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Availability and Accuracy of Accounting and Financial Data in Emerging Markets: The Case of Malaysia

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Availability and Accuracy of Accounting and Financial Data: The Case of Malaysia*

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Résumé / Abstract

L'intérêt croissant des investisseurs et des chercheurs envers les marchés émergents pose avec acuité la question de la fiabilité et de la disponibilité de l'information comptable et financière relative aux entreprises de ces pays. Cet article analyse la fiabilité de l'information comptable disponible sur des entreprise de Malaisie dans trois bases de données largement utilisées : Disclosure, Infostat and PACAP. L'analyse de l'ensemble des entreprises couvertes, des données et des pratiques de transcription révèle d'importantes différences qui peuvent influencer de façon importante les résultats des travaux empiriques. L'article identifie ces différences et indique de quelle façon il est possible d'en tenir compte.

As investor and researcher interest in emerging markets increases, the question of the availability and reliability of financial information pertinent to these markets becomes more and more important. This paper examines the availability and quality of accounting information on Malaysian firms contained in three different, widely available databases: Disclosure, Infostat and PACAP. An analysis of the firm coverage and transcription policies of these databases reveals systematic differences that could give rise to a "database effect" on research findings. The paper identifies these differences and demonstrates, where possible, ways to adjust for them.

Mots Clés : Marchés émergents, données comptables, Malaisie, banques de données

Keywords : Emerging markets, accounting data, Malaysia, databases

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1. Introduction

The growth of emerging markets has had profound implications for investors, policy-makers and researchers (Hossain, Tan and Adams, 1994). A key concern common to all three groups is the availability and quality of financial information relative to these markets. The objective of this study is to analyze the availability and reliability of information on firms in one of these emerging nations, Malaysia.

An analysis of the quality of information relating to firms in emerging markets is pertinent to the development of emerging markets and economic development in general. According to Chuhan (1994), private capital flows have been the fastest growing category of voluntary capital flows to emerging markets and have become an increasingly important source of external financing for developing countries. However, a lack of information on these markets is one of three factors identified by Chuhan that appear to be limiting the growth of this flow (the other two are the riskiness and low liquidity of these emerging markets). The information problem is of particular importance to institutional investors. Specifically, Canadian institutional investors complain that the cost of obtaining information is very high, while U. S. investors consider the lack of information a major problem when investing outside North and South America. Thus, the availability and accuracy of information relative to emerging markets has become an important determinant of capital flows to emerging markets and, consequently, an important research topic.

Additionally, the quality and the accuracy of financial information available to investors appears to be a good indicator of the level of development of an emerging market or country. As noted by Demirgüç-Kunt and Levine (1993), critics often claim that developing country stock markets are largely speculative and that prices and their volatility cannot be explained by fundamentals. Thus, the availability of a large set of "correct" and convergent information can be interpreted as a sign of development.

As the focus of research in economics, finance and accounting moves from the developed (principally U. S.) markets toward more exotic financial markets, the problems of access to and reliability of financial and accounting databases also become more pertinent to researchers. In general, empirical studies pay little attention to the quality of price, dividend and earnings information available from diverse databases in spite of recent studies demonstrating relatively high rates of error in, and inconsistency among, such widely used databases as *CRSP* (Courtenay and Keller 1994), Compustat and Value Line (Kern and Morris 1994). Guenther and Rosman (1994) show that these inconsistencies are so substantial

that, in some studies, the empirical results obtained might be at least partly a function of the database used. The doubtful reliability of U. S. data leads one to question whether emerging markets data can serve as a basis for useful empirical work.

The study focuses principally on accounting data as these are particularly important to financial analysts and can be obtained from a variety of sources. It is thus possible to use the level of convergence or consistency in information obtained from these different sources as an indicator of the quality of the information. Even consistent information, however, can be incorrect if the different sources make the same errors in collecting and processing the raw data. Thus, it is first necessary to study the transcription process (from the original financial statements to the databases), and then the degree of convergence of the resulting databases. Before either of these steps can be accomplished, however, it is necessary to take into account the characteristics of the (in this case, Malaysian) accounting system on which these financial statements are grounded. Therefore, this study comprises three parts. In the first, we analyze the differences in accounting and disclosure practices between Malaysia and the U. S. The second part is concerned with an analysis of the process that transforms the original financial statement data into a computerized database. We are particularly interested here in the way in which the original financial statement items are regrouped, transformed or renamed for presentation in database format. The third part consists in an application of Kern and Morris' (1994) analysis of the differences among three databases containing information on Malaysian firms: (1) **Infostat**, an exclusively Malaysian database; (2) the **Disclosure** *Emerging Markets Database*; and the (3) **Pacific-Basin Capital Markets (PACAP)** Industrial Companies database. In addition, we use financial statement information taken directly from the annual reports of a small sample of Malaysian firms.

The paper is organized as follows. Part II presents a summary and discussion of the differences between U. S. and Malaysian accounting and reporting practices as reported by the Center for International Analysis and Research. Part III contains the results of our study of the transcription process, a comparison among the financial statements of a sample of Malaysian firms and the accounting data of these firms as reported in the databases listed above. A comparison of key financial statistics derived from each of the databases is presented in Part IV. Finally, conclusions are offered.

2. Malaysia vs. the United States: Accounting and reporting

This section of the paper explicitly compares accounting and reporting practices in Malaysia and the U.S. as both of these aspects have potentially important implications for the preparation and use of an international financial database. Systematic accounting differences between the two countries can have an impact on the meaning of a particular financial statement item. Financial statements do not usually provide sufficient information to "correct" these accounting differences. Even when the accounting practices are the same, reporting and disclosure differences can pose serious problems for a database preparer who is attempting to record accounting information from several countries in a standardized (in the case of **Disclosure** and **PACAP**, North American) format. Our analysis relies on data collected from *International Accounting and Auditing Trends* (Centre for International Financial Analysis and Research, or CIFAR, 1993), a study of actual (rather than prescribed) accounting practices in use around the world.

U. S. and Malaysian accounting practices

Table 1 presents a comparison of accounting practices in the U. S. and Malaysia. Overall, practices in the two countries are very similar, a finding consistent with the trend toward harmonizing international accounting practices noted by CIFAR. Some important differences remain, however, particularly regarding revaluation of non-current assets and accounting for goodwill.

Contrary to U. S. practice, Malaysian companies are permitted to (and frequently do) revalue non-current assets. Tan et al. (1994) find that almost two-thirds of companies engaging in revaluation typically do so with land and buildings, and the revaluation is almost always upward. In the U. S., only asset writedowns are permitted and these are rare. The effect of this difference in accounting is to increase total assets and shareholders' equity (the credit is to a shareholders' equity reserve account out of which stock dividends can be issued); increase depreciation expense and therefore decrease income and performance ratios; and decrease leverage ratios (Easton et al. 1993), of a Malaysian firm relative to an identical U. S. company.

The second major difference in accounting practice relates to accounting for goodwill. In the U. S., purchased goodwill is capitalized and amortized over a period up to 40 years. In Malaysia, goodwill has typically been eliminated upon

acquisition against a shareholders' equity account.[1] Compared to an identical U. S. firm, a Malaysian firm would have lower total assets and shareholders' equity (and, therefore, higher leverage ratios), and higher income.

The overall effect of these two accounting differences is ambiguous as they have contrary financial statement effects. There are some indications, however, that goodwill constitutes a relatively small proportion of the total assets of most firms and different methods of accounting for goodwill (e. g., capitalizing as in the U.S. vs. eliminating against shareholders as is typically done in Malaysia) will have only minor financial statement impact (Colley and Volkan 1988) for most but not all firms. The asset revaluation practice, however, could have an important impact on the leverage and performance statistics of a large number of Malaysian firms. There is insufficient information in the annual reports of Malaysian firms to estimate or adjust for the effects of these accounting differences, implying that users of this information must be careful in drawing conclusions based on comparisons of Malaysian and U. S. firms.

Comparison of reporting and disclosure practices

Table 2 presents a summary of reporting and disclosure practices for the two countries. Although many of the elements reported in the financial statements are similar, the overall presentation of the financial statements is quite different. Malaysian income statements are much less complete than their U.S. counterparts: in many cases, only net income plus selected revenue and expense items are shown. Thus, for instance, cost of goods sold, sales, general and administrative expenses and foreign exchange gains and losses are typically not disclosed separately.

The balance sheet format likewise is quite different for the two countries. The balance sheets for Malaysian companies begin with fixed assets (which are presented net of accumulated depreciation). The next section shows current assets and liabilities, which are netted against one another to arrive at net working capital, which is added to the fixed assets. Long term debt and deferred taxes is then deducted to arrive at shareholders' equity. As is shown in Table 2, minority interest is treated in the same fashion by both countries, and earnings per share is calculated in the same way. Dividends per share are disclosed in both countries,

[1] Malaysian companies have begun capitalizing goodwill acquired after January 1, 1994, and will amortize this goodwill over a period up to 25 years.

although in the U.S. gross dividends per share are disclosed whereas Malaysian dividends per share are calculated net of the tax adjustment.

The different reporting and disclosure practices have at least two implications for database preparers and users. First, many of what are considered to be important financial statement items are simply unavailable in the financial statements of many Malaysian firms. Unless database preparers use (perhaps less verifiable) sources other than the financial statements, an accounting database of Malaysian firms will necessarily be less detailed than that of (for example) Compustat. Secondly, the different presentation of the information that is contained in the financial statements implies that at least some aspects of the transcription/translation process will be complex. It is possible that different databases will handle this transcription process in systematically different ways.

3. From the financial statements to the database: Transcription

Disclosure and PACAP present accounting data to the user in a standard U.S. format. The transcription process entails making the financial statement data provided by a (in this case, Malaysian) corporation "fit" this model. Clearly, accounting and reporting practices that differ from U. S. practices can potentially complicate this process. In contrast, Infostat uses the Malaysian format which simplifies the transcription process and leaves any translation necessary to the database user. From a researcher's point of view, the choice among these databases is a function of the differences in the transcription processes used by the different databases and the objectives of the research in question.

In order to investigate the transcription processes used by these databases, we compared directly the financial statements (income statement and balance sheet) contained in the annual reports of seven Malaysian firms with the accounting data reported for these firms in the Disclosure, Infostat and PACAP databases over the period 1989-1993. The discussion below covers the systematic differences and tendencies that we found associated with each of the databases. Appendices 2, 3 and 4 contain a complete list of all of the discrepancies we found between financial statement data and the Disclosure, PACAP and Infostat databases, respectively, together with an explanation, where we could find one, of each of the discrepancies.

Disclosure

Of the databases we examined, Disclosure is the one that most closely follows North American reporting practices. The sections below present specific income statement and balance sheet examples of the Disclosure approach. One general difficulty that we found in Disclosure is the occasional inconsistent treatment given to some financial statement items. Even for the same item for the same firm, the treatment accorded can vary from year to year (see Appendix 2, cases A(i), A(ii), B(i), and B(ii)). In all the cases that we found, however, the more recent treatment is more consistent with North American practice. Why prior years' data is not restated to conform to the most recent treatment is not clear. While there is no reason to conclude that these inconsistencies introduce any systematic bias into the Disclosure data, it certainly adds to the overall level of noise in the database.

Disclosure: Income Statement: We found two important systematic differences between Disclosure and Malaysian financial statement income statements. First, Disclosure presents separately a depreciation and amortization expense item, where these items are usually disclosed only in the notes to the financial statements. This modification is strictly a matter of presentation and has no impact on any key financial statement statistics.

The second difference relates to the presentation of equity earnings of associated companies. Malaysian firms add their share of pre-tax income of associated companies to firm pre-tax income and add their share of associated companies' income tax to the firm's total income tax expense. Disclosure removes the pre-tax income and income tax of associated companies from the respective income statement items and presents a single after-tax equity in earnings items, below the line on the income statement. While this treatment does not change net income, Disclosure pretax income is lower (when associated companies generate a profit) than that presented in the financial statements.

Disclosure: Balance Sheet: The most pervasive difference between Disclosure and Malaysian financial statements relates to accounts receivable ("Debtors" on the Malaysian balance sheet). Malaysian firms present all receivables in the current asset section of the balance sheet (usually as a single item), even those falling due after more than one year. The amount of receivables falling due after more than one year is disclosed (in the financial statements that we have) either

as a separate current asset or, more frequently, in a note to the financial statements. Disclosure reliably removes accounts falling due after more than one year from current assets and reports them as non-current receivables. The effect of this transposition is to understate Disclosure current assets relative to the financial statements, and therefore understate working capital and working capital ratios.

PACAP

Compared to Disclosure, the PACAP database represents a far less ambitious translation of Malaysian financial statement data. Although PACAP reports North American accounting items, the transposition process seems to consist almost entirely of simply assigning a North American title to each Malaysian financial statement item. As well, the financial statement information presented is not as detailed as in the Disclosure database.

PACAP: Income Statement: Although PACAP uses North American titles and format, their income statement is simply the Malaysian income statement. Cost of sales, and selling and administrative expenses are reported as missing.

PACAP: Balance Sheet: As with the income statement, PACAP uses North American titles and format. The translation is a simple one, though. Non-current receivables are reported as part of accounts receivables, as Malaysian firms do. PACAP only reports three items in the stockholder's equity section: capital stock, additional paid-in capital and retained earnings. Retained earnings contains retained profit, share premium, reserves and minority interest. This particular simplification is consistent with neither Malaysian nor North American reporting standards.

Infostat

Infostat is a local Malaysian product and presents its accounting in the Malaysian format. In this way, Infostat avoids virtually all of the transcription problems noted in Disclosure.

Infostat: Income Statement: We detected no differences among Infostat income

statement items and those presented in the Malaysian firms' annual reports.

Infostat: Balance Sheet: Infostat systematically performs two modifications to the Malaysian balance sheets that we had. The first concerns related party receivables and payables. Infostat combines both items as a single item, "Other NCA" (net current assets), a current asset item that can have a debit or credit balance depending on the relative amounts of the receivables and payables in question. While this adjustment has no impact on total working capital, both current assets and current liabilities are reduced by the amount of related party payables. In cases where the current ratio is greater than (less than) one, this transformation serves to increase (decrease) Infostat's current ratio relative to that in the annual report. "Other NCA" also contains such diverse current liability items as "Provision for maintenance", "Sales in advance" and "Construction contract", the latter two items representing different kinds of unearned revenue.

The second modification is related to short-term loans other than accounts payable (e. g., short-term bank loans, the current portion of long-term debt, payables related to lease obligations). While these items are included in current liabilities in the annual reports that we have, Infostat combines them as a single item "Short Loans," which is not considered a current liability. For some of the six firms for which we have the annual reports, this practice has a profound impact on working capital and the current ratio.

Conclusions

Of the three databases, Disclosure's transcription process is the most ambitious and detailed. The data presented follows U. S. standards as closely as Malaysian financial statement information permits. However, the treatment is not entirely consistent from one firm to another or from one year to another. It does seem clear, however, that Disclosure data for most recent years is more consistent with U. S. standards. While PACAP resembles Disclosure in its use of U. S. financial statement formats and titles, the translation from Malaysian to U. S. practices is very limited, with the result that PACAP data actually appears to resemble Infostat more closely than it does Disclosure.

It is important to note that our analysis here is confined to only six relatively large Malaysian firms. Thus, our use of terms like "systematic" and "consistent" should be interpreted with caution.

4. Database comparisons

The findings of sections II and III indicate that the database transcription process from Malaysian financial statements is problematic. This in turn leads to questions regarding the consistency and reliability of accounting data available in electronic form. To investigate this issue, we compare key accounting statistics of non-financial firms derived from three different databases. Infostat, PACAP and Disclosure Emerging Markets are mainly accounting databases, but they include partial market data[2]. Infostat is produced in Malaysia, while Disclosure and PACAP originate from the U.S. The 1994 version of Infostat provides accounting data for the years 1986-1993 on 101 Malaysian firms (80 of which are non-financial firms with complete data). The corresponding numbers for the 1994 versions of the other two databases are: Disclosure, 1987-1993, 207 (162 non-financial, complete data) firms; and PACAP, 1977-1993, 356 (354 non-financial, complete data) firms.[3]

To first illustrate the effect of the database choice on empirical research results, we selected two classic ratios or indicators: the Return on Equity (ROE) and the Debt-to-Equity ratios (D/E) from various databases.[4] The comparisons of these indicators illustrate the joint effect of differences in database coverage, divergent reporting practices and inconsistencies in data manipulation.

The joint effect of differences in database coverage, divergent reporting practices and inconsistencies

ROE is directly available on the Disclosure and Infostat databases, with similar definitions for each (see appendix 3 for a definition of the items and ratios used in this section for each of the databases). The ROE had to be calculated for PACAP by extracting Net Income and dividing by Total Equity. Our analysis

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[2] These data generally allow for an estimation of market rates of returns. However, adjusting prices and dividends for the distributions and splits is not a trivial task and the comparison of these rates of returns has been left for further research.

[3] PACAP reports financial firm data in a separate database.

[4] The analyses reported here were also performed for earnings per share (EPS) data gathered from the five databases, but the differences found were so substantial that we do not report these results here.

comprised all the non-financial firm observations available in all three databases over the years 1990-1993.

Table 3 contains descriptive statistics for ROE and the D/E ratio for the three databases over the four-year period. Across all four years, the Disclosure sample of firms reports a higher mean and median ROE, and a lower mean and median D/E ratio than do either PACAP or Infostat. The PACAP sample has the highest variance for both ROE (all four years) and D/E (three of the four years). Thus, there is some strong indication that the distribution of ROE and D/E differs in some systematic way across these three databases.

We performed a further analysis of the distribution of ROE and D/E in order to test statistically for interdatabase differences. For each year and each variable, we combined the three sets of observations for the purpose of determining the limit points that would divide this combined population into ten classes of equal frequency. We then checked whether this set of limit points divided each of the three individual distributions into ten classes of equal frequency.

Table 4 presents the proportion of each individual database's ROE observations in each year that falls into each decile as determined above. If the databases were identical, each database would have 10% of its observations in each decile. However, as Table 4 demonstrates, the ROE distributions of the databases are not identical. In both 1992 and 1993, the distribution of ROE in the Disclosure database is significantly different from that of Infostat and PACAP (probability $\chi^2 < 0.05$). In contrast to the latter two, a higher proportion of Disclosure firms are in the highest overall ROE decile, ranging from 20% to 31% over the years 1990-1993. Our Chi-square tests do not detect any statistically significant difference in the distributions of PACAP and Infostat firms.

Table 5 presents the results of an identical analysis applied to the debt-to-equity (D/E) ratio. Similar to the ROE results, the distribution of Disclosure firms' D/E ratio is significantly different from that of Infostat and PACAP firms in each of 1991, 1992 and 1993. In the case of the D/E ratio, a relatively large proportion of the Disclosure firms, ranging from 20% to 36% over the years 1990-1993, are in the lowest overall D/E decile. Once again, no statistical difference was detected in the distributions of PACAP and Infostat firms' D/E ratios.

The differences detected above could potentially arise from three sources. First, the databases cover different sub-samples of Malaysian firms. Second, in some cases, the calculation of the ratios might deviate from the definitions provided by the database. Finally, the same firm might have different values under the

different databases for the same financial statement item. The following sections examine each of these possibilities in turn.

The effect of different coverage

Given that the different databases do differ in their coverage, it is perhaps not surprising that the analyses contained in tables 4 and 5 showed different distributions of ROE and Debt-to-Equity for all the firms on each database. Therefore, to eliminate the effects of the different coverage, we re-performed the previous comparison of ROE and D/E using a matched sample for each pair of databases. The results are summarized in table 6. While the use of matched samples generally reduces the differences between the distributions, large differences persist. If we analyze the medians of the ROE distributions, we can conclude that the rate of return under Disclosure is significantly higher than in the two other databases. Similar systematic biases also appear for D/E ratios. Malaysian firms are less leveraged according to Disclosure than according to the other databases. Once again, Infostat and PACAP generally offer similar results.

Clearly, the various databases report different indicators for at least some of the same firms over the same time frame. Even after eliminating the differences in coverage by matching the samples, however, differences persist. Two explanations could account for this phenomenon. First, there were some differences in how the different databases calculated the two ratios we targeted. The second explanation is that the databases used different data values as inputs to the calculation. We now consider these last two possibilities.

The effect of reporting differences

There are subsets of firms that are common to the three accounting databases, which allows for direct comparisons of data items for the same firms. This analysis permits a direct investigation of the effects of various data reporting practices. For each year and for each pair of databases, three income statement items (sales, net earnings before extraordinary items, and net earnings) and four balance sheet items (total assets, short term assets, total equity and long term debt) are extracted and compared. Sales and total assets were selected because they are easily identifiable and relatively unambiguous financial accounting measures (Kern and Morris 1994). The others items were selected because they are currently used in empirical studies to estimate rates of return and leverage. We

then recalculated some ratios previously used, after a careful matching of the items required by this calculation (see appendix 3 for a definition of the items used in this section for each of the databases).

Tables 7, 8, and 9 report the percentages of perfect matches and close matches for the financial statement items for each possible database pairing. For a given database pair, we report a perfect match when the reported variable in the first data base is within 1000 Ringits (approximately $360 US) of the same variable reported by the second database (to allow for rounding errors). A 5% match is reported when the difference between the reported value in the first database and the same variable reported by the second database is less than 5% of the amount reported by the first database. The table also reports the mean difference over all matched observations.

Table 7 summarizes the differences between matched observations in the Infostat and PACAP databases. For the income statement elements, the perfect match percentage (PMP) is very high, over 90% in ten of the twelve comparisons performed. These proportions are especially surprising when one compares this result with a similar exercise published by Kern and Morris (1994) in the U.S. They observe a PMP of only 65% to 70% when comparing total sales reported by Compustat and Value Line for the same companies. However, they also observe a proportion of close matches (difference less than 5%) of 90 to 93% from 1987 to 1990. We also report the mean differences which do not in any case differ significantly from zero. This leads us to conclude that systematic differences in the Infostat and PACAP databases' reporting of income statement items do not exist. However, the rate of agreement between the two databases declines when examining balance sheet items. While the porportion of perfect matches in long term debt remains high, the PMP in total assets, short-term assets and total equity are all well below 60%, with close matches below 90% (with the exception of total assets in 1993 which had a close match of 91.3%).

Table 8 presents the differences between matched observations in the Infostat and Disclosure databases. The proportion of perfect matches is impressive for all three income statement elements identified. As for the balance sheet items, the proportion of close matches was very good for all four elements. When applying the more stringent perfect match criterion, total assets and short term assets were somewhat more problematic, generally showing rates of agreement of less than 60%.

Table 9 repeats the exercise for the PACAP and Disclosure databases. The pattern of results is very similar to that for Infostat and Disclosure in that income

statement items showed quite high rates of agreement. The pattern of balance sheet elements is also similar: total assets, short term assets and long term debt have high percentages of both perfect and close matches. However, the total equity figures are especially problematic here: the PMP is less than 45% over the years 1990-1993 and even the proportion of close matches is generally less than 70%. Overall, the income statement elements are quite consistent between the three databases, but several differences are evident in the balance sheet figures.

Table 10 repeats the aforementioned analysis with two important differences. First, the analyses from this point on are conducted on the subsample of firms which are present in all three databases, rather than just a given database pair. Secondly, for Table 1, we conducted an analysis after adjusting for systematic differences in data processing by PACAP. In order to correct for the differential data treatment, we deducted related loans from Total Assets, Total Current Liabilities, Total Current Assets and Short Term Loans in the PACAP database. PACAP reports amounts to and from related parties as they appear in the financial statements, whereas Infostat places the net amount under non-current assets. In order to reconcile a second systematic difference, we deducted Minority Interest from Total Stockholders Equity, again in PACAP. This was necessary as PACAP includes minority interest as part of retained earnings, as discussed in Part II. The effect of these adjustments was to align Infostat and PACAP nearly perfectly, according to a close match criterion: Total Assets, Short Term Assets and Total Equity all had close match percentages well in excess of 90%. The perfect match criterion improved from approximately 30 to 50% in the unadjusted case to 70 to 90% after adjustment. The adjustment to PACAP's Total Stockholders Equity also eliminated most of the differences between it and Total Equity according to Disclosure: the perfect match rose from approximately 30% to approximately 90%, and close matches were all above the 95% level.

Table 11 shows the effect of these adjustments on ROE and Debt-to-Equity ratios as calculated from database information. In addition to the adjustments above, preferred dividends were added back to net earnings in Disclosure. The results of the adjustments was to increase the percentage of perfect matches to over 80% and the percentage of close matches to over 90% in most cases. The results reported in this table are strikingly different from those reported in tables 3 and 4, where the ratios analyzed were extracted directly from the database in question. This seems to indicate that a more correct (or, perhaps, more reliable) calculation of ratios is possible, but only when one takes into account the meanings of the various component items reported in the databases and the differences between foreign and U.S. practices.

5.Conclusion

This study underlines several problems that should concern the users of these databases. The naive utilisation of these databases by direct extraction of provided ratios leads to extreme differences in the frequency distributions of such firm characteristics as leverage, profitability and earnings. These differences are attributable to differences in the samples of firms included in the various databases, errors in certain databases and reporting differences. The implications, both for the analyst and the researcher, are numerous.

The databases considered here cover disparate subsets of stocks. The use of one or other of the available databases could have an important impact on the research results obtained. The user interested in a more accurate accounting and finance picture would be well served by a more extensive database. Calculation errors seem to affect especially the statistics provided in the databases, like the ratios studied here which, in spite of identical definitions, do not appear to be estimated in the same way. The use of these ratios is best avoided in favour of ratios calculated directly from the component items in the database. A comparison of these "recalculated" ratios indicates that the level of inter-database agreement is comparable and sometimes superior to that observed among the established U. S. accounting databases, once the transcription processes/problems are taken into account. Still, the financial statements of many of the emerging markets firms recorded in available databases are not consistent with U. S. or international accounting standards. Certain particularities of the accounting system in question persist and directly affect important ratios like leverage. This is especially true of Malaysian practices regarding non-current asset revaluation and the treatment of goodwill which seem especially likely to affect measures of leverage. Any comparative analysis based on the accounting data of these firms must take these particularities into account. Failure to do so could result in findings driven as much by accounting differences as by real differences among firms. These concerns seem to be equally pertinent to time series research as these accounting practices are evolving over time. The fact that the changes in these accounting practices are likely related to the opening of these emerging markets serves to complicate even more the job of analysts and researchers.

Table 1
Comparison of U. S. and Malaysian Accounting Practices

Issue	U.S. vs. Malaysian practice	U.S. practice (if different from Malaysian)	Malaysian practice (if different from U.S.)	Financial statement effects of Malaysian practice compared to U.S. practice
Historical cost basis	Same			
Inventory	Same			
Investments (including marketable securities)	Same			
Fixed assets	Different	Writedowns permitted to record permanent declines in value.	Can be written down or (more often) up to market value. Writeup (writedown) is credited (debited) to a shareholders' equity reserve account out of which stock dividends can be issued.	Higher annual depreciation expense (usually); lower gains on disposal of fixed assets. Effect on net income ambiguous. Total assets normally higher.
Leased assets	Same			
Depreciation	Same			
Goodwill	Different	Purchased goodwill capitalized and amortized over useful life (maximum 40 years). Negative goodwill is deducted from fair market value of assets acquired.	Purchased goodwill eliminated against shareholders' equity. (Goodwill acquired after January 1, 1994, is capitalized and amortized over a maximum of 25 years. Negative goodwill is credited to a capital reserve account.)	Higher net income; lower total assets and shareholders' equity.
Consolidation practices (other than goodwill)	Same			
Research & development	Same			
Pension costs	Different	Provided for annually.	Provided for "regularly".	Ambiguous.
Deferred taxes	Same			
Contingent liabilities	Same			
Foreign currency translation	Same			

Table 2
Comparison of U. S. and Malaysian Reporting and Disclosure Practices

Issue	U.S. vs. Malaysian practice	U.S. practice (if different from Malaysian)	Malaysian practice (if different from U.S.)
Income statement items	Different		Cost of goods sold; Sales, general and administrative expenses; and foreign exchange gains and losses are typically not disclosed separately.
Minority interest	Same		
Balance sheet format	Different	Assets = Liabilities + Shareholders' equity	Fixed assets + net working capital - long-term debt Shareholders' equity
Current assets and liabilities disclosed separately	Same		
Fixed assets	Different	Accumulated depreciation generally disclosed.	Fixed assets presented net of accumulated depreciation. Accumulated depreciation not disclosed separately.
Earnings per share	Same		
Dividends per share	Different	Gross per share disclosed.	Amount net of tax adjustment disclosed.

Table 3

Comparisons of the parameters of the distributions of reported ROE and D/E ratios calculated from the total samples available on each database, various years (without adjustment)

Year	N	Mean	Std dev.	Max.	Min.	Median	Quart. 3	Quart. 1
ROE, as reported by Disclosure, total sample								
1993	162	18.06	32.24	255.82	-6.08	13.74	24.22	6.24
1992	147	16.32	15.73	114.33	-18.39	12.78	20.85	7.81
1991	79	37.90	168.44	1507.02	-12.08	14.26	26.30	7.38
1990	75	21.19	29.54	211.23	-34.27	13.86	30.74	5.36
ROE, as reported by Infostat, total sample								
1993	80	8.51	26.42	77.44	-206.09	9.22	14.18	5.56
1992	82	10.00	8.24	34.84	-22.54	9.64	13.56	4.84
1991	82	10.28	13.00	51.57	-56.66	8.05	14.53	4.35
1990	84	11.17	11.90	69.91	-6.09	7.10	17.03	3.79
ROE, as calculated from PACAP, total sample								
1993	354	3.94	68.56	10.26	-866.10	9.90	15.80	4.80
1992	324	10.10	25.88	31.79	-195.10	9.65	15.90	4.45
1991	308	7.08	72.84	6.33	-1230.50	9.60	18.15	4.20
1990	242	11.71	39.55	533.00	-108.70	7.55	14.20	2.60
D / E ratios, as reported by Disclosure, total sample								
1993	146	59.63	132.36	1363.39	0.02	30.97	62.27	9.27
1992	164	40.36	67.75	495.27	-400.25	27.79	55.66	8.93
1991	124	40.18	60.66	339.57	-375.32	29.77	62.02	13.54
1990	69	45.38	59.67	371.16	0.01	28.70	51.71	9.54
D / E ratios, as calculated from Infostat, total sample								
1993	80	89.39	107.00	592.63	4.54	50.91	116.32	24.84
1992	82	74.43	94.50	633.07	2.90	51.11	82.65	20.64
1991	82	79.74	84.47	391.84	3.63	50.62	111.35	23.83
1990	84	75.24	81.37	420.54	-99.01	48.75	96.42	25.18
D / E ratios as calculated from PACAP, total sample								
1993	354	87.01	136.18	895.80	-1361.20	66.60	114.70	34.00
1992	324	73.96	117.12	725.60	-1226.20	60.30	103.35	29.95
1991	307	120.47	709.77	12372.90	-591.30	60.40	117.10	31.30
1990	241	78.56	164.15	1846.40	-692.50	49.20	101.80	24.20

Table 4
Comparisons of the distributions of reported return on equity (ROE)[a] ratios for non-financial firms, 1990-1993: Infostat vs. Disclosure vs. PACAP

	Deciles[b]											Prob. χ^2 [c]	
	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	N	Disc.	PACAP
ROE 1993													
Limit point[d]	1.0	4.0	6.0	7.7	9.9	12.2	14.2	17.1	22.7	102.2			
Infostat	0.03	0.13	0.13	0.13	0.15	0.09	0.11	0.10	0.06	0.09	80	**0.020**	0.527
Disclosure	0.07	0.07	0.06	0.11	0.09	0.04	0.11	0.09	0.10	0.26	162		**0.000**
PACAP	0.10	0.11	0.10	0.10	0.11	0.10	0.10	0.11	0.10	0.10	354		
ROE 1992													
Limit point[d]	0.6	3.6	5.4	7.5	9.65	11.9	14.9	17.7	24.8	317.9			
Infostat	0.06	0.11	0.10	0.12	0.11	0.12	0.15	0.11	0.06	0.06	82	**0.017**	0.786
Disclosure	0.07	0.08	0.12	0.05	0.07	0.07	0.12	0.06	0.16	0.21	147		**0.013**
PACAP	0.11	0.10	0.11	0.10	0.10	0.11	0.10	0.10	0.10	0.10	324		
ROE 1991													
Limit point[d]	-0.5	3.0	5.1	7.6	9.60	12.1	15.4	20.0	31.2	63.3			
Infostat	0.07	0.10	0.13	0.16	0.05	0.09	0.20	0.06	0.07	0.07	82	0.145	0.175
Disclosure	0.04	0.05	0.08	0.09	0.09	0.09	0.14	0.13	0.08	0.20	79		0.157
PACAP	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	308		
ROE 1990													
Limit point[d]	-3.0	1.3	3.6	5.7	7.55	10.0	13.1	17.1	26.0	533.0			
Infostat	0.04	0.12	0.10	0.18	0.11	0.06	0.10	0.06	0.13	0.12	84	0.061	0.396
Disclosure	0.04	0.07	0.03	0.07	0.15	0.04	0.08	0.09	0.13	0.31	75		**0.001**
PACAP	0.10	0.11	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	242		

NOTES

a: ROE (%) figures are taken directly from Disclosure and Infostat and are calculated from PACAP data (=net income/total equity).

b. Deciles are determined for the total pooled sample of observations from all three databases for each year. For each database, within each year, we then present the proportion of observations falling within each decile.

c. χ^2 statistics are estimated to test the hypothesis that the samples from each possible pairing of databases are drawn randomly from populations with identical distributions. The p-values are presented, and those with a value less than 0.05 are in bold face.

d. The limit points are the upper limits for each of the deciles determined as in note b above.

Table 5
Comparisons of the distributions of reported debt-equity (D/E)[a] ratios for non-financial firms, 1990-1993: Infostat vs. Disclosure vs. PACAP

	Deciles[b]											Prob. χ^2 [c]	
	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	Obs	Disc.	PACAP
D/E 1993													
Limit point[d]	15.5	27.60	40.20	52.40	66.60	85.60	104.9	129.0	178.0	895.8			
Infostat	0.13	0.15	0.09	0.15	0.08	0.09	0.05	0.06	0.10	0.11	80	**0.007**	0.631
Disclo-sure	0.36	0.11	0.08	0.12	0.12	0.05	0.05	0.05	0.03	0.04	146		**0.000**
PACAP	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	354		
D/E 1992													
Limit point[d]	10.4	22.30	36.30	46.5	60.30	74.10	90.30	118.5	173.0	725.6			
Infostat	0.12	0.15	0.09	0.10	0.13	0.09	0.10	0.07	0.09	0.07	82	**0.017**	0.918
Disclo-sure	0.29	0.15	0.16	0.07	0.10	0.08	0.05	0.05	0.02	0.02	147		**0.000**
PACAP	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	324		
D/E 1991													
Limit point[d]	11.1	23.90	36.20	47.20	60.40	78.30	99.60	128.1	176.4	12372			
Infostat	0.12	0.13	0.11	0.11	0.11	0.10	0.04	0.07	0.11	0.10	82	**0.023**	0.871
Disclo-sure	0.23	0.20	0.14	0.09	0.08	0.13	0.05	0.03	0.03	0.02	79		**0.000**
PACAP	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	308		
D/E 1990													
Limit point[d]	7.10	16.60	29.60	40.00	49.20	69.30	85.00	119.4	171.4	1846			
Infostat	0.10	0.08	0.11	0.13	0.08	0.12	0.11	0.07	0.07	0.13	84	0.202	0.968
Disclo-sure	0.20	0.13	0.17	0.12	0.09	0.12	0.06	0.01	0.06	0.04	75		0.059
PACAP	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	242		

NOTES

a: D/E (%) figures are taken directly from Disclosure and Infostat and are calculated from PACAP data (=[current liabilities + long-term debt]/total equity).

b. Deciles are determined for the total pooled sample of observations from all three databases for each year. For each database, within each year, we then present the proportion of observations falling within each decile.

c. χ^2 statistics are estimated to test the hypothesis that the samples from each possible pairing of databases are drawn randomly from populations with identical distributions. The p-values are presented, and those with a value less than 0.05 are in bold face.

d. The limit points are the upper limits for each of the deciles determined as in note b above.

Table 6

Comparisons of the parameters of the distributions of ROE and D/E ratios calculated from the matched samples on each data base, 1990-1993 (without adjustment)

ROE, as reported by Disclosure and calculated from PACAP for matched samples							
		Disclosure			PACAP		
Year	Nb	Mean	Std	Med	Mean	Std	Med
1993	161	18.08	32.34	13.75	6.33	70.68	11.40
1992	146	16.35	15.78	12.83	12.12	10.14	10.40
1991	78	38.33	169.48	14.29	13.61	10.63	10.90
1990	73	21.49	29.89	14.42	12.24	14.41	10.20
ROE, as reported by Infostat and calculated from PACAP for matched samples							
		Infostat			PACAP		
1993	80	8.51	26.42	9.22	0.96	98.82	9.85
1992	82	10.00	8.24	9.64	11.06	10.31	9.50
1991	82	10.28	13.00	8.05	10.16	15.28	9.20
1990	83	11.23	11.96	7.13	11.68	13.47	7.50
ROE, as reported by Infostat and Disclosure for matched samples							
		Infostat			Disclosure		
1993	59	7.50	29.21	9.78	16.24	20.59	15.49
1992	60	10.76	8.88	10.27	16.01	14.36	12.63
1991	53	12.63	11.20	10.95	18.01	20.27	13.27
1990	53	12.73	12.72	9.42	21.63	32.39	13.46
D/E ratios, as reported by Disclosure and calculated from PACAP for matched samples							
		Disclosure			PACAP		
Year	N	Mean	Std	Med	Mean	Std	Med
1993	144	59.78	133.27	30.07	102.63	125.44	68.25
1992	163	40.22	67.94	27.71	79.41	91.12	60.80
1991	123	39.90	60.83	28.53	77.78	94.97	68.80
1990	67	44.50	60.32	28.16	83.04	81.00	55.00
D/E ratios, as calculated from Infostat and PACAP for matched samples							
		Infostat			PACAP		
1993	80	89.39	107.00	50.91	78.28	86.29	49.50
1992	82	74.43	94.50	51.11	65.21	63.62	45.95
1991	82	79.74	84.47	50.62	70.83	67.04	48.05
1990	83	75.37	81.85	48.30	71.19	79.61	45.90
D/E ratios, as calculated from Infostat and reported by Disclosure for matched samples							
		Infostat			Disclosure		
1993	49	103.94	123.73	58.70	48.75	79.61	22.05
1992	56	88.76	108.12	56.44	42.33	71.75	26.84
1991	52	90.91	87.74	58.03	38.33	46.91	22.05
1990	45	87.95	85.44	53.42	44.05	66.54	22.29

Table 7
Differences in values of financial statements items for Malaysian firms common to the Infostat and Disclosure Databases, 1990-1993

Year	N	% of Perf. matches[a]	% of ± 5% matches[b]	Mean difference[c]	Infostat > Disclosure		Disclosure> Infostat	
					N	Mean	N	Mean
				Sales				
1993	59	93.2	93.2	-1.22	1	8.74	3	-26.92
1992	65	92.3	95.4	-0.33	3	12.52	2	-29.37
1991	60	90.0	95.0	0.17	3	19.19	3	-15.74
1990	53	88.7	90.6	0.38	2	50.86	4	-20.37
				Net Earnings Before Extraordinary Items				
1993	60	96.7	96.7	-0.75	0	0.00	3	-15.00
1992	67	97.0	97.0	-0.39	1	0.00	3	-8.63
1991	62	90.3	98.4	-0.14	3	0.82	4	-2.77
1990	55	90.9	90.9	0.48	4	13.00	5	-5.16
				Net Earnings				
1993	60	96.7	96.7	-0.75	0	-	2	-22.50
1992	67	97.0	97.0	-0.39	0	-	2	-12.95
1991	62	79.0	91.9	-4.49	4	0.89	9	-31.33
1990	55	90.9	92.7	0.42	4	11.45	3	-7.64
				Total Assets				
1993	60	61.7	93.3	1.90	24	4.74	0	-
1992	67	55.2	89.6	1.56	30	3.49	0	-
1991	62	53.2	91.9	1.17	29	2.49	0	-
1990	55	52.7	87.3	1.29	23	3.46	3	-3.00
				Short Term Assets				
1993	56	57.1	91.1	2.38	22	6.16	3	-0.78
1992	59	49.2	83.1	8.55	25	20.46	5	-1.38
1991	56	51.8	85.7	4.89	24	11.75	3	-2.80
1990	49	51.0	83.7	5.77	20	15.70	4	-7.87
				Total Equity				
1993	60	96.7	98.3	0.56	1	34.09	1	-0.21
1992	67	98.5	100.0	0.00	0	-	1	-0.23
1991	62	95.2	98.4	0.93	2	28.89	1	-0.25
1990	55	87.3	96.4	0.46	2	19.07	5	-5.60
				Long Term Debt				
1993	59	96.6	96.6	0.00	1	100.0	1	-100.0
1992	66	100.0	100.0	0.00	0	-	0	-
1991	61	93.4	95.1	0.67	2	50.13	2	-29.85
1990	55	87.3	90.9	0.57	3	37.79	4	-20.44

NOTES

a: A perfect match (Perf. match) occurs when the reported value in Infostat is within 1000 Ringits of the value reported by Disclosure.

b: A 5% match occurs when the absolute difference between the Infostat and Disclosure values is less than 5% of the value reported by Infostat.

c: The mean difference is the mean of the Infostat value less the Disclosure value, across all cases.

Table 8
Differences in values of income statements variables for Malaysian firms common to the Infostat and PACAP databases, 1990-1993

Year	N	% of Perf. matches[a]	% of ± 5% matches[b]	Mean difference[c]	Infostat>PACAP		PACAP>Infostat	
					N	Mean	N	Mean
				Sales				
1993	80	96.3	96.3	40.66	3	1084.18	0	-
1992	82	95.1	95.1	29.40	3	817.01	1	-40.32
1991	82	96.3	97.6	1.77	2	74.66	1	-3.88
1990	83	91.6	95.2	1.01	4	29.03	3	-10.79
				Net earnings before extraordinary items				
1993	80	98.8	98.8	-0.36	0	-	2	-14.47
1992	82	98.8	98.8	-0.07	1	0.00	2	-2.95
1991	82	92.7	98.8	-5.00	3	0.82	4	-103.11
1990	83	94.0	96.4	-0.29	4	5.78	4	-11.75
				Net earnings				
1993	80	98.8	98.8	-0.29	0	-	2	-11.73
1992	82	97.6	98.8	-0.10	0	-	3	-2.77
1991	82	89.0	97.6	-206.48	5	25.72	4	-4264.96
1990	83	94.0	97.6	-0.26	3	7.65	4	-11.09
				Total Assets				
1993	80	45.0	91.3	1.92	44	3.50	1	-0.34
1992	82	42.7	87.8	1.72**	46	3.06	3	-0.05
1991	82	43.9	89.0	1.43**	45	2.62	1	-0.37
1990	83	43.4	88.0	-26.89*	43	2.77	5	-470.22
				Short Term Assets				
1993	80	56.3	83.8	-4.23	35	6.48	1	-565.11
1992	82	53.7	81.7	10.38**	38	22.39	1	0.00
1991	82	56.1	84.1	7.07	36	16.35	1	-8.85
1990	83	55.4	83.1	4.60	33	22.87	6	-62.14
				Total Equity				
1993	80	30.0	58.8	12.53**	56	17.89	1	0.00
1992	82	29.3	56.1	11.63**	60	15.89	0	-
1991	82	29.3	56.1	12.45**	59	17.30	1	-0.01
1990	83	33.7	62.7	9.42**	54	14.53	6	-0.51
				Long Term Debt				
1993	80	95.0	95.0	2.50*	3	100.00	1	-100.00
1992	82	96.3	97.6	1.81*	3	49.61	2	-0.10
1991	82	89.0	93.9	5.02**	9	45.73	0	-
1990	83	91.6	95.2	3.74	8	38.86	1	-0.30

NOTES

a: A perfect match (Perf. match) occurs when the reported value in Infostat is within 1000 Ringits of the value reported by PACAP.

b: A 5% match occurs when the absolute difference between the Infostat and PACAP values is less than 5% of the value reported by Infostat.

c: The mean difference is the mean of the Infostat value less the PACAP value, across all cases.

*(**): Difference significant at $p<0.05$ ($p<0.01$).

Table 9
Differences in values of financial statement variables for Malaysian firms common to the PACAP and Disclosure Databases, 1990-1993

Year	N	% of Perf. matches[a]	% of ± 5% matches[b]	Mean difference[c]	PACAP>Disclosure		Disclosure>PACAP	
					N	Mean	N	Mean
				Sales				
1993	167	92.8	94.0	-2.12**	2	5.99	10	-36.63
1992	192	91.1	92.7	-1.54*	4	26.87	13	-30.98
1991	150	91.3	94.0	0.31	7	27.10	6	-24.07
1990	80	90.0	92.5	118.20	5	1902.19	3	-18.25
				Net Earnings Before Extraordinary Items				
1993	168	97.6	98.8	-0.24	3	1.53	4	-11.25
1992	194	95.9	96.9	-0.73**	2	0.19	10	-14.12
1991	152	96.1	96.7	3.18	6	100.04	5	-23.31
1990	83	92.8	92.8	-7.69	3	58.97	4	-203.83
				Net Earnings				
1993	168	95.8	97.0	-1.20	7	4.18	7	-32.99
1992	194	94.3	95.9	-0.95	4	1.63	10	-19.02
1991	151	92.7	94.7	-1.86	4	147.45	8	-38.61
1990	82	93.9	93.9	-6.64	3	56.90	2	-357.66
				Total Assets				
1993	168	88.1	100.0	-0.05**	5	0.14	18	-0.52
1992	194	86.1	99.0	-0.17	8	0.02	28	-1.16
1991	151	82.8	98.7	1.05	5	38.73	27	-1.28
1990	82	82.9	97.6	1.44**	2	70.04	15	-1.48
				Short Term Assets				
1993	153	93.5	98.0	-0.18*	4	0.17	11	-2.61
1992	173	94.8	98.8	-0.13**	6	0.00	12	-1.87
1991	134	92.5	95.5	0.77	4	33.20	11	-2.74
1990	69	91.3	98.6	-0.26**	0	-	6	-3.04
				Total Equity				
1993	168	35.1	66.1	-6.31**	3	0.00	111	-9.55
1992	194	40.2	73.7	-5.13**	3	0.04	116	-8.59
1991	151	43.0	68.9	-5.21**	2	58.63	88	-10.28
1990	82	31.7	62.2	-5.31**	5	19.93	55	-9.73
				Long Term Debt				
1993	167	93.4	95.8	0.75	7	36.14	5	-25.70
1992	192	95.3	97.4	1.1	6	41.27	4	-9.28
1991	150	92.0	95.3	12.93	7	287.42	6	-11.97
1990	82	87.8	91.5	-1.05	4	8.97	10	-12.23

NOTES

a: A perfect match (Perf. match) occurs when the reported value in PACAP is within 1000 Ringits of the value reported by Disclosure.

b: A 5% match occurs when the absolute difference between the PACAP and Disclosure values is less than 5% of the value reported by PACAP.

c: The mean difference is the mean of the PACAP value less the Disclosure value, across all cases.

*(**): Difference significant at $p<0.05$ ($p<0.01$).

Table 10
Differences in values of financial statements variables for Malaysian firms common to the Infostat, PACAP and Disclosure databases, 1990-1993,
after adjustments

Year	N	% of Perf. matches[a]	% of ± 5% matches[b]	Mean difference[c]	(1) > (2)		(2) > (1)	
					N	Mean	N	Mean
Adjusted Total Assets[d]: Infostat(1) vs. PACAP (2)								
1993	80	71.3	96.3	1.07	22	4.24	2	-3.70
1992	82	75.6	97.6	0.43	21	1.70	3	-0.05
1991	82	69.5	96.3	0.54	26	1.71	1	-0.37
1990	83	67.5	95.2	0.37	22	1.98	6	-2.12
Adjusted Short Term Assets[d]: Infostat (1) vs. PACAP (2)								
1993	80	85.0	95.0	0.53	11	4.90	1	-11.60
1992	82	92.7	96.3	2.78	8	28.50	1	0.00
1991	82	87.8	95.1	1.41	10	12.46	1	-8.85
1990	83	81.9	92.8	2.75	9	35.81	8	-11.70
Adjusted Total Shareholders' Equity[e]: Infostat (1) vs. PACAP (2)								
1993	80	91.3	98.8	0.45	9	4.02	1	0.00
1992	82	91.5	98.8	0.26	9	2.39	0	-
1991	82	87.8	97.6	1.00	1	7.45	2	0.00
1990	83	81.9	96.4	0.84*	14	5.25	7	-0.59
Adjusted Total Shareholders' Equity[e]: PACAP (1) vs. Disclosure (2)								
1993	168	96.4	100.0	-0.01*	5	0.00	12	-0.15
1992	194	94.3	99.0	-0.19*	2	0.00	12	-3.05
1991	151	92.1	97.4	0.31	3	40.01	14	-5.19
1990	82	84.1	92.7	0.29	5	19.88	13	-5.79

NOTES

a: A perfect match (Perf. match) occurs when the reported value in database (1) is within 1000 Ringits of the value reported by database (2).

b: A 5% match occurs when the absolute difference between the database (1) and database (2) values is less than 5% of the value reported by database (1).

c: The mean difference is the mean of the database (1) value less the database (2) value, across all cases.

d: Related loans are removed from PACAP current and total assets to be consistent with the treatment accorded by Infostat and Disclosure.

e: Minority interest is removed from PACAP shareholders' equity to be consistent with the treatment accorded by Infostat and Disclosure.

*(**): Difference significant at $p<0.05$ ($p<0.01$).

Table 11
Differences in calculated ratios for Malaysian firms common to the Infostat, PACAP and Disclosure Databases, 1990-1993, *after adjustments*

Year	N	% of Perf. matches[a]	% of ± 5% matches[b]	Mean difference[c]	(1) > (2)		(2) > (1)	
					N	Mean	N	Mean
Debt-equity ratio[d]: Infostat (1) vs. Disclosure (2)								
1993	55	80	90.9	1.35	38	1.96	17	-0.02
1992	58	77.6	87.9	2.9	42	4.02	15	-0.03
1991	55	69.1	85.5	0.33	34	4.31	21	-6.11
1990	49	59.2	81.6	1.76	36	4.88	13	-6.89
Return on equity[e]: Infostat (1) vs. Disclosure (2)								
1993	60	96.7	100	-0.11	31	0.03	29	-0.26
1992	67	98.5	100	-0.04	36	0.02	31	-0.12
1991	62	91.9	93.5	-1.07	27	0.03	34	-1.97
1990	55	90.9	98.2	0.06	24	0.46	31	-0.25
Debt-equity ratio[d]: Infostat (1) vs. PACAP (2)								
1993	80	92.5	95	0.29	12	3.74	9	-2.42
1992	82	92.7	95.1	0.68	8	8.22	10	-1
1991	82	82.9	92.7	-0.52	19	4.24	7	-17.63
1990	84	79.8	88.1	-0.51	18	4.85	14	-9.29
Return on equity[e]: Infostat (1) vs. PACAP (2)								
1993	80	98.8	100	-0.05	40	0.03	39	-0.13
1992	82	98.8	100	-0.04	38	0.02	44	-0.1
1991	82	95.1	98.8	-0.33	34	0.09	48	-0.64
1990	83	94	100	-0.12	35	0.09	47	-0.28
Debt-equity ratio[d]: PACAP(1) vs. Disclosure (2)								
1993	152	99.3	99.3	1.72	84	0.04	68	-0.44
1992	171	97.1	97.7	1.97	78	0.52	91	-0.12
1991	133	94.7	96.2	1.8	67	1.43	65	-0.42
1990	69	85.5	87	2.06	41	1.20	28	-3.53
Return on equity[e]: PACAP (1) vs. Disclosure (2)								
1993	168	97	99.4	0.27	6	9.32	3	-3.43
1992	194	94.8	99	-0.13	10	0.80	9	-3.59
1991	151	93.4	97.4	-0.1	10	2.79	8	-5.46
1990	82	89	96.3	0.58	13	3.75	1	-1.3

NOTES

a: A perfect match (Perf. match) occurs when the reported value in database (1) is within 1% of the value reported by database (2).

b: A 5% match occurs when the absolute difference between the database (1) and database (2) values is less than 5% of the value reported by database (1).

c: The mean difference is the mean of the database (1) value less the database (2) value, across all cases.

d: Related loans are removed from PACAP current and total liabilities to be consistent with the treatment accorded by Infostat and Disclosure.

e: Preferred dividends are added back to net income in Disclosure to be consistent with the treatment accorded by Infostat and PACAP.

*(**): Difference significant at $p<0.05$ ($p<0.01$).

References

Colley, J., and A. Volkan. 1988. Accounting for Goodwill. *Accounting Horizons* 2 (March): 35-41.

Demirgüç-Kunt, A. and R. Levine. 1993. Stock Market Development and Financial Intermediary Growth. Working Paper. Policy Research Department, The World Bank.

Chuhan, P. 1994. Are Institutional Investors an Important Source of Portfolio Investement in Emerging Markets? Policy Research Working Paper 124. The World Bank.

Courtenay, S.M., and S. Keller. 1994. Errors in Databases Revisited: An Examination of the CRSP Shares-Outstanding Data. *The Accounting Review* 69 (January): 285-291.

Easton, P., P. Eddey and T. Harris. 1993. An Investigation of Revaluations of Tangible Long-lived Assets. *Journal of Accounting Research* 31 (supplement): 1-38.

Guenther, D.A. and A. Rosman. 1994. Differences Between COMPUSTAT and CRSP SIC Codes and Related Effects on Research. *Journal of Accounting and Economics* 18 (July): 115-128.

Hossain, M., L.M. Tan and M. Adams. 1994. Voluntary Disclosure in an Emerging Capital Market: Some Empirical Evidence from Companies Listed on the Kuala Lumpur Stock Exchange. *The International Journal of Accounting* 29: 224-351.

Kern, B.B. and M. H. Morris. 1994. Differences in the Compustat and Expanded Value Line Databases and the Potential Impact on Empirical Research. *The Accounting Review* 69 (January): 274-284.

Tan L., A. Salleh and H. Ismail. 1994. Asset Revaluation: Some Evidence of Company Practices in Malaysia. *Hong Kong Society of Accountants Sixth Annual Conference of Accounting Academics Conference Proceedings*: 9-18.

Appendix 1. Databases Description

1) Financial Statements

Financial statements were obtained directy from the following Malaysian companies:

1 Consolidated Plantations (1989 to 1993)

2 Tractors Malaysia Holdings (1889 to 1993)

3 Sine Darby (90 to 93)

4 HICOM (1983 to 1993)

5 MISC (1981 to 1993)

6 MAS (1978 to 1993)

7 IGB (1993)

8 United Engineers (Malaysia)

9 NARSCO (National Rubber Smallholder Cooperative)

10 KTM Buhad

11Tenaga Na

2) Infostat (M)

The Infostat database is compiled in Malaysia, by INFO stat (M) Sdn Dhd. This historical database was developed in Malaysia in 1990 and has been collecting data from 1987 onwards. The database covers Malaysia, Singapore and Indonesia and will be extended to Honk Kong and The Philippines in the near future. All data are obtained from official sources, e.g. from published annual reports giving audited accounts and from the respective exchanges. The internal quality team verifies the data integrity. This team applies 15 balancing checks for sifting possible data entry and extraction errors. According to the database developers, these procedures are thorough and about 98% reliable. The final 2% of errors is due mainly to the inconsistency of terms used in the annual reports' presentation. In this version of the paper, we used a subset of this database, composed of 101 firms, from 1985 to 1993.

3) Disclosure

The Wordscope Emerging Market database is published by Wordscope/Disclosure partner, a joint venture of Disclosure Inc., a provider of public company

information, and Wright Investor's Services, an international investment manager. Over 1000 items are provided for each of the 1100 companies in 21 countries (see table A1). The data items report general information, detailed financial information such as a summary of sales, net income, earnings per share and income statements. footnotes and country and industry averages. Fundamental financial data is supplemented by news headlines compiled from more than 35 global newspapers. Wordscope provides up to 7 years of historical data, but 4 years only are available for most companies. Data are retreived from annuals reports and regulatory filing. These data are interpreted by a team of experts. Differences in accounting terminology, statement form and language are minimized through the use of standardized definitions in the coding of accounts by analysts. Disclosure selects the companies included in the Morgan Stanley, Baring Securities and IFC's Emerging Market databases.

4) PACAP

The Pacific-Basin Capital Markets (PACAP) databases are developed by the Sandra Ann Morsilli Pacific-Basin Capital Markets Research Center, College of Business Administration at the University of Rhode Island. As of November 1994, the databases contained historical capital markets data for nine countries in the Pacific-Basin region, with plans to add data for two others in the future. Economic statistics, financial statement and stock returns information were covered from January 1, 1975, to December 31, 1993. Stock market and company information is collected from individual countries' stock exchanges, while sources for economic statistics include publications and data tapes from each country's Central Bank.

Appendix 2.

Discrepancies between some Malaysian firms' financial statements and the DISCLOSURE database[5]

Case A. Malaysian Airlines Systems (MAS) vs. DISCLOSURE (DISC)

(i) Equity accounting

	1989		*1990*		*1991*	
	MAS	DISC	MAS	DISC	MAS	DISC
Pre-tax income	204,532	204,532	200,615	194,111	205,543	201,989
Income tax	47,474	47,474	5,531	2,861	8,150	6,489
Equity in earnings		NA		3,824		1,893

In the MAS financial statements, pre-tax income includes pre-tax income of associated companies. Income tax includes tax on income of those associated companies. DISC follows this reporting up to 1989, after which it removes associated companies' pre-tax income and income tax and reports the net amount as "After-tax equity in earnings".

(ii) Current liabilities

	1989		*1990*		*1991*	
	MAS	DISC	MAS	DISC	MAS	DISC
Trade creditors	257,825		348,987		427,427	
Other creditors	142,071		128,294		156,749	
Accounts payable		NA		477,282		427,427

For 1989, DISC recorded only total current liabilities, none of the nine components reported in the MAS financial statements. For 1990, DISC puts "Trade creditors" and "Other creditors" together into a single item "Accounts payable". For 1991, DISC's "Accounts payable" is the MAS item "Trade creditors" and "Other creditors" is included in "Other current liabilities". DISC "Total current liabilities" agrees with MAS "Total current liabilites" every year.

(iii) Extraordinary items

	1989		1990		*1991*	
	MAS	DISC	MAS	DISC	MAS	DISC
Extraordinary item			29,490	29,490	89,350	
Net income	157,058	157,058	224,573	224,573	286,728	197,378

Recorded extraordinary items and net income are consistent in every year except for 1991, in which DISC does not include an extraordinary gain in net income. The extraordinary gain is presented in the DISC statement of changes in financial position and the DISC capital accounts agree with those of MAS. There is no apparent explanation for this discrepancy.

[5] All amounts are in thousands of Ringits. Italicized years are those in which discrepancies were found.

Discrepancies between some Malaysian firms' financial statements and the DISCLOSURE database (continued)[6]

Case B. Malaysian International Shipping Corporation (MISC) vs. DISCLOSURE (DISC)

(i) Current Liabilities	*1990*		1991		1992	
	MISC	DISC	MISC	DISC	MISC	DISC
Trade creditors	148,473		194,393		169,414	
Other creditors	137,244		95,972		130,734	
Accounts payable		285,717		194,393		169,414
Other current liabilities		0		95,972		130,734

In 1991 and 1992, DISC recorded MISC's "Trade creditors" as "Accounts payable", and "Other creditors, accruals and provisions" as "Other current liabilities". In 1990, DISC combines "Trade creditors" and "Other creditors . . ." under "Accounts payable".

(ii) Foreign currency exchange gains/losses and adjustments	*1990*		*1991*	
	MISC	DISC	MISC	DISC
Unrealized foreign exchange loss (liability)	(25,413)		(14,783)	
Unrealized foreign exchange loss (equity		(24,583)		NA
item)		0		14,783
Deferred charges	2,564,369	2,538,596	3,007,063	3,007,063
Shareholders' equity				

In 1990, DISC removes the (upward) exchange adjustments from capital reserves (824) and retained earnings (6). These amounts are deducted from the liability item "Unrealized loss on variation of currency exchange rates," which is reclassified as a shareholders' equity item. In 1991, DISC leaves the exchange adjustments alone and the "Unrealized loss on variation of currency exchange rates" is presented as a deferred charge.

(iii) Current vs. non-current receivables	*1991*		*1992*	
	MISC	DISC	MISC	DISC
Trade debtors	90,732		119,950	
Net receivables		89,921		118,915
Long-term Receivables		812		1,035

In the MISC financial statements, the current asset item "Trade debtors" contains all trade receivables, even those falling due after more than one year. DISC's "Net receivables" includes only current trade receivables. Receivables falling due after more than one year (the amount is disclosed in a footnote) are classified as "Long-term receivables."

[6]All amounts are in thousands of Ringits. Italicized years are those in which discrepancies were found.

Discrepancies between some Malaysian firms' financial statements and the DISCLOSURE database (continued)[7]

Case C. Sime Darby (SD) vs. DISCLOSURE (DISC)				
(i) Equity Accounting	*1991*		*1992*	
	SD	DISC	SD	DISC
Pre-tax income	678,600	654,200	755,400	738,700
Income tax	207,200	198,400	216,800	210,400
Equity in earnings		15,600		10,300
See explanation in Case A(i), although note that treatment is consistent here.				
(ii) Current vs. non-current receivables	*1991*		*1992*	
	SD	DISC	SD	DISC
Debtors	1,103,400		1,156,900	
Net receivables		877,200		968,500
Long-term receivables		226,200		188,400
See the explanation in Case B(iii) above.				

Case D. IGB Corporation (IGBC) vs. DISCLOSURE (DISC)				
Audit fees	*1991*		*1992*	
	IGBC	DISC	IGBC	DISC
Audit fees	226	331	226	235
There is no apparent explanation for this discrepancy.				

Case E. Tractors Malaysia Holding Berhad (TMHB) vs. DISCLOSURE (DISC)				
Current vs. non-current receivables	*1991*		*1992*	
	TMHB	DISC	TMHB	DISC
Debtors	186,782		159,059	
Amounts owing by related companies	621		1,395	
Net receivables		175,318		155,107
Long-term receivables		12,085		5,347
See the explanation in Case B(iii) above.				

[7] All amounts are in thousands of Ringits. Italicized years are those in which discrepancies were found.

Appendix 3.

Discrepancies between some Malaysian firms' financial statements and the PACAP database[8].

Case A. Malaysian International Shipping Corporation (MISC) vs. PACAP						
(i) Amounts owing to associated comp.	1991		*1992*		1993	
	MISC	PACAP	MISC	PACAP	MISC	PACAP
Investments & other	142,762	142,762	153,025	153,414	274,809	274,809
Other long-term liabilities		(13,717)		(3,621)		(12,967)
Deferred taxes plus unrealized exch. loss	(13,717)		(4,010)		(12,967)	

MISC's "Investments" includes its share in associated companies, according to the equity basis of accounting, plus (minus) any amounts owing from (to) those companies. PACAP follows this accounting except in cases where an amount owing to associated companies is disclosed, as was the case with MISC in 1992. Here, PACAP adds the amount owing (389) back to the Investments account and credits Other long-term liabilities.

Case B. IGB Corporation (IGB) vs. PACAP				
(i) Amounts owing to associated companies	*1992*		*1993*	
	IGB	PACAP	IGB	PACAP
Investments & other	285,554	308,415	333,277	335,970
Other long-term liabilities		34,505		11,990
Deferred taxes	11,749		9,408	

Same explanation as in Case A above. The amounts owing to associated companies were 22,756 in 1992 and 2,582 in 1993.

[8]All amounts are in thousands of Ringits. Italicized years are those in which discrepancies were found.

Appendix 4.

Discrepancies between some Malaysian firms' financial statements and the INFOSTAT database[9]

Case A. SIME DARBY (SD) vs. INFOSTAT (INFO)

(i) Short term borrowings	*1991*		*1992*		*1993*	
	SD	INFO	SD	INFO	SD	INFO
Current liabilities	1,776	1,511	1,813	1,670	2,212	2,068
Short term loans	265	265	144	144	144	144
Net assets	4,324	4,589	4,745	4,890	5,066	5,209

Sime Darby lists short term borrowings, which includes bank overdrafts, the portion of unsecured term loans due within twelve months and other unsecured short term borrowings, as a current liability. The short term borrowings item is contained in INFOSTAT , but is apparently not considered a liability, either current or non-current. As a result, INFOSTAT current liabilities (net assets) are lower (higher) than those reported in Sime Darby's annual report by the amount of the short term borrowings.

(ii) Debtors: Associated companies	*1991*		*1992*		*1993*	
	SD	INFO	SD	INFO	SD	INFO
Debtors	1,103	1,098	1,157	1,137	1,228	1,222
Other NCA		5		20		6

INFOSTAT removes receivables due from associated companies from the Debtors account (and removes debts payable to associated companies from Creditors), and combines the two items as "Other NCA," a current asset item.

Case B. Consolidated Plantations (CP) vs. INFOSTAT (INFO)

Related parties receivables and payables	*1991*		*1992*		*1993*	
	CP	INFO	CP	INFO	CP	INFO
Debtors	113,385	107,001	113,558	106,619	113,751	111,265
Creditors	295,969	282,478	122,245	107,585	344,975	328,258
Other NCA		(7,107)		(7,721)		(14,231)

INFOSTAT removes related parties receivables and payables from "Debtors" and "Creditors", respectively, and combines the receivables and payables as "Other NCA", a current asset item.

[9]All amounts are in millions of Ringits. Italicized years are those in which discrepancies were found.

Discrepancies between some Malaysian firms' financial statements and the INFOSTAT database[10]

Case C. Malaysian Airlines System (MAS) vs. INFOSTAT (INFO)				
Current liabilities	*1991*		*1993*	
	MAS	INFO	MAS	INFO
Sales in advance	294		375	
Prov. maintenance	177		95	
Other NCA		(471)		(470)
Current liabilities	1,574	679	2,335	949
Short term loans	424	424	916	916

There are two separate problems here. First, MAS includes "Sales in advance of carriage" and "Provision for airline maintenance" among its current liabilities. INFOSTAT removes both of these items from current liabilities and combines them under "Other NCA", a current asset with a credit balance. Secondly, INFOSTAT records MAS' short term loans but does not consider them current liabilities (see case A(i) above).

Case D. MISC vs. INFOSTAT (INFO)						
(i) Short term borrowings	*1991*		*1992*		*1993*	
	MISC	INFO	MISC	INFO	MISC	INFO
Short term loans	309	309	117	117	190	190
Current liabilities	693	384	510	393	606	415

Short term borrowings are removed from current liabilities as in case A(i) above.

(ii) Unrealized losses	*1991*		*1992*		*1993*	
	MISC	INFO	MISC	INFO	MISC	INFO
Unrealized losses	15		7		16	
Capital employed	3,291	3,305	3,450	3,457	3,976	3,992

INFOSTAT adds MISC's "Unrealized losses," a shareholders' equity item with a debit balance, back to "Capital employed."

[10] All amounts in millions of Ringits. Italicized years are those in which discrepancies were found.

Discrepancies between some Malaysian firms' financial statements and the INFOSTAT database (continued).[11]

Case E. IGB Corporation (IGB) vs. INFOSTAT (INFO)				
Current liabilities	*1992*		*1993*	
	IGB	INFO	IGB	INFO
Construction contract	49			
Other NCA		(49)		
Short term loans	257,970	257,970	149,859	149,859
Current liabilities	362,594	104,574	200,872	51,013

Short term loans are removed from current liabilities as in case A(i) above. "Construction contract", a current liability, is reclassified by INFOSTAT as a current asset with a credit balance.

Case F. Tractors Malaysia (TM) vs. INFOSTAT (INFO)						
Related parties receivables and payables; short term loans	*1991*		*1992*		*1993*	
	TM	INFO	CP	INFO	CP	INFO
Related company receivables	600		1,400		800	
	5,300		3,300		3,400	
Related company payables		(4,700)		(1,900)		(2,600)
Other NCA	80,400	80,400	14,700	14,700	8,400	8,400
Short term loans	384,000	298,400	248,800	198,900	198,900	187,100
Current liabilities						

INFOSTAT removes related parties receivables and payables from "Debtors" and "Creditors", respectively, and combines the receivables and payables as "Other NCA", a current asset item, as in case B above. In addition, short term loans are removed from current liabilities as in case A(i) above.

[11]All amounts are in millions of Ringits. Italicized years are those in which discrepancies were found.

Appendix 5.

Definitions of the variables and ratios used in the comparison for each database.

Variable (as defined in this paper)	Disclosure	PACAP	Infostat	Malaysian financial statements
Fixed assets	Net PP& E	Net Total Fixed Assets	Tangible FA	Fixed Asset
Sales	Net Sales or Revenue	Annualized Sales (Revenue)	Sales	Turnover
Gross earnings	Operating Income	Annualized Operating Income	Operating Profit	
Net Income after extraordinary items and minority interests	Net Income before Preferred Dividends	Annualized Net Income	Profit Year	Profit Attribuable to Shareholders
Total Assets	Total Assets	Total Assets	Total Fixed Asset + Current Asset	Total Asset
Short Term Liabilities	Total Current Liabilities	Total Current Liabilities	Current Liabilities + Short Term Loans	
	Short Term Debt & Current Long Term Debt	Short Term Debt	Short Term Loans	Short Term Borrowing, Bank Overdraft
Equity	Common Shareholders' Equity	Share Capital + Retained Earnings + Non-Equity Reserves	Share Equity	Issued Share Capital + Reserves + Shareholders' Funds
Short Term Assets	Total Current Asset	Total Current Asset	Current Asset	
Long Term Debt	Long Term Debt	Long Term Debt	L & M Loans	Loans (Long Term Debt)
Earnings per share				
Debt/equity ratio				
Return on equity				

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[1] Vous pouvez consulter la liste complète des publications du CIRANO et les publications elles-mêmes sur notre site World Wide Web à l'adresse suivante :
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