ACCOUNTING DIFFERENCES ON VALUE RELEVANCE IN ASIAN MARKETS: PREDICTIONS AND BUSINESS IMPLICATIONS

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ABSTRACT

While East Asia has faced tremendous economic growth in recent years, research that systematically examines the value relevance of accounting information throughout the region is sparse. This study compares the accounting measurement rules in seven Asian countries and discusses the impact of accounting differences on value relevance of accounting information. The theoretical predictions have important implications for financial analysts, investors, stock exchanges, standard-setters, and regulators.

INTRODUCTION

Recently, the amazing economic growth in East Asia has caught the attention of the world,[1] which has made this region a major factor in international trade and investment. However, there is very little research that systematically examines the value relevance of accounting information[2] throughout the region. Therefore, the incremental contribution of this study is to discuss the impact of accounting measurement rules on the value relevance of accounting information in seven Asian countries: Hong Kong, Malaysia, Singapore, Thailand, Indonesia, the Philippines and Korea, and to provide theoretical predictions on the value relevance across countries. Given the recent greater integration of capital markets, debates on harmonization and cross-listing requirements worldwide, the results have important implications for financial analysts, investors, stock exchanges, standard-setters and regulators.

This paper is organized as follows. Section 2 presents the literature review and prediction formulation. Section 3 describes the methodology and analysis. Finally, in Section 4, we offer conclusion and implications.

LITERATURE REVIEW AND PREDICTION FORMULATION

Prior literature defines an accounting variable as value relevant if it has a predicted association with market values of equity. The studies investigating such associations can be dated back over 30 years (Ball and Brown 1968).

Barth et al. (2001) suggest that the major purpose of value relevance research is "to extend our knowledge regarding the relevance and reliability of accounting amounts

as reflected in equity values (p80)." Relevance and reliability are the two primary criteria used by Financial Accounting Standards Board (FASB) to choose accounting alternatives. As Barth et al. (2001, p80) indicate, an accounting amount will be value relevant "only if the amount reflects information relevant to investors in valuing the firm and is measured reliably enough to be reflected in share prices." In addition, since information does not need to be new to investors in order to be relevant, accounting information could maintain its relevance by summarizing or aggregating information that might be available from other sources.

Francis and Schipper (1999) summarize four different interpretations of value relevance. In this study, we use the fourth interpretation of value relevance measured by "the ability of financial statement information to capture or summarize information that affects share values (p327)."

A growing number of studies investigate the usefulness of accounting information in non-U.S. markets, emphasizing the role of accounting information in global markets (e.g., Amir et al. 1993; Barth and Clinch 1996; Chan and Seow 1996; King and Langli 1998; Graham and King 2000). In general, the conclusions from these studies are that accounting information in non-U.S. markets, measured under their home-GAAP systems, has varying degrees of value relevance. Differences in accounting practices that affect accounting standards are documented by these studies. Accounting standards, interpretations, applications and enforcements lead to differences in value relevance of accounting information.

Research addressing the value relevance issue in the seven Asian countries is very limited. Alford et al. (1993) compare the information content and timeliness of accounting earnings in several countries using the U.S. as a benchmark. They find significant differences in the usefulness of accounting earnings across the markets that exhibit different characteristics in accounting standards, disclosure practices, and corporate governance. They find that earnings from Singapore reflect less timely or less value-relevant information than U.S. earnings, but the results for Hong Kong are mixed and inconclusive.

Graham and King (2000) report evidence of the value relevance of earnings and book values in six Asian countries: Indonesia, South Korea, Malaysia, the Philippines, Taiwan, and Thailand. They find differences across the six countries in value relevance, which are generally consistent with accounting practice differences. Specifically, Graham and King (2000) structure their predictions based on the accounting differences across countries. First, book values in the Philippines reflect market values of assets more closely than in Taiwan. Therefore, the authors expect the explanatory power of book value will be greater for Philippine firms than for Taiwanese firms. The empirical evidence supports the expectations. The explanatory power of book value is highest in the Philippines and lowest in Taiwan. Second, the accounting systems in Indonesia and Malaysia are less conservative than other countries. However, the authors find that the incremental explanatory power of book value is not high in both countries.[3] Third,

accounting in Korea and Taiwan is least faithful to clean surplus accounting while accounting in the Philippines is most faithful. Violations of clean surplus bias empirical calculations of residual income. Therefore, the authors expect that the relative explanatory power of abnormal earnings would be high in the Philippines and low in Korea and Taiwan. The results are consistent with their expectations.

This study extends the literature summarized above. Prior studies provide limited directions on how to rank the value relevance of accounting information across countries. In this study, we formulate ex ante predictions of rankings for the seven Asian countries in our sample using a ranking method suggested by Basu et al. (1998).[4]

Basu et al. (1998) examine whether using different accounting measurement rules has an impact on the predictability of earnings. They find that analysts' forecast errors are lower for countries with more accrual basis accounting, less market-based accounting and more choice in accounting methods. In this study, we establish value relevance predictions by examining cross-country variations in accounting measurement rules using three dimensions: accrual versus cash basis accounting, historical cost versus market value accounting, and the extent of choice between accounting methods.

Accrual versus cash basis accounting. Earnings measured under accrual accounting, compared to that measured under cash-basis accounting, has been suggested as providing "a better indication of firm performance" and generating information that is "most useful to users in making economic decisions" (Basu et al. 1998, p1208). This may be achieved through the revenue recognition principle and matching principle by reducing the timing and mismatching problems in cash flows. Empirical evidence from Dechow (1994) shows that accruals improve earnings' ability to measure firm performance reflected in stock returns. In this study, we use the ranking of accrual accounting from Basu et al. (1998) to establish the predictions on the value relevance of earnings across our sample countries. We predict that if a country uses more accrual accounting, then its accounting measurement rules will generate earnings that are more value relevant. Further, Basu et al. (1998) provide evidence that accounting systems that use more accrual accounting result in more predictable earnings and smaller analysts' earnings forecast errors. Thus, we expect that if a country uses more accrual accounting, then value relevance of the residual income (determined by earnings forecasts and earnings) will be higher due to the more accurate earnings forecasts.

Historical cost versus market value accounting. With regards to reliability and verifiability concerns of accounting information, historical cost may be preferred to market values to record assets and liabilities unless there is considerable volatility in their market prices. Earnings tend to be more volatile in accounting systems that require more market value accounting because adjusting entries are made at the end of the accounting period to generate accurate valuations of balance sheet accounts. On the other hand, if more historical cost accounting is used, then earnings are likely to be smoother. We predict that if a country uses less market-based accounting, then it will generate earnings that are more value relevant. In addition, since Basu et al. (1998) show that analysts'

earnings forecast errors are smaller for accounting systems that use less market value accounting, it indicates that earnings forecasts are more accurate and thus more value relevant. Accordingly, we argue that value relevance of the residual income for these accounting systems (countries) is likely to be higher.

Choice between different accounting methods. Accounting systems have different requirements for allowing firms to choose between accounting methods (e.g. FIFO or LIFO methods for inventory valuation). Basu et al. (1998) argue that, if choice between accounting methods is restricted or limited, then the method(s) allowed may be sub-optimal for some firms. However, if more choice between accounting rules is permitted by accounting systems, then firms could provide more reliable and relevant information about their current and future performance based on their individual cost and revenue structures. Based on these arguments, we predict that earnings will be more value relevant for accounting systems that permit more choice between accounting methods. Basu et al. (1998) further indicate that analysts provide more accurate earnings forecasts for accounting systems where more choice is allowed between accounting methods. Thus, we predict that, for those accounting systems (countries) that allow more accounting choice, the residual income will be more value relevant.

METHODOLOGY AND ANALYSIS

Differences in Accounting Measurement Rules

Table 1 summarizes seven areas where accounting measurement rules differ across our sample countries. We examine only seven out of nine characteristics used by Basu et al. (1998) because of missing data for the other two: *Inventory, Fixed Asset Revaluation Stated at Amount in Excess of Cost, Research and Development, Deferred Taxes, Foreign Currency Translation Gains/Losses, Investment in Securities,* and *Amortization of Goodwill*. *Marketable Debt Securities* and *Corporate Acquisitions Accounting Method* are excluded due to limited information availability. In addition, *Investment in Securities* is simplified to *Consolidation Practice* because most of the sample countries do not have sophisticated accounting measurement rules (such as cost, equity and consolidation) to differentiate investments less than 20%, between 20% and 50%, and more than 50%.

TABLE 1: Summary of Major Accounting Differences across Sample Countries

Accounting Methods	*Hong Kong*	*Malaysia*	*Singapore*	*Thailand*	*Indonesia*	*Philippines*	*Korea*
Inventory Valuation	FIFO, average	Mostly LIFO, average and FIFO allowed and seldom used	Predominantly average, FIFO by some	FIFO, LIFO and average	FIFO, LIFO and average	Average and FIFO, LIFO allowed	FIFO, LIFO, average
Fixed Asset Revaluation Stated at Amount in Excess of Cost	Allowed	Allowed	Not allowed	Allowed	Not allowed	Allowed	Allowed
Research and Development	Expense research, capitalize some development	Expense research, capitalize development	Expensed by most, capitalized by many	Expense research, capitalize development	Expense or capitalize development	Expensed by most, capitalized by few	Capitalized or expensed
Deferred Taxes	Partial allocation	Comprehensive or partial allocation	Comprehensive or partial allocation	Partial allocation	Partial allocation	Comprehensive or partial allocation	Comprehensive or partial allocation
Foreign Currency Translation: Integrated/Self-Sustaining	Temporal/ Current Rate	Temporal	Temporal/ Current Rate	Current Rate	Temporal	Temporal/ Current Rate	Current Rate
Consolidation Practice	Consolidation required	Consolidation less used	Consolidation required	Consolidation required	Consolidation rarely prepared	Consolidation not required	Consolidation not complete
Amortization of Goodwill	Taken to reserve or amortized	Amortized or written off immediately	Taken to reserve	Amortized over estimated useful life	Amortized	Amortized or written off immediately	Amortized over maximum of 5 years

Sources: Basu et al (1998), Graham and King (2000), Saudagaran and Diga (2000), I/B/E/S International (1999).

Accounting measurement rules in the seven areas are collected from the following information sources: Basu et al (1998), Graham and King (2000), Saudagaran and Diga (2000), and I/B/E/S International (1999). Table 1 shows that accounting measurement rules differ in the seven areas across the sample countries. The accounting measurement rules are briefly summarized as follows:

(1) *Inventory:* The LIFO method is allowed in most of the countries. However, countries such as Hong Kong, Singapore, and the Philippines predominantly use either the FIFO or the weighted average method. Malaysia is unique in that inventory costs should be determined using the LIFO while the FIFO or weighted average method is seldom used. Usually the LIFO method will provide a better matching between revenue and inventory costs than the FIFO method.
(2) *Fixed Asset Revaluation Stated at Amount in Excess of Cost:* The write-up of fixed assets to a higher market value is allowed in most countries except Singapore and Indonesia. An upward adjustment is recorded either into income (Hong Kong and the Philippines) or into shareholders' equity (Malaysia, Thailand and Korea).
(3) *Research and Development:* Most sample countries expense research and development expenditures and limit capitalization only in some circumstances. For example, in Malaysia, Singapore, and Thailand, research costs are recorded as an expense in the period incurred while development costs may be capitalized and amortized over the period in which the product or process is expected to be sold or used.
(4) *Deferred Taxes:* Hong Kong, Thailand, and Indonesia permit only partial tax allocation, which excludes certain timing differences from the calculation of deferred income taxes. Malaysia, Singapore and the Philippines allow either comprehensive or partial tax allocation. The method to record deferred taxes is not specifically addressed in Korean accounting standards, and I assume that both comprehensive and partial tax allocations are allowed. Conformity between financial accounting and tax reporting is required in Korea and Thailand. Accordingly, the inter-period tax allocation is not a major issue for these two countries.
(5) *Foreign Currency Translation Gains/Losses:* All countries in the sample record foreign currency translation gains or losses. However, the measurement rules required for recording these gains or losses differ across the countries. In Hong Kong, Singapore, and the Philippines, for integrated foreign operations[5], these countries use the temporal method to determine the translation rates. Any gain or loss resulting from the translation is recorded in the income statement. For self-sustaining foreign operations, these countries use the current rate method, with any gain or loss recorded as an adjustment component of the shareholders' equity. Malaysia and Indonesia allow only the temporal method, while Thailand and Korea allow only the current rate method for all foreign operations, regardless of their relationship with their parent companies.
(6) *Consolidation Practice:* The consolidation practice is more sophisticated in Hong Kong and Singapore than other countries in the sample. Consolidation is required in Thailand. In Malaysia and Indonesia, consolidated financial statements are less

used or rarely prepared. In Korea, consolidation was done only within the same chaebol[6] due to the unique chaebol ownership structure before 1999. Furthermore, an affiliate was excluded from the consolidated financial statements although it was under the common control of the chaebol. Philippine GAAP does not require that consolidated statements be filed. Consolidation practice is done usually at the companies' discretion.

(7) *Amortization of Goodwill:* Two different accounting methods to record goodwill are used by my sample countries. Singapore requires that goodwill be recorded as an equity reserve. Thailand, Indonesia and Korea require that goodwill be amortized over different numbers of years. Hong Kong, Malaysia, and the Philippines allow either of the two methods.

Rank Construction

In Table 2, we construct country ranks based on the accounting measurement rules summarized in Table 1. Following Basu et al. (1998), the ranks are constructed along three dimensions: accrual versus cash basis accounting (A), historical cost versus market value accounting (M), and the extent of choice between accounting methods (C). For each of the seven accounting characteristics in Table 1, a score is assigned between 0 and 2 for each country on each dimension, and then the scores on each dimension for each country are summed. Countries are then ranked on each dimension based on their total scores.[7] Table 2 shows the ranking of major accounting differences for three dimensions across the sample countries.

The rules used by Basu et al. (1998, p.1221) are employed to assign the ranks as follows:

Dimension A: The degree of accrual basis accounting is conceptualized as whether or not adjusting entries are required under the matching principle in a particular country for a given accounting measurement. Therefore, a score of 2 is assigned if a balance sheet item is always recognized for a category. A score of 0 is assigned to indicate using cash basis accounting if a balance sheet item is never recorded. When some choice is permitted between cash and accrual bases, an intermediate score of 1 is assigned. Subjective adjustments of 0.2 to 0.8 are added or subtracted from the score when accrual basis accounting is more or less emphasized.

Dimension M: This dimension is used to capture whether subsequent fluctuations in market value flow through the income statement. A score of 0 is assigned if only historical cost is used. For example, for fixed asset revaluations, countries that do not allow upward revaluation are assigned scores of 1. If both upward and downward revaluations are allowed, then this country will receive a higher score.

TABLE 2: Ranking of Major Accounting Differences across Sample Countries

Accounting Methods		*HKG* [a]	*MYS* [a]	*SGP* [a]	*THA* [a]	*IDN* [a]	*PHL* [a]	*KOR* [a]
Inventory Valuation	*A* [b]	2	2	2	2	2	2	2
	M [b]	0.8	0.2	0.7	0.4	0.4	0.7	0.4
	C [b]	1	1.2	0.7	2	2	1.5	2
Fixed Asset Revaluation of Stated at Amount in Excess Cost	*A*	2	2	2	2	2	2	2
	M	1.5	1.5	1	1.5	1	1.5	1.5
	C	2	2	0	2	0	2	2
Research and Development	*A*	0.3	1	1	1	0.5	0.5	1
	M	1	1	1	1	1	1	1
	C	0.7	1	1.2	1	1	0.5	1.3
Deferred Taxes	*A*	1	1.5	1.5	1	1	1.5	1.5
	M	1	1	1	1	1	1	1
	C	0.5	1	1	0.5	0.5	1	1
Foreign Currency Translation Gains/Losses	*A*	1	0.5	1	1.8	0.5	1	1.8
	M	0.8	0.2	0.8	1.6	0.2	0.8	1.6
	C	0.7	0.5	0.7	0.7	0.5	0.7	0.7
Consolidation Practice	*A*	2	1.6	2	2	1.8	1.8	1.8
	M	1	0.6	1	1	0.6	0.5	0.6
	C	0	1.8	0	0	1.8	2	1.2
Amortization of Goodwill	*A*	1	1	0	2	2	1	2
	M	0.5	0.5	0	1	1	0.5	1
	C	2	2	0	0.5	0.5	2	0.5
Total scores	*A*	9.3	9.6	9.5	11.8	9.8	9.8	12.1
	M	6.6	5	5.5	7.5	5.2	6	7.1
	C	6.9	9.5	3.6	6.7	6.3	9.7	8.7
A summary of value relevance ranking for each category[c]	*A*	1	3	2	6	4.5	4.5	7
	M	3	7	5	1	6	4	2
	C	4	6	1	3	2	7	5
AVERAGE INDEX		2.67	5.33	2.67	3.33	4.17	5.17	4.67
OVERALL SUMMARY RANK		1.5	7	1.5	3	4	6	5

a. HKG is Hong Kong, MYS is Malaysia, SGP is Singapore, THA is Thailand, IDN is Indonesia, PHL is the Philippines, and KOR is Korea.
b. A is accrual versus cash basis accounting, M is market value versus historical cost accounting, and C is the extent of choice between accounting methods.
c. 7 indicates the highest value relevance, and 1 indicates the lowest value relevance. Countries with equal sums are assigned the mean of their ranks. 7 is assigned to the country with the highest sum on Accrual, or the lowest sum on Market, or the highest sum on Choice.
d. AVERAGE INDEX is the average ranking index assuming that all three factors are equally weighted.
e. OVERALL SUMMARY RANK is the predicted ranking of value relevance across the sample countries.

Sources: Scores for Hong Kong and Singapore are obtained from Basu et al. (1998). Scores for all other countries are constructed using the same rules (Basu et al. 1998).

Dimension C: This dimension is used for accounting practices that affect current earnings. A score of 2 is assigned if all possible accounting treatments are allowed, or if a method is 'allowed' without any apparent restrictions. We reduce this score by 0.2 if a slight restriction is implied by a particular method being favored in practice. We further reduce the score by 0.2 if an even higher restriction is implied. A score of 0 is assigned if only a particular accounting method is used or 'required', or if a method is 'not allowed', or if the available practices have no impact on current earnings. Following Basu et al. (1998), some subjective adjustments are made based on the level of restrictions. Subjective adjustments of 0.1 are made when the restrictions are more or less limited than the criteria described above.

Note that our assignment of scores may be subjective, given the nature of accounting measurement rules and actual accounting practice. Therefore, some uncertainty is involved in assigning the final scores.

Ranks of 1 to 7 (with 7 indicating the highest potential performance of value relevance models) are then assigned to countries based on the sums of the scores on each of the Accrual, Market, and Choice dimensions. According to the overall value relevance ranking, 7 is assigned to the country with the highest sum on Accrual, or the lowest sum on Market, or the highest sum on Choice. For example, Korea, which has the highest sum of 12.1 on Accrual dimension, is assigned a rank of 7, while Hong Kong with the lowest sum of 9.3 is assigned a rank of 1. Countries with equal sums, e.g., Indonesia and the Philippines with sums of 9.8 on Accrual dimension are assigned the mean of their ranks, 4.5.

We assume that all three factors are equally weighted[8], and calculate the average ranking index (AVERAGE INDEX) for each country: the ranks of the three categories for each country are summed first, and then divided by 3. The average overall ranking index is used as a proxy for value relevance of accounting information across countries. Those with higher average ranks are expected to demonstrate higher value relevance, and countries with lower average ranks are expected to generate lower value relevance.

The final rank of value relevance is summarized in OVERALL SUMMARY RANK. The expected performance of value relevance of accounting information is: Malaysia (the highest), the Philippines, Korea, Indonesia, Thailand, Hong Kong and Singapore (the lowest).

CONCLUSION AND IMPLICATIONS

The expected performance of value relevance of accounting information indicates how well the accounting measures reflect information used by investors in seven Asian countries. High value relevance of accounting measures signals their usefulness to the investors, as well as the expertise of accountants and auditors in these countries.

The expected ranking of value relevance is useful for financial analysts and investors to evaluate multi-jurisdiction investments because it indicates how current investors use the information from financial statements to make decisions. For example, the predictions show that Malaysia and the Philippines are among the high end of value relevance, while Hong Kong and Singapore are on the low end. The markets in Malaysia and the Philippines are less developed than those in Hong Kong and Singapore. Therefore, the predictions could be interpreted as that investors may not have access to other information to help their investing decisions. The financial statements may become the only reliable resource to get investors informed, thus contain more relevant information to investors. Since the markets in Hong Kong and Singapore are more developed and mature compared to other countries in the sample, investors may get information from different channels other than financial statements. Accordingly the role of financial statements may not be as important to investors as in less developed markets.

In addition, the expected ranking of value relevance provides important information to stock exchanges and regulators for policy debates on cross-listing requirements. Due to the greater integration of capital markets, there has been debate in the U.S. over the appropriate listing requirements for foreign stocks. If a foreign market demonstrates high value relevance of accounting information, the needs to reconcile these financial statements based on their home accounting standards to U.S. Generally Accepted Accounting Standards (GAAP) may be reduced. For example, Barth and Clinch (1996) investigate the differences between U.S. and domestic GAAP for U.S.-listed U.K., Australian and Canadian firms. Their empirical results suggest that the required reconciliations to U.S. GAAP are value relevant to investors for U.K. and Australian firms, but to a more limited extent for Canadian firms due to the similarity of U.S. and Canadian GAAP. Chan and Seow (1996) examine the association between stock returns and foreign GAAP earnings versus U.S. GAAP adjusted earnings. Their findings suggest that foreign GAAP earnings may convey information that may be lost in the reconciliation to U.S. GAAP. Their results are consistent with Alford et al. (1993) who present evidence that foreign GAAP earnings in certain countries are more value relevant than earnings based on U.S. GAAP.

Finally, the expected ranking of value relevance is useful for international and domestic accounting standard setters to address standard harmonization. If the empirical evidence supports the predicted ranking of value relevance, then the accounting measurement rules in countries that exhibit high value relevance can be studied and used as a guide in improving value relevance in other countries. In addition, domestic standard setters might use the findings for making the choice of better use of international or domestic standards.

Future research may be extended to examine the predictions empirically using different valuation models. In addition, financial reporting systems and institutional factors need to be incorporated to determine the overall impact on the value relevance of accounting information.

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END NOTES

[1] In 2002, the current price GDP was US$1,156 billion for the seven countries examined in this study. The exports totaled US$705 billion and the imports totaled US$673 billion. These countries provided 11.5% of global trade in 2001. The current price GDP, exports and imports statistics are collected from The APEC Region Trade and Investment 2002. The percentage of global trade is collected from United Nations Monthly Bulletin of Statistics, March 2003.

[2] In this study, we use the definition of value relevance measured by "the ability of financial statement information to capture or summarize information that affects share values" (p327) from Francis and Schipper (1999).

[3] Graham and King (2000) expect that conservative accounting (bias) would generally reduce the value relevance of both book value and earnings since "the essence of conservatism is delay in reflecting certain events in the accounting records".

[4] There is no other research that provides such a ranking method based on the differences in accounting standards.

[5] These are foreign entities that are financially or operationally dependent on parent companies.

[6] Chaebol is a series of companies that are privately owned and run but strictly controlled by the central government - through credit, the approval or not of trading licenses, and a host of other measures. Chaebol is characterized as conglomerates of many companies clustered around one holding company. The parent company is usually controlled by one family and the companies hold shares in each other.

[7] This is the same technique from Basu, et al. (1998).

[8] This assumption is necessary because we do not have the knowledge to determine how much each factor could affect the value relevance of accounting information. This technique is borrowed from Basu et al. (1998).