's lack of independence from other state agencies. The second problem has to do with investors' inability to seek remedies in China's civil court system for losses they incur as a result of corporate malfeasance.

Hainan Minyuan Scandal

Trading of shares in Hainan Minyuan Modern Agriculture Development (Minyuan) was suspended on March 1, 1997. The company was accused of overstating its profits in its financial statements by approximately $150 million. The company was also accused of manipulating the market by making illegal transactions and misleading investors through false news releases. Two of the company's top-ten shareholders, the son and the son-in-law of the former Chinese president, were

high-ranking executives of the company. The company refused to assist the CSRC in its attempt to locate five former directors responsible for the final approval of the 1996 fraudulent annual reports. The CSRC was forced to publish a statement in a top Chinese financial newspaper stating that the company had no obligation to help the CSRC in finding the missing directors. The statement seriously diminished the CSRC's national and international reputation, since the CSRC was seen as yielding under outside pressure. "The regulator [CSRC] seemed to be caught between various political forces working behind the scenes," reported the *China Economic Review* (June 1998, p. 20). The CSRC was criticized for its lack of independence, and investors lost confidence in its ability to control the markets. The loss of confidence was so deep that it has taken the CSRC years to rebuild its image.

This scandal has also damaged investors' interests. Some investors had placed their whole life savings into Minyuan stock. Following the company's delisting, investors were unable to redeem their shares. They waited until 1999 for a government rescue. Approved by the CSRC in July 1999, Beijing Zhongguan Village Technology Co., Ltd., a high-tech giant in Zhonggguan Village, China's Silicon Valley, merged with Minyuan (*Xinhua News Agency*, 1999). After the merger, the stock price of the merged company increased enough for Minyuan's investors to recover their losses.

This case illustrates how regulators such as the CSRC must be independent and free from the influence of other interested parties. This case also illustrates how investors' interests are not protected by China's legal system. The law provides no remedies, and investors must therefore seek recompense through the government. As commented by Anthony Neoh, the CSRC's chief advisor and former Hong Kong market regulator: "We need much more in the civil remedies field. Minority protection and compensation for market abuse should be firmly established" (Loong, 2001, p. 28).

The next case represents the first attempt by the CSRC to bring its regulatory activities more in line with market regulators in other countries.

Shanghai Narcissus Electric Appliances

Shanghai Narcissus Electric Appliances (Shanghai Narcissus) was de-listed by the CSRC on April 25, 2001, after it reported a loss for the fourth consecutive year. The CSRC had recently revised its de-listing rule in February 2001. Now, any company with three consecutive years of losses would be given a twelve-month grace period in which to return to profitability. The company would be de-listed after this twelve-month grace period if it continued to show a loss.

Shanghai Narcissus at one time was China's second largest manufacturer of washing machines, producing one in ten machines sold. The company obtained a public listing in 1993, and in 1997 experienced financial losses. The primary reason behind the company's financial difficulties was its 1995 joint venture with Whirlpool, a U.S. company. By December 31, 2000, Shanghai Narcissus had accumulated debts of $56.2 million. The company reported a loss of $25 million on revenues of $13.3 million for that year. Following the negative earnings reports, China's state-owned banks discontinued any lending to the company. Investors continued to show a strong interest in the company's stock, primarily because a decade of stock trading had taught them that the Chinese government would always come to the aid of an ailing company, and do whatever was required to prevent a de-listing. Consequently, the share price of unprofitable companies typically increases sharply, usually on expectations of government intervention. Thus, in spite of this negative news, investors continued to purchase the company's stock, but because of the de-listing, the stock plummeted following a brief run up.

The case of the de-listing of Shanghai Narcissus represents the first attempt on the part of the CSRC to bring its regulatory activities more in line with market regulators in other countries. In most capital markets, particularly those in the more developed countries, firms are routinely de-listed if they fail to meet minimum standards of financial performance. Such a practice protects unwary investors from investing in firms with no real prospects of future profitability. Rules governing the de-listing of failing firms had been on the books for years, but were never enforced by the CSRC. Enforcement of de-listing rules would have required taking tough action against some state-owned, politically well-connected enterprises, and so the CSRC declined to take action. Thus, this initial de-listing was long overdue.

Although the de-listing of Shanghai Narcissus has been viewed as a move in the right direction, many believe that the CSRC has a long way to go in its efforts to clean up China's capital markets. In the past, the CSRC chose not to de-list several firms that were in a similar financial condition as that of Shanghai Narcissus.

The next case illustrates the need for a regulatory framework in China that is free from the influence of local governments. It also illustrates the problem with the quota-based listing system in China, and the detrimental effects of a lack of regulatory control over corporate intermediaries.

Sichuan Hongguang Scandal

Sichuan Hongguang Company (Hongguang) was founded in 1958, and obtained a listing on the Shenzhen Stock Exchange in June 1997. It is a provincial

manufacturer of electronic components and broadcasting equipment. The company produced China's first color kinescope.

Hongguang caught the attention of the CSRC when it reported on April 30, 1998, a loss of $2.4 billion for fiscal year 1997 (Hongguang has a calendar fiscal year). The loss represented a dramatic change from the profit of $200 million reported just six months earlier in its 1997 semi-annual report. The CSRC suspected that the company had knowingly misstated its financial statements prior to its initial stock offering in June 1997.

An investigation by the CSRC revealed that Hongguang reported net income of $6.5 million in 1996 when it had actually lost over $13 million. Additionally, in its 1997 semi-annual report, Hongguang claimed net income of $200 million, while sustaining an actual loss of $780 million. Furthermore, in its 1997 annual report, Hongguang reported a loss of $2.4 billion, while the CSRC's investigation showed that the company actually lost $2.7 billion for the year. The scandal involved parties besides the company's directors, such as the firm's intermediaries, including a well-known accounting firm. These corporate intermediaries supplied fraudulent official documents pursuant to the company's listing that were supportive of the company's reported results.

In addition to the charge of fraudulent financial reporting, Hongguang was accused of misusing the proceeds of its IPO. The company received approximately $500 million from the June 1997 IPO. Of that amount, only $82.5 million (16.5%) was used for the purposes stated in the company's prospectus. Some of the proceeds were spent to pay down debt, and $185 million (37%) was used for operating expenses, and to cover a loss from investments in securities, the latter being an activity strictly prohibited by the CSRC. At the end of 1997, only $50 million remained.

Hongguang was also accused of bribery. Pursuant to its June 1997 IPO, the company reported $160 million in listing expenses. Actual expenses amounted to $180 million, of which $20 million went towards bribing the company's accounting firm in return for an unqualified auditors' opinion, and bribing Hongguang's local government to secure a listing (CSRC, 1999).

The case illustrates the CSRC's lax regulation of corporate intermediaries. The case also proves that allowing local governments to participate in selecting firms to be listed may be an unwise practice. Hongguang was favored by its local government, and some intermediaries gave a green light to Hongguang under local government pressure. The case illustrates the importance of the CSRC's enforcement activities in identifying malfeasance and punishing those responsible for securities fraud.

The last case we discuss involves the manipulation of stock prices on China's securities exchanges. Although securities markets have existed in China for some time, they are still plagued by price manipulation, primarily due to lax market

regulation on the part of the CSRC. The case further illustrates the limited options open to the CSRC for seeking legal redress from firms or individuals violating the securities laws.

Yorkpoint Science and Technology

Market manipulation is a commonplace activity in China. It has been largely ignored since the establishment of China's stock exchanges. Recently, though, market manipulation has received greater attention due to an increase in lawsuits from small investors and public outcries for the CSRC to enforce market manipulation rules.

Yorkpoint Science and Technology Co. (Yorkpoint) is a diversified company that makes everything from batteries for mobile phones to bird feeders. The CSRC discovered four investment companies in southern China guilty of manipulating the shares of Yorkpoint. These investment companies opened up more than 600 trading accounts and bought nearly 90% of the company's outstanding shares. They were able to push up the value of Yorkpoint's stock more than 20-fold during a two-year period by trading among themselves, pushing the stock to a high of $14.11 in February 2000. This share price was 458 times earnings and the company's market capitalization was over $1 billion. As of May 30, 2001, Yorkpoint traded at $2.84 per share.

The CSRC imposed a $56 million fine on these companies, and confiscated an equal amount of money from their accounts. This was the largest monetary penalty ever imposed in the history of China's securities industry, and illustrated the CSRC's heightened concern for market manipulation. The case, however, has yet to be tried in the courts, as have those cases brought against companies for other violations such as fraudulent financial reporting.

In spite of the penalties imposed by the CSRC, market manipulation continues in China's capital markets. The problem appears to be the CSRC's unwillingness to legally prosecute those found to grossly violate the securities laws, preferring instead to impose fines, which many companies can easily afford. Money used to pay for fines typically comes from the firm's stockholders or out of illegally obtained profits. Unlike in the U.S., where the SEC may seek legal redress in Federal court, in addition to imposing fines and requiring the disgorgement of illegally obtained profits, China's CSRC typically does little beyond imposing fines. Market manipulators simply weigh the costs in terms of fines vs. the benefits of their illegal activity. Thus, the CSRC should consider using legal means in addition to imposing large fines in its efforts to enforce China's securities laws.

Some of these cases occurred prior to the passage of the new Securities Law. Under the new law, the regulatory power of the CSRC has been gradually expanded and the undue influence of other governmental agencies has been greatly reduced.

SUMMARY AND CONCLUSION

This paper examined China's capital markets from the perspective of the Chinese Securities Regulatory Commission (CSRC). This paper discusses the environment in which the CSRC operates. The paper also discusses the CSRC's limitations, its successes and failures, and the underlying reasons for its current policies.

Since its establishment in 1992, the CSRC's performance has been mixed. The survival and development of the CSRC in itself is an achievement – its development has been a trial-and-error process, and it regulates an immature market where government intervention prevails. The central government, at the early stages of the CSRC's establishment, did not formulate a clear strategy as to how the securities market should be developed and regulated and whether the CSRC should continue to exist.

Despite the CSRC's shortcomings, China's regulatory system and operational mechanisms have been greatly improved since its establishment. Mandatory disclosure requirements have generally raised the quality of accounting information. The filing and disclosure requirements are getting closer to those found in more developed countries. Meanwhile, the CSRC has increased its efforts to protect investors and prevent fraudulent reporting. Overall, the CSRC's efforts have helped to reduce illegal practices, remedy market weakness, improve disclosure quality, and smooth out market operations.

A significant gap, however, still exists between the CSRC and some more advanced regulators such as the U.S. SEC, especially with regard to information and regulation transparency, stock offering mechanisms, investor protection, and resources to be utilized. In addition, even though the Chinese Securities Law was passed on July 1, 1999, a clear, integrated and reliable system of regulations and laws has yet to be established.

Two recent accomplishments of the CSRC are worth mentioning. First, the chairman of the CSRC, Zhou Xiaochuan, appointed in 2000, declared that the CSRC plans to gradually abandon the quota-based system unique to China and replace it with a western-style system where underwriters take more responsibility for new stock issues. The CSRC also declared that it would refrain from becoming involved in pricing issues in the secondary market (*WSJ*, January 10, 2001).

Undoubtedly, the CSRC will experience growing pains as it moves onto the world stage. With its authority confirmed by the 1999 Chinese Securities Law, and

with experience gained from regulators in other developed and developing capital markets, the CSRC's healthy development and long-term survival seems assured.

This study has at least two implications. First, the examination of the CSRC may be of interest to local and international investors who want to invest in the Chinese securities market. They can benefit from information on how the CSRC regulates the market, and from information concerning the possible benefits and risks of investing in China's capital markets. Second, this paper provides some insight into how national and international policy makers approach the regulation of emerging capital markets.

NOTES

1. According to a recent article, China has planned to combine Shanghai and Shenzhen Stock Exchanges into one exchange, to improve market regulation (Leggett, June 7, 2000).
2. In June 2000, Liang Dingbang, the chief advisor to the CSRC, speaking in Hong Kong, stated that A and B-shares will be merged in two or three years (*AsiaPulse News*, August 16, 2000).
3. An issuer of B-shares must, besides satisfying requirements stated in the securities regulations, meet the following conditions: (1) it must have obtained approval from the relevant authorities for its use of foreign investment; (2) it must have a stable and adequate source of foreign exchange income and the total amount of its annual foreign exchange income must be sufficient to pay for the annual dividend; and (3) the proportion of B-shares to the total number of shares in a company that has been restructured from a state enterprise into a joint-venture or private enterprise, must not exceed the ceiling determined by the relevant authority (for more information, see Su, 1999).
4. More than 90% of B-share firms choose the Big Five as their auditors.

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APPENDIX

Case Summaries

Case	Huaan Scandal	Bond Futures Scandal	Minyuan Scandal	Shanghai Narcissus Scandal	Hongguang Scandal	Yorkpoint Scandal
Firm	Huaan Mutual Fund	Shanghai International Securities Company	Hainan Minyuan Modern Agriculture Development	Shanghai Narcissus Electric Appliances	Sichuan Hongguang Ltd. Company	Yorkpoint Science and Technology
Year	2000	1995	1997	2001	1998	2000
Fraudulence or unusual aspects	Market manipulation	Market manipulation	Overstated profits	Consecutive loss for 4th year	Fraudulent financial reporting	Share price was manipulated by four investment companies closely related to Yorkpoint
	Insider trading	Trading violations	False news releases	Stock price soared even after disclosure of poor financial performance	Fraud on official documents	

	Misleading investors		Illegal market transactions		Corruption Misuse of funds	
Loss and effect	Damaged investors' confidence	$250 million Futures market depressed since scandal CSRC's chair resigned	Trading in Minyuan shares was suspended until 1999 Small investors suffered losses	Investors incurred losses when government did not intervene	90% of IPO funding was misused and wasted Investors suffered losses	Investors suffered losses as price per share fell from $2.84 to $0.46
CRSC's enforcement response	Publicized misconduct Sent conflicting message	Failed to enforce before scandal broke	CSRC yielded under outside pressure	First company delisted by CSRC	Immediate and successful	$56 million fine Prosecuted four firms
Regulation problems reflected	Pervasiveness of fund fraud	Jurisdictional conflicts	CSRC lacks independence	Unequal treatment to distressed companies	IPO mechanism encourages fraud, bribery, and fund abuses	Market manipulation largely ignored by CRSC

APPENDIX (*Continued*)

Case	Huaan Scandal	Bond Futures Scandal	Minyuan Scandal	Shanghai Narcissus Scandal	Hongguang Scandal	Yorkpoint Scandal
	Unbalanced fund supervision function	Lax supervision of market operations	Investors lack civil remedies for losses	Policy dilemma: rescue or enforce?	Lax regulation over corporate intermediaries	Limited options open to CRSC for seeking legal enforcement and investor protection
	Light punishment					
Positive aspects reflected	CSRC gave press clear endorsement to uncover security scandals	Since scandal, jurisdictional conflicts have been reduced		Significant move in right direction	CSRC played an active role in exposing the scandal	Largest monetary penalty ever imposed
						Investors sought legal protection

THE ENTERPRISE ACCOUNTING SYSTEM OF VIETNAM AND UNITED STATES GENERALLY ACCEPTED ACCOUNTING PRINCIPLES: A COMPARISON

David C. Yang and Anh Thuc Nguyen

ABSTRACT

In response to major changes in its socioeconomic environment, the Vietnamese government promulgated the new Enterprise Accounting System (EAS) on November 1, 1995, effective from January 1, 1996. The EAS lays the foundation for the conformance of Vietnamese financial reporting to the international standards and standards of developed countries. This paper highlights major similarities and differences between U.S. Generally Accepted Accounting Principles and the Vietnamese EAS.

OVERVIEW OF DEVELOPMENT OF VIETNAMESE ACCOUNTING SYSTEM

Over the last few years, with the recognition of the importance of accounting as an information channel supporting the investment and business decision-making process, the Vietnamese accounting system has been frequently improved to keep up

Advances in International Accounting
Advances in International Accounting, Volume 16, 175–204

ISSN: 0897-3660/doi:10.1016/S0897-3660(03)16010-2

with profound economic changes and developments in Vietnam. Since its inception in 1954, the Vietnamese accounting system has undergone three major periods:

- Period 1 (from 1954 to 1987): The accounting system was first built with the assistance from China and the former Soviet Union. Accounting policies and procedures were promulgated specifically for individual industries. The chart of accounts as well as accounting methods, financial reports, initial records, budgeting and accounting books were all prescribed by the Ministry of Finance.
- Period 2 (from 1988 to 1994): The accounting system was changed to meet the new demands of state management when Vietnam started renovating its economy and changing from a centrally planned to a market-oriented economy. Yet, Vietnam still maintained what is called a "closed chart of accounts," which gave little room for companies to devise types of accounts necessary for the management of its business. The accounting system was basically renovated to suit the transition period to the multi-sector market economy and the establishment and expansion of the economic relationship with international markets. The major feature of this new accounting system was the uniformity of a nationwide accounting system that increased the comparability of financial information across companies of every sector and industry. Furthermore, the accounting system was extended to cover various sectors other than the state sector and included foreign-invested enterprises as well. The cash basis, rather than the accrual basis, was applied.
- Period 3 (from 1995 until present): The economic renovation achieved great success, with a GDP growth of around 8% per annum during 1990 and 1997 (see http://www.worldbank.org), and the integration of Vietnam into the world economy. This was marked by Vietnam's membership into ASEAN, and then ASEAN Free Trade Area or AFTA. To keep up with the new requirements of economic development, the accounting system in Vietnam was fundamentally renovated to be in line with those of the developed market economies such as the U.K., France and the U.S. as well as international practices. The new accounting standards were promulgated by the Ministry of Finance in November 1995, with the view to further simplify the accounting system and improve transparency, controllability and supervision. The new accounting system, called the Enterprise Accounting System (EAS), is required for every company (except those in the banking and financial industries), including those of foreign investors.

With the bilateral trade agreement recently signed with the U.S. and the official stock market recently coming into operation, Vietnam is expecting to pool more investment from domestic as well as foreign sources. As a result, the reliability and comparability of financial statements produced under the EAS is of great concern to potential investors. Vietnam is, therefore, currently proposing new modifications of

and additions to the EAS to comprehensively incorporate international accounting standards issued by the International Accounting Standards Committee (IASC).

This paper compares the new EAS with U.S. Generally Accepted Accounting Principles (GAAP), and discusses some major similarities and differences.

MAIN FEATURES OF VIETNAMESE ACCOUNTING SYSTEM

As a product of the economic renovation initiated in 1986, the Vietnamese market economy has its own unique features as a result of the incorporation of the market economy mechanism and the legacy of a centrally planned economy pursued for more than 30 years. The economy was characterized by the Vietnamese government as a "market-oriented economy with state management." The state management aspect is present in the new Vietnamese Accounting System in that its main financial reporting focus is government and related agencies and its purpose is to set the standard forms and other disclosures for easy compilations and comparatives by the authorities. Also, as specified in the EAS, there are many cases where a company should wait for decisions of appropriate authorities to determine an accounting treatment.

Unlike U.S. GAAP, which is a set of accounting standards and principles, the EAS is more like a bookkeeping manual. It provides recording guidance for the most popular types of transactions. The EAS promulgates a codified chart of accounts, a set of rules for accounting and a predetermined format of financial statements, accounting books and journals, source documents with the view to improve comparability of financial statements. The EAS makes them easily understood to state agencies and results in higher efficiency of state management.

The EAS is driven by taxation and state sectors. Many provisions in the EAS are required for state companies while they are optional to other sectors (except those relating to tax). The reporting and disclosure requirements such as the division of owners' equity into separate funds, the disclosure of expenses by factors (i.e. material costs, labor costs, depreciation, costs of out-sourced services, etc.) and the disclosure of the income level of employees, etc. are all designed to serve the management and statistics of the state, given the difficulties of collecting information for those purposes.

The modifications of and additions to the current EAS so far were purported to be in line with taxation reporting and financial regulations prescribed for the state sector. As prescribed in the EAS, the tax agency is one recipient of a company's financial statements. When an accounting treatment or entry is confronted by tax authorities, companies may have to modify their statements accordingly. Another

factor that increases the synchronism between the EAS and tax regulations is the participation of the tax department in the drafting of the EAS as a consulting body to the Ministry of Finance.

Through the reading of provisions included in the EAS, "smooth income" characteristics can be found. For instance, the EAS provides tools and supplies, including equipment that can be used for more than one year or business cycle, should be accounted for as materials and be expensed, rather than depreciated. The guidance for the record in Account 142, Prepaid Expenses, states that tools that can be used for more than one accounting period and requisitioned with *great volume* during the first accounting period should be *allocated* gradually to related products, rather than expensed immediately as specified in the guidance for the record of Account 153, Tools and Supplies. Thus, for the same tools and supplies, different accounting treatments are applied, dependent upon the quantity used, to avoid substantial charges to expenses in one period while having less charges in the other, causing a big fluctuation of income.

In another instance, the EAS differentiates the repair and maintenance of fixed assets, which should be considered normal expenses to maintain the designed capacity of the assets, from the upgrade of fixed assets, which should be recorded as an addition to the value of the assets. The guidance in Account 142, Prepaid Expenses, provides that a prepaid expense should be recorded in the case where substantial repair costs were incurred. Here, different accounting treatments are also applied to activities of the same nature but at different levels.

In the case where selling, general and administrative expenses have been incurred during the accounting period (for enterprises with long business cycles) when little revenue is earned, such expenses can be deferred and closed to prepaid expenses and later on allocated to future periods. The purpose of this treatment is clearly to decrease the amount of losses recorded in the period such expenses were incurred while, at the same time, decreasing the income in the next period when the deferred expenses are allocated. Thus, the gap between the two periods is narrowed down. However, such treatment raises the question of compliance with the matching principle as those deferred costs may not produce revenues in the period they are expensed.

U.S. GAAP AND VIETNAMESE EAS

Accounting Assumptions and Conventions

U.S. GAAP is based on a set of accounting assumptions and conventions. Among those, the most important are economic entities, going concern, period of time,

monetary unit, and conservatism. In the EAS, such accounting assumptions are not explicitly mentioned. However, some of the accounting assumptions are somehow implicitly (but not comprehensively) expressed through the definitions of items and recording guidance in the EAS. Specifically, regarding the monetary unit convention, like U.S. GAAP, the EAS prescribes the use of the national currency in bookkeeping as well as in the financial statements. However, U.S. Statement of Financial Accounting Standards (SFAS) No. 89, Changes in the Purchasing Power of the Currency, is not mentioned in the EAS. The requirement of using the local currency as the currency of reference is believed to increase the comparability between Vietnamese firms and foreign invested enterprises. It is also considered an effort of the Vietnamese authorities to affirm the position of the national currency, which has for many years been noted for its instability. This has led to the domination of foreign currencies, especially U.S. dollars, in most transactions. However, given the long history of inflation of the Vietnamese currency, the prescription of using Vietnamese dollars (VND) in the accounting books of companies has faced a lot of criticism as VND is a non-convertible currency.

On the accounting period assumption, similar to U.S. GAAP, the EAS considers a year as a regular accounting period and the determination of a fiscal year for a company is left open to the company. Prior to the new EAS in 1995, a calendar year was specified as an accounting period. However, unlike U.S. GAAP, the EAS mandates the preparation and submission to government agencies of quarterly reports in the 3rd, 6th, 9th, and 12th months commencing from the first day of the accounting year. The submission deadlines are prescribed to be within 15 days and 30 days from the end of the accounting periods for quarterly and annual reports, respectively. This requirement results in the submission of unaudited reports, which are less credible than audited ones and gives rise to the differentiation between domestic and foreign invested entities as foreign invested enterprises are required by the prevailing Law on Investments to submit audited reports to state authorities.

On the entity assumption, the EAS only stops at the requirement that every independent enterprise (i.e. an enterprise which is not a subsidiary) has to prepare and submit to government agencies financial statements under the EAS. No consolidation accounting is mentioned like in U.S. GAAP. Thus, it is not clear how a company should account for its investment in another company. Usually, in U.S. GAAP, an investment of over 50% in the investee requires consolidation to truly reflect all the resources a company can control. In Vietnam, however, there is no such requirement. The determination of when a consolidation is required in Vietnam may be more complicated than in the U.S. as there are regulations influencing the control over a subsidiary (or joint venture) by minorities. For domestic investment, ownership seems to be the decisive factor determining

control. However, for Vietnamese investment in foreign invested companies, Vietnam has regulations protecting the decision-making power of the Vietnamese party regardless of its ownership in the investee. These regulations derive from the fact that as a result of a shortage of capital, Vietnamese parties (many of them are state companies) often enter into joint ventures with foreign investors with less than 50% ownership. If regular rules were applied, the Vietnamese parties would have no control over the investees and thus, would be subject to foreign partners' decisions. This is considered to be harmful to the Vietnamese parties. As a result, the government of Vietnam specifies in the Law on Foreign Investment the participation of Vietnamese parties in the investees' management board and cases where the Vietnamese parties can have the right to influence a decision of the management board. Thus, in a joint venture with foreign investors, a Vietnamese investor may have control in excess of its level of ownership. In such a case, the specification of using the cost method to account for investment in a joint venture (Account 222, Joint Venture Investment, Circular 1141 QD/CDKT of the Ministry of Finance dated November 1, 1995) seems to be inappropriate to reflect all of the resources under a company's control.

According to U.S. GAAP, conservatism should be applied when there is a degree of skepticism. Conservatism means that whenever several possibilities exist, the worst scenario should be accounted for. Such a conservative approach seems to be implicitly applied in the EAS, by the requirement of establishing provision accounts for the declination of asset values due to various causes such as permanent price decreases, bad debts, etc. Nevertheless, as conservatism is not explicitly set as a principle for accounting, there are many cases where conservatism is not applied such as in the accounting for possible loss, upward revaluation of assets, etc.

Basic Principles

Matching and Accrual Accounting

On the matching and accrual accounting convention, the new EAS prescribes the use of prepaid expenses and accrual expenses, which purports to match expenses against revenue. This is a significant change of the EAS, as the cash basis was widely adopted in previous years.

Realization and Recognition

The realization and recognition convention is only partly mentioned in the EAS, in that the EAS specifies when revenue can be recognized. In general, the recognition of revenue in the EAS is similar to U.S. GAAP. In U.S. GAAP (i.e. FASB

Statement of Financial Accounting Concept No. 5 "*Recognition and Measurement in Financial Statements of Business Enterprises*," paras 63 and 83), revenue is usually recognized at the point of sale since at the point of sale the company has substantially completed what it must do to be entitled to the benefits received (or to be received). Thus, revenue is considered to have been earned. Also, at the point of sale, realization occurs. In the EAS, revenue is recognized when the goods have been determined to *have been sold*. "Have been sold" means that the goods comply with the customer's requirement and has been paid for or accepted to be paid for by the customer. However, in some cases, the EAS seems to be stricter in the recognition of revenue when it states that revenue can *only* be recognized when the goods have been sold. U.S. GAAP provides room for the advanced or delayed recognition of revenues such as the advanced recognition of revenue at the completion of production if a fixed selling price has been established. In addition, there is no limit to the amount that can be sold or to the delayed recognition of revenue in the case of high uncertainty of the collectibility of revenue. Also, the EAS provides further that only when the goods have been delivered to the customer, can revenue be recognized. Thus, even though the invoice has been issued and the goods have been paid for, no revenue is recognized so long as the goods have not yet been delivered to the customer. The receipt of cash only reduces the net debit balance of accounts receivable. This provision matches the shipment of goods with the point of sale, which should be separate as it is not the physical delivery of the goods, but the transfer of ownership and risk over the goods that serve as evidence of the goods having been sold.

Full Disclosure Principle

The FASB conceptual framework recognizes that it is impossible to report all relevant information in the principal financial statements. Thus, it is left up to management's best judgment to decide what should be disclosed to satisfy the full disclosure principle, taking into consideration materiality and the costs and benefits of the information given.

Under the EAS, the full disclosure principle is not mentioned. However, to achieve the purpose of having companies adequately disclose their financial and operational status, the EAS provides a list of information to be dislosed as well as the format in which that information should be disclosed. Financial statements under the EAS include: (i) a balance sheet; (ii) an income statement; (iii) a statement of cash flows; and (iv) footnotes to the financial statements. However, it should be noted that, the purpose of footnotes to the financial statement is mostly designed to provide information to state management authorities such as those of tax, investment supervision and statistics rather than to other types of external users.

Accounting Elements

Assets

Similar to U.S. GAAP, assets under the EAS are grouped according to their liquidity with three major categories: current assets, fixed assets and long-term investments.

Cash. Cash under U.S. GAAP consists of cash on hand and cash at the bank. Vietnam adds a third category of cash with the view to easily administer the cash situation of a company called cash in transit, which reconciles the difference between cash on the book and the bank's statement. Furthermore, in Vietnam, cash also includes also gems, gold and silver, which may be considered as an investment under U.S. GAAP. This classification results from the fact that in previous years, and to a smaller extent, until recently, gold is some time used as cash in payment.

Short-term investments. Short-term investments under the EAS include bonds, shares and other securities that can be exchanged for cash within one year. This classification is equivalent to that of U.S. GAAP. However, the valuation of short-term investments under the EAS and U.S. GAAP are different. Under the EAS, historical cost is used to account for short-term investments. The historical cost of a security is its actual purchase price plus investment costs such as brokerage, tax, bank fees, etc. At the end of the accounting year, if there is a decline in the market price of the security, a separate account for the provision for such a decline may be established. Under U.S. GAAP, securities are classified in three categories: trade securities, available for sale and held to maturity securities, and the accounting method for each category is different. If a security is to be sold within a short period of time and therefore, is classified as a trade security, it will be accounted for at its market price and the unrealized gain or loss will be reflected in the company's net income. If a security is classified as held to maturity, it will be recorded at its historical cost. And finally, if a security is neither a trade nor a held to maturity, and therefore, is an available for sale security, it will be recorded at its market price and the unrealized gain or loss will be added to or deducted from the company's owners' equity. Also, under U.S. GAAP, the difference between a bond's face value and its acquisition price (a premium or a discount) is amortized over the life of the bond and the amortized amount will increase or reduce the interest revenue recognized. Under the EAS, such a difference will be deferred until the bond is either sold or due and is then recognized as financial income or an expense.

Accounts receivable. Similar to U.S. GAAP, the EAS prescribes the use of the allowance approach to value accounts receivable. However, U.S. GAAP and the

EAS have different reasons for the use of such an approach. Under U.S. GAAP, because of the adherence to the matching and accrual principle, allowance for doubtful debts is required to match the bad debt expense incurred with the revenue generated in the same accounting period. Under the EAS, the allowance (referred to in the EAS as Provision for Doubtful Debts) is set up to avoid an upheaval change in income as a result of substantial bad debts written off in the period it occurs.

Inventory. The EAS adheres to the historical cost principle for the accounting treatment of inventory. However, to cope with the possible impairment of the inventory price, the EAS prescribes the use of a Provision for Inventory Price Decline Account. The provision account is established at the end of the accounting period if there is evidence that the price of inventory has permanently declined. The account will then be closed to administrative expenses for the same accounting period. If the provision to be established for the current period is less than the provision set up for the previous one, extraordinary income is recognized. This accounting practice is different from the lower of cost or market price approach applied to the accounting for inventory under U.S. GAAP. To consistently follow the conservatism principle, U.S. GAAP prescribes the valuation of inventory at the lower of its historical cost or market price at the end of the accounting period. The written-down amount (if any) of inventory will then be closed to cost of goods sold, rather than administrative expenses, for the current period by using either the direct method or the allowance method.

The valuation of inventory flow in the EAS seems to parallel that of U.S. GAAP with the method specified to be one of the following: specific identification, weighted average, moving average, FIFO or LIFO. U.S. GAAP, nevertheless, provides an additional method to be used when high inflation occurs, named the Dollar Value LIFO method. This method is basically the same as the simple LIFO one except that it takes into consideration the cost indices of relevant periods to arrive at the value of inventory.

Cash discounts and cost of inventories. A cash discount is the discount granted for prompt payment of goods and services purchased. Under U.S. GAAP, the discount can be recorded by two methods: gross price or net price. In the gross price method, the purchase is recorded at the gross price and the amount of the discount is recorded in the accounting system as a deduction from the acquisition cost of the inventory only if the discount is taken. In the net price method, the purchase is recorded at its net price and therefore, if the discount is taken, it is already included in the cost of the inventory. The net price is preferred, especially when the discount is substantial, as it is considered to better reflect the cost of the goods acquired. The cost of not taking the cash discount does not increase

the benefits from the goods and therefore, as suggested by FASB, should not be included in the cost of inventory.

According to the EAS provisions, purchases should be accounted for under the gross price method (as purchases are initially recorded at the invoice price) and then, if any cash discount is taken, the discount will be recorded as income from financial activities. On the seller's part, such cash discount will be recorded as an expense for financial activity rather than as a deduction of revenue as in U.S. GAAP. (Circular 120/1999/TT-BTC of the Ministry of Finance dated October 7, 1999.)

Fixed assets. Fixed assets in the EAS include both tangible and intangible assets that are being used, are greater than VND 5,000,000 in value (about USD 360 at the rate of around VND 14,000/USD) and can be used for more than one year or one business cycle. In the United States, assets which can be used for more than one year or business cycle are basically classified as property, plant and equipment (PPE), if tangible, or intangible assets. There is no limit set on the value of assets to be capitalized.

This limit on the value of an asset provided for in the EAS gives rise to the classification of equipment, whose value is less than VND 5,000,000 individually, to be classified as another type of asset (tools and supplies). Tools and supplies are accounted for in the same way as inventory. Thus, even though they are used for more than one year, they are not depreciated and are expensed immediately within the first accounting period.

Also, the EAS prescribes some exceptions to the current requirements of fixed assets whereby, even though the two criteria are met, such assets still cannot be considered as a fixed asset but rather, as "Tools and Supplies." Those assets include temporary construction structure, ceramic and china tools, containers, etc.

The historical cost principle is unanimously adopted by U.S. GAAP and the EAS. The historical cost of an asset includes the purchase price and other costs necessary to prepare the asset to be ready for use.

Depreciation of an asset. Depreciation of an asset is defined as "a systematic allocation of the cost of a fixed asset to operational expenses over its useful life" in both U.S. GAAP and the EAS. The cost of a tangible fixed asset can be allocated to different accounting periods using the activity-based (for example, on the basis of mileage for transportation equipment) or time-based (for example on the basis of the number of years an equipment can be used) method under U.S. GAAP. Furthermore, depreciation allocated using the time-based method can be either accelerated or straight-line. Depreciation of an intangible asset should be straight-line with a useful life of less than 40 years depending on the type of the asset. Under the EAS, depreciation for any kind of fixed asset should be straight-line over the life of the asset. The ranges of useful lives of

various assets are provided for in the EAS (Decision 166/1999/QD-BTC of the Ministry of Finance dated December 30, 1999). The residual value of an asset is not mentioned in the prescribed formula for the calculation of depreciation and therefore, it is assumed that the asset will have a book value of zero at the end of its useful life.

Mortgaged assets. The EAS requires mortgaged fixed assets to be excluded from fixed assets and transferred to an account called mortgaged assets. The EAS does not clearly define the difference between a mortgage and a pledge and therefore, seems to consider a mortgaged asset out of the production process of the mortgagor. Thus, no depreciation of the mortgaged asset is recorded. In fact, there are cases where the mortgagor can still use the mortgaged assets for its normal course of production and therefore, depreciation of the asset should still be recorded as a normal PPE. The mortgage, under U.S. GAAP, should be disclosed in the footnotes while the asset is still included in PPE on the balance sheet as it is still owned by the company.

Sale of a fixed asset. Under the EAS, when a fixed asset is sold, the cash receipt is recorded as extraordinary income while the un-depreciated value of the asset is considered an extraordinary expense. Exceptionally, when a fixed asset is sold because of an unrecoverable damage, the difference between the selling price and the un-depreciated value will be recorded as a loss from fixed asset liquidation. This bookkeeping practice is different from U.S. GAAP, which records, in essence, the difference between these two amounts as a gain or loss.

Intangible fixed assets – land. According to Marxism, land is not supposed to be owned by any individual or business but rather, land belongs to the State. Thus, a business can only have the right to use land over a period of time. Such a right to use land is classified as an intangible asset. Any expenses incurred to obtain such land use right and prepare the land ready for use will be added to the value of the asset. The value of the right to use land is considered to be part of the State Fund granted to the company even though it is not reflected in the financial statements of a State company. Whenever a company enters into a joint venture with foreign investors and contributes its legal capital portion in the form of the right to use land, the value of the contribution will be determined according to a framework prescribed by the Ministry of Finance. The value of the land use right will then be recorded as an intangible fixed asset and depreciated over the life of the joint-venture contract (Circular 166/1999/QD-BTC of the Ministry of finance dated December 30, 1999). Under U.S. GAAP, as land can be owned by individuals and private businesses, land is considered to be a tangible fixed asset of a company but is not depreciated as other types of assets are.

Goodwill. Goodwill is the excess of the purchase price over the market price of identifiable net assets of a company. Goodwill occurs when there is an acquisition or a combination of two companies. According to U.S. GAAP, companies can keep goodwill on the book until it has impaired, or if it drops in value. Companies have to test at least annually for impairment of goodwill by comparing the fair value of the related assets with their recorded amounts. Under the EAS, goodwill will be amortized over its amortization period ranging from 5 to 40 years (the EAS, however, uses the term "actual price" instead of "market price" of a tangible fixed asset, which gives rise to the confusion with book value of the asset initially recorded at its *actual purchase price*).

FASB Statement of Financial Accounting Standards No. 142 under U.S. GAAP provides further the accounting treatment for negative goodwill. Negative goodwill should be recorded as an extraordinary gain. In the EAS, there is no such provision and it is understandable given the fact that the stock trading in Vietnam is not yet developed (the first stock exchange just came into operation in late July 2000) to warrant such an acquisition.

Research and development (*R&D*). Under the EAS, R&D expenses are defined as the costs paid by a company for the research, exploration and preparation of long-term investment plans to bring about long-term benefits to the company. R&D expenses, therefore, are considered to be intangible assets and are amortized over their useful lives within the range of 5–40 years. This approach is entirely different under U.S. GAAP. Under U.S. GAAP, given the difficulty in determining how much revenue R&D expenses will generate in the future as well as the difficulty in determining the length of the benefits obtained from incurring such expenses, R&D costs are expensed immediately.

Such a difference in the accounting treatment of R&D expenses gives rise to the difference in accounting for internally developed patents. Under the EAS, the value of an internally developed patent consists not only of the costs incurred to apply for the patent as prescribed in U.S. GAAP, but also all of the expenses incurred for the research work, including trial productions and inspections relating to the research project. This accounting practice in the EAS will produce more relevant information in regard to the value of the internally developed patent. For an externally acquired patent, the two systems follow the same historical cost approach.

Deferred tax assets/liabilities. The major difference between the EAS and U.S. GAAP is that the EAS was issued with the assistance from tax agencies to aid the calculation and verification of tax obligations. Accounting treatments prescribed in the EAS will also be used for the purpose of determining the amount of tax

payable to the State. Thus, unlike U.S. GAAP, which is developed separately from tax regulations, there is no temporary difference between book and tax amounts and consequently, there is no deferred tax assets/liabilities account in the financial statements prepared under the EAS.

Liabilities

Loans. According to U.S. GAAP, loans are recorded at their face amount. In the case of a discount or premium, a contra-account to a loan (or bond) payable will be set up. The discount or premium on a loan (or bond) payable will be amortized to expenses using the straight-line or effective interest method. Under the EAS, a loan (or bond payable) is recorded at historical cost. No premium or discount account is established and therefore, there is no amortization of the premium or discount on a loan (or bond payable). Interest expense is recorded at the nominal rate.

Accrued expenses. Under U.S. GAAP, accrued expenses are those costs which have not yet been paid but are considered to have been incurred to produce revenues during the accounting period and therefore, in light of the matching principle, should be considered expenses during that period.

Accrued expenses in the EAS seem to be more like forecasted expenses than incurred expenses as it includes forecasted expenses for future repairs of fixed assets, seasonal breaks in production, warranty expenses, planned outsourced services, etc. In the definition of this type of expense, the EAS states that accrued expense is an expense that has not yet been incurred but will be incurred in the future. This is entirely different from the definition of an accrued expense under U.S. GAAP, which says that it is an expense that has already been incurred. The purpose of recording an accrued expense is, as explained in the EAS, to avoid any extraordinary and substantial expense incurrence.

Furthermore, as accrued expenses are forecasted expenses, the actual expenses incurred later on may be different from the accrued ones. In such a case, the difference between the accrued expense and the actual expense incurred will be recorded as a reduction of expense.

Payables – trade. The EAS prescribes different treatments for advances. If an advance is made to a supplier, it should be debited to the payable account (and therefore, reducing the payable). If an advance is made to anyone else, it should be debited to the advance account on the balance sheet. Thus, if later the contract is canceled, the advance amount will be credited to the payable (and therefore increasing the payable). Though the net effect on accounts payable is zero, the transactions are not accurately reflected. Under U.S. GAAP, the same treatment applies to every advance.

Contingencies. "A contingency is defined as any existing condition, situation or set of circumstances involving uncertainty as to a possible gain or loss of an enterprise that will ultimately be resolved when one or more future events occur or fail to occur" (FASB Current Text, 1995, Volume 1, p. 8301). Depending on the level of uncertainty on the occurrence of such an event, U.S. GAAP requires different levels of disclosure. For an event that is probable in nature and for which the liability amount can be reasonably estimated, a contingent liability should be established. In the absence of any of the two above conditions, a footnote disclosure is required. Under the EAS, no such accounting procedure is required for a contingency.

Owners' Equity

The EAS defines owners' equity as the capital which is owned by the owners of the company and which is not a payable of the company. Owners' equity is divided primarily according to its purpose, not its source. Specifically, owners' equity is divided into:

- Capital Resources for Business – Comprised of contributed capital and profits from the company's operations.
- Revaluation of Assets – Reflects the difference in the value of assets as a result of revaluation.
- Foreign Exchange Difference – Reflects both transactional and translational foreign exchange differences.
- Investment and Development Fund – Formed from the profit of the company and will be used for business expansion, investment and research and development activities of the company.
- Reserved Fund – Established from the retained earnings of the company and will be used in the case of loss, natural and other disasters.
- Fund Reserved for Unemployment Benefits – Formed from the retained earnings of the company and is used to make allowances for those unemployed individuals who previously worked for the company and to pay for the retraining of the company's employees.
- Undistributed Profit – The aggregate profit of the company that is not yet allocated to respective funds.
- Bonus and Welfare Fund – Established from the profit of the company and is used for awards and the improvement of employees' lives.
- Capital Construction Fund – Formed from contributed capital, capital from the State or profit of the Company. This fund is used for capital construction and the purchase of fixed assets.

Such a division of owners' equity in the EAS is entirely different from that of U.S. GAAP where owners' equity is classified according to the origin of the funds. Such

classifications include contributed capital (common stock and additional paid-in capital), retained earnings, unrealized gains or losses, etc. As contributed capital and retained earnings are mixed in the EAS, it is not easy to see if a company is operating successfully by looking into the changes in equity as it is not known whether it is from contribution or profit.

In regard to the foreign exchange difference account, the EAS initially prescribed that the ending balance of this account can be closed to either an owners' equity account as a deduction, to the business capital account as an addition or to the income summary as financial income or an expense depending on the decision of an appropriate authority. The provision was recently clarified as it explicitly requires the inclusion of realized gains or losses in net income and unrealized gains or losses in the company's owners' equity. In U.S. GAAP, foreign exchange differences are separated into transactional and translational differences. The transactional differences will be closed to the related asset/liability and income statement account while translational differences are reported on the balance sheet.

Reassessment of assets. The EAS states that an asset may be reassessed upon the decision of an appropriate authority or when this asset is part of the capital contribution in a joint venture. Assets subject to reassessment are primarily fixed assets but, to a small extent, may include other assets if considered necessary. In practice, this provision applies primarily to State companies. The value of the asset can be either increased or decreased. Under U.S. GAAP, such a practice is not allowed if the asset is reassessed to a higher value as the result of adherence to the conservatism principle.

Bonus and welfare funds. Under the EAS, this account records employees' benefits that will not be tax deductible such as vacation payments, community activities, awards, etc. Such an item in U.S. GAAP will either be recorded as a liability if the obligation is probable and the amount can be reasonably estimated or an expense when it incurs.

Income Statement Accounts

U.S. GAAP provides clear definitions to differentiate the terms revenue, gain and income (FASB Statement of Financial Concepts No. 6). Revenues are increases in the assets of a company or decreases in the liabilities during a period from delivering or producing goods, rendering services, or other activities that are a part of the company's ongoing major or central operations. Revenues are recognized when they have been realized and they have been earned. In contrast, expenses are decreases in the assets of a company or increases in the liabilities during a period to generate such revenues. Gains and losses are similar to revenues and expenses

except that they result from peripheral or incidental transactions. Net income will be determined by the formula:

$$\text{Net Income} = \text{Revenues} - \text{Expenses} + \text{Gains} - \text{Losses}$$

Also, an extraordinary item under U.S. GAAP is construed as an event or transaction that is unusual in nature and infrequent in occurrence.

The EAS does not provide such definitions. Gains are not netted and are included in *extraordinary* income while losses are included in *extraordinary* expenses. Also, as there is no definition of income, income is sometimes determined differently. For example:

- When the ending balance of the Provision for Declines in Investment is greater than the provision necessary for the next accounting period, the difference should be recorded as income. In fact, the difference reflects the over-expense and should be recorded as a decrease in expenses. A firm cannot record an amount as an expense and then reverse and record it as income. The same practice applies to every provision account under the EAS.
- When the expenses for major repairs of fixed assets have not been incurred but have already been allocated to administrative expenses are greater than the actual expenses incurred, the difference will be recorded as extraordinary income.
- When a lease transaction was canceled but the company has already recorded a VAT tax expense and a VAT tax payable on the unearned revenue (VAS prescribes the record of VAT tax whenever a revenue and unearned revenue is recorded), the VAT tax retrieved by canceling the transaction (and therefore returning the amount of unearned revenue previously recorded to the client) will be recorded as extraordinary income. (Circular 120/1999/TT-BTC of the Ministry of Finance dated October 7, 1999.)

The EAS states that unearned revenue can only be recorded for the advance amount paid by the client for work that has been provided to the client such as an advance payment of office rent in the case that the office has been transferred to the client. In the case of advances for work not yet performed, the advance amount cannot be recorded as unearned revenue, but is credited to accounts receivable instead. Under U.S. GAAP, the amount will be credited to unearned revenue, which is a liability account.

Reporting Requirements

Unlike under U.S. GAAP, the EAS does not require but instead encourages the preparation of a cash flow statement. The balance sheet (see Appendix 1)

and income statement (see Appendix 2) disclose the financial status and results of operations at the beginning and at the end of an accounting period. This is equivalent to the requirement of two years' disclosure for the balance sheet in the U.S., but different with the requirement of three years disclosure for the income statement. The format of the balance sheet and income statement under the EAS is similar to a regular balance sheet and income statement prepared under U.S. GAAP, except that they tend to be more detailed as they incorporate various sub-accounts under a major heading (see Appendix 3).

As far as the footnotes are concerned, the EAS standardizes the items to be disclosed. This aims to ensure the minimum information to be disclosed and increases the comparability across companies. However, as a result of standardization, the disclosure requirement may not cover all important aspects in a company's operations and therefore, the footnotes to the financial statements may not represent all the information needed for the decision making process of external users. Disclosures such as prior period adjustments, events after the balance sheet date and segment reporting, are not provided by the EAS. There is only a requirement that a company should consistently apply an accounting method throughout the accounting year. Future capital commitments are not required to be disclosed under the EAS while under U.S. GAAP, the amount committed for future capital expenditures shall be disclosed. Also, the EAS does not mention the accounting for contingencies while in U.S. GAAP, dependent upon the uncertainty of the event, different methods of disclosure will be required. The details of footnote information required under the EAS are included in Appendix 4.

In the additional information to be submitted, the EAS requires a detailed report of the performance of obligation to the State, including tax payables and payments, social and health insurance payables and payments, trade union fees and other payables and payments to the State. The EAS also requires the use and reporting of off-balance sheet accounts, namely the equipment lease account, goods kept for others account, consignment goods account, bad debts written off, foreign currencies account, depreciation fund account, etc. These requirements, while non-existent in U.S. GAAP, are consistent with the objective of using financial and accounting information as a tool for state management and the supervision of a company's economic performance.

REFERENCES

Circular 120/1999/TT-BTC of the Ministry of Finance (October 7, 1999).
Decision 1141TC/QD/CDKT of the Ministry of Finance (November 1, 1995).

Decision 166/1999/QD-BTC of the Ministry of Finance (December 30, 1999). Promulgating the regulations on the monitoring, utilization and depreciation of fixed assets.

FASB (1995). Current text. *Accounting Standards as of June 1, 1995. Volume I – General Standards*. Norwalk, CT: FASB.

APPENDIX 1
STANDARDIZED FORMAT OF BALANCE SHEET UNDER VIETNAMESE EAS AS AT 31 DECEMBER 20XX

Code	Assets	Notes	Beginning Balance[a]	Ending Balance[a]
100	A. Current assets and short-term investments			
110	I. Cash			
111	1. Cash on hand			
112	2. Cash in bank			
113	3. Cash in transit			
120	II. Short-term investments			
121	1. Short-term securities			
128	2. Other short-term investments			
129	3. Provision for short-term investments			
130	III. Accounts receivable	3.6		
131	1. Trade receivables			
132	2. Prepayments			
133	3. Deductible value added tax			
134	4. Inter-company receivables			
135	Investment in subsidiary			
136	Other inter-company receivables			
138	5. Other receivables			
139	6. Allowance for doubtful debts			
140	IV. Inventory			
141	1. Goods in transit			
142	2. Raw materials			
143	3. Tools and supplies			
144	4. Work in process			

APPENDIX 1 (*Continued*)

Code	Assets	Notes	Beginning Balance[a]	Ending Balance[a]
145	5. Finished goods			
146	6. Merchandise goods			
147	7. Goods on consignment			
149	8. Provision for obsolete stock			
150	V. Other current assets			
151	1. Advances			
152	2. Prepaid expenses			
153	3. Deferred expenses			
154	4. Shortage of assets awaiting resolution			
155	5. Short-term deposits, mortgages and collateral			
200	B. Fixed assets and long-term investments			
210	I. Fixed assets			
211	1. Tangible fixed assets	3.2 (a)		
212	Cost			
213	Accumulated depreciation			
214	2. Finance leases			
215	Cost			
216	Accumulated depreciation			
217	3. Intangible fixed assets	3.2 (b)		
218	Cost			
219	Accumulated amortization			
220	II. Long-term investments	3.4		
221	1. Long-term securities			
222	2. Investments in joint-ventures			
228	3. Other long-term investments			
229	4. Provisions for long-term investments			
230	III. Construction in process			
240	IV. Long-term deposits			
250	Total assets			

[a] Currency: VND.

APPENDIX 1 (*Continued*)

Code	Resources	Notes	Beginning Balance[a]	Ending Balance[a]
300	A. Liabilities			
310	I. Current liabilities	3.6		
311	1. Short-term borrowings			
312	2. Current portion of long-term debt			
313	3. Trade payables			
314	4. Advances from customers			
315	5. Statutory obligations			
316	6. Payables to employees			
317	7. Inter-company payables			
318	8. Other payables			
320	II. Long-term liabilities			
321	1. Long-term loans			
322	2. Other long-term liabilities			
330	III. Others			
331	1. Accrued expenses			
332	2. Surplus of assets awaiting resolution			
333	3. Long-term deposits received			
400	B. Owners' equity			
410	I. Capital	3.5		
411	1. Paid in capital			
412	2. Differences upon asset revaluation			
413	3. Foreign exchange differences			
414	4. Investment and development funds			
415	5. Financial reserved funds			
416	6. Unemployment fund			
417	7. Undistributed earnings			
418	8. Bonus and welfare funds			
419	9. Funds for capital expenditure			
430	Total liabilities and owners' equity			

[a]Currency: VND.

APPENDIX 1 (*Continued*)

Off Balance Sheet Items	Beginning Balance[a]	Ending Balance[a]
1. Assets under lease		
2. Goods held under trust or for processing		
3. Goods held by the company on consignment		
4. Bad debts written off		
5. Foreign currencies		
6. State funding		
7. Accumulated depreciation		

[a] Currency: VND.

Chief Accountant
(sign)

General Director
(sign and seal)

Date:

APPENDIX 2
STANDARDIZED FORMAT OF INCOME STATEMENT UNDER VIETNAMESE EAS FOR THE YEAR ENDED 31 DECEMBER 20XX (PERIOD FROM . . . TO . . .)

Part I: Profit and Loss Account

Code	Items	Notes	Previous Year[a]	Current Year[a]
01	Gross sales			
02	Export sales			
03	Less			
04	Discounts			
05	Allowances			

APPENDIX 2 (*Continued*)

Code	Items	Notes	Previous Year[a]	Current Year[a]
06	Sales returns			
07	Export duty/Excise tax			
10	Net sales			
11	Cost of goods sold			
20	Gross profit			
21	Selling expenses			
22	General and administration expenses			
30	Operating profit			
31	Income from financial activities			
32	Expenses from financial activities			
40	Profits from financial activities			
41	Extraordinary income			
42	Extraordinary expenses			
50	Extraordinary income			
60	Profit before tax			
70	Enterprise income tax			
80	Net profit after tax			

[a]Currency: VND.

Part II: Statutory Obligations

Items	Beginning Balance[a]	Current Year[a]		Ending Balance[a]
		Payable	Paid	
I. Taxes				
1. Value added tax				
2. Special sales tax				
3. Import/export tax				
4. Enterprise income tax				
5. Tax on capital				

APPENDIX 2 (*Continued*)

Items	Beginning Balance[a]	Current Year[a]		Ending Balance[a]
		Payable	Paid	
6. Natural resource tax				
7. Property tax				
8. Land rental				
9. Other taxes				
II. Other obligations				
1. Extra collections				
2. Duties				
3. Other obligations				
Total				

[a] Currency: VND.

Part III: VAT for Off-set, Reclaim and Expense

Code	Items	Current Year[a]
	I. Input VAT	
10	1. Input VAT brought forward	
11	2. Input VAT arising in the period	
12	3. Input VAT utilized	
13	a. VAT off-set	
14	b. VAT reclaim	
15	c. VAT expensed	
16	4. Input VAT carried forward	
	II. Reclaimable VAT	
20	1. Reclaimable VAT brought forward	
21	2. Reclaimable VAT arising in the period	
22	3. VAT reclaimed	
23	4. Reclaimable VAT carried forward	

APPENDIX 2 (*Continued*)

Code	Items	Current Year[a]
	III. Output VAT exempted from payment	
30	1. Discretionarily exempt VAT brought forward	
31	2. VAT to be discretionarily exempted	
32	3. VAT exempted	
33	4. Discretionarily exempt VAT carried forward	

[a]Currency: VND.

Chief Accountant
(sign)

General Director
(sign and seal)

Date:

APPENDIX 3
STANDARDIZED FORMAT OF CASH FLOW STATEMENT UNDER VIETNAMESE EAS FOR THE YEAR ENDED 31 DECEMBER 20XX (PERIOD FROM . . . TO . . .)

Code	Items	Notes	Previous Year[a]	Current Year[a]
	I. Operating activities			
01	Net profit after taxes			
	Adjustments for			
02	Depreciation and amortisation			
03	Provisions			
04	(Gain)/loss on disposal of fixed assets			
05	(Gain)/loss on revaluation			
06	(Gain)/loss from investments in other entities			

APPENDIX 3 (*Continued*)

Code	Items	Notes	Previous Year[a]	Current Year[a]
07	Interest income			
	Pre-operating expenses written off			
10	Cash flow from operations before adjustments to working capital			
11	(Increase)/decrease in receivables			
12	(Increase)/decrease in inventory			
13	Increase/(decrease) in payables			
14	Other cash inflow			
15	Other cash outflow			
20	Net cash inflows from operating activities			
	II. Investing activities			
21	Returns from investment			
22	Dividend income			
23	Proceeds from disposal of fixed assets			
24	Investments in other entities			
25	Purchases of fixed assets			
30	Net cash inflows from investing activities			
	III. Financing activities			
31	Borrowings			
32	Issue of shares			
33	Interest income			
34	Payment of debt			
35	Recovery of capital			
36	Dividends paid			
40	Net cash inflows from financing activities			
50	Net increase/(decrease) in cash			

APPENDIX 3 (*Continued*)

Code	Items	Notes	Previous Year[a]	Current Year[a]
60	Cash at the beginning of the year			
70	Cash at the end of the year			

[a]Currency: VND.

Chief Accountant
(sign)

General Director
(sign and seal)

Date:

APPENDIX 4
FOOTNOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 199X (PERIOD FROM . . . TO . . .)

1. General
   - 1.1. Type of company ownership
   - 1.2. Form of operation
   - 1.3. Line of business
   - 1.4. Number of employee, number of managerial personnel
   - 1.5. Significant events affecting business operation during the reporting year

2. Significant accounting policies
   - 2.1. Accounting period (from . . . to . . .)
   - 2.2. Bookkeeping currency and conversion principle
   - 2.3. Types of accounting books selected
   - 2.4. Accounting for fixed assets
     - Principles on reassessment of assets
     - Depreciation method
   - 2.5. Accounting for inventory
     - Valuation
     - Inventory flow valuation.
     - Inventory accounting method (perpetual, periodic)
   - 2.6. Methods on the establishment of Provision account

3. Details of selected balances in the financial statements

APPENDIX 4 (*Continued*)

Cost Factors	Current Year[a]
3.1. Production and business costs	
1. Raw materials	
2. Labour cost	
3. Depreciation expenses	
4. Outside services expenses	
5. Other cash expenses	
Total	

Items	Land[a]	Building[a]	Etc. . .[a]	Total[a]
3.2. Fixed assets				
I. Historical costs				
1. Beginning balance				
2. Increases during the period				
New purchase				
New self-constructed				
3. Decreases during the period				
Liquidation				
Selling				
4. Ending balance				
Unused				
Fully depreciated				
Awaiting liquidation				
II. Accumulated depreciation				
1. Beginning balance				
2. Increases during the period				
3. Decreases during the period				
4. Ending balance				
III. Net book value				
1. Beginning balance				
2. Ending balance				

Items	Budget[a]	Actual[a]	
		Previous Year	Current Year
3.3. Employee remuneration			
1. Total salaries			
2. Bonuses			
3. Total remuneration			
4. Average monthly salaries			
5. Average monthly remuneration			

APPENDIX 4 (*Continued*)

Items	Beginning Balance[a]	Increase[a]	Decrease[a]	Ending Balance[a]
3.4. Increase and decrease in investments				
I. Short-term investments				
1. Joint-ventures				
2. Marketable securities				
3. Other investments				
II. Long-term investments				
1. Joint-ventures				
2. Marketable securities				
3. Other investments				
Total				

Items	Beginning Balance[a]	Increase[a]	Decrease[a]	Ending Balance[a]
3.5. Increase and decrease in owners' equity				
I. Paid-in capital				
1. Issued from national budget				
2. Self-funded				
3. Joint-venture				
4. Issues of shares				
II. Funds				
1. Investment and development funds				
2. Research, development and training funds				
3. Financial reserved funds				
4. Bonus fund				
5. Welfare fund				
6. Unemployment fund				
III. Source of capital expenditure				
1. State funding				
2. Other sources				
IV. Undistributed earnings				
Total				

APPENDIX 4 (*Continued*)

Items	Beginning Balance[a]		Arising[a]		Ending Balance[a]		Amount in Dispute[a]
	Total	Amount Overdue	Increase	Decrease	Total	Amount Overdue	
3.6. Receivables and payables							
1. Receivables							
Long-term receivables							
Trade receivable							
Prepayments							
Advances							
Inter-company receivables							
Other receivable							
2. Payables							
2.1. Long-term liabilities							
Long-term borrowings							
Other long-term payables							
2.2. Current liabilities							
Short-term loan							
Trade payables							
Trade advances							
Deferred revenue							
Payables to employee							
Taxes payable							
Other statutory obligations							
Inter-company payables							
Other payables							

APPENDIX 4 (*Continued*)

Items	Previous Year[a]	Current Year[a]
4. Indices to evaluate the position of the business		
1. Assets ratio		
Fixed assets/total assets (%)		
Current assets/total assets (%)		
2. Profitability ratio		
Net income/net sales (%)		
Net income/capital (%)		
3. Financial position		
Liabilities/Total assets (%)		
Liquidity		
General: Current assets/Current liabilities (%)		
Current ratio: Cash, net receivables/current liabilities (%)		

Of which:

- Trade receivables in foreign currency (converted into USD).
- Trade payables in foreign currency (converted into USD).
- Reason(s) for amounts in dispute.

[a]Currency: VND.

Overall evaluation:

Chief Accountant
(sign)

General Director
(sign and seal)

Date: