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The Value Relevance of Intangibles Non-Current Assets in Different Economic Conditions

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The issue of value relevance of intangibles non-current assets (NCA) is important in the financial reporting literature due to the ever increasing interest in the components of intangibles assets items including goodwill and intellectual capital. This study examines the value relevance of reported intangibles NCA among firms listed on the main board of Bursa Malaysia throughout a 12 years period from 1990 until 2001. During this time period, Malaysia went through three different economic and accounting environment conditions. Early 1990s saw excellent economic condition but with less stringent accounting regulatory period. During 1997 and 1998 was the financial crisis period. In 1997, the Malaysia Accounting Standards Board (MASB) was established by the Malaysian government. From 1999 until 2001, Malaysia went through a recovery economic period plus a more stringent accounting regulatory framework. Based on the value relevance model, we find evidence that intangibles continuously show negative association with firms' share market price throughout the three different economic periods among our sample firms. However, as expected the association was not significant before compared to after the establishment of MASB. Our finding is consistent with extant studies on the issue of value relevance of intangibles but not consistent with many prior studies on the same issue. Nevertheless our finding is consistent with the ongoing argument and theory of capitalized intangibles more likely to reflect uncertain expected future cash flows, hence value relevance perceived by investors to be bias.

Keywords: Intangibles NCA, value relevance, Malaysia, accounting regulation, economic condition

Field of Research: Accounting, Financial Reporting and Statement Analysis

1. Introduction

The value relevance of intangibles assets have always been of interest to accounting researchers due to the uncertainty nature of the assets (Godfrey et al., 2006). Malaysia specifically issued accounting standard on intangibles only in 2005. Previously Malaysia

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did not have accounting standard on intangibles and did not adopt IAS 38, *Intangibles Assets,* even though it was issued by the International Accounting Standards Board (IASB) in year 1998. The importance of intangibles information is highlighted due to components perceived or actually embedded in the intangibles. These components include items such as R&D, goodwill, patent, brand-name and other identifiable intangibles (Godfrey & Koh, 2001). Nevertheless, the importance of unidentifiable intangibles has been increasingly examined within other research context (Mauldin & Richtermeyer, 2004). For example, the relevance of intellectual capital which includes typically the human capital, firms' structural capital and relational capital has been examined from the aspect of financial and non-financial disclosures (Iatridis, 2006).

The controversial issue of intangibles reporting is on whether it is value relevant even though it is associated with uncertainty with regards to its association with firms' expected future cash flows. Furthermore, it is also very important to understand whether economic condition and accounting environment affect the value relevance of intangibles. The question is how is the value relevant of intangibles in different economic conditions and accounting environment? Prior studies on value relevance of intangibles (for eg. Barth & Clinch, 1998; Godfrey & Koh, 2001; Han & Manry, 2004; Zhao, 2002) rarely investigate on the influence of different economic condition per se. It is expected that during better economic condition, intangibles would be more value relevant compared to during poor economic condition. It is also expected that during stronger accounting regulatory period, intangibles would be more value relevant compared to weak accounting regulatory period. The reporting of intangibles amounts up to hundred millions of Ringgit in Malaysia throughout the 1990s (Zaleha et al., 2005a).

This study examines the value relevance of intangibles assets reported within financial statements of firms listed on the main board of Bursa Malaysia. During the time period of the sample in this study, from 1990 until 2001, Malaysia went through three distinct economic and accounting environments. Early 1990 saw Malaysia went through a flourishing economic period but with a less stringent accounting regulatory framework. During years 1997 and 1998 saw Malaysia facing the financial crisis period. At the same time, in 1997 the Malaysian government formed the Malaysia Accounting Standards Board (MASB), an accounting standards issuing body similar in context to the Financial Accounting Standards Boards (FASB) in the US. Between 1999 until about 2001 Malaysia went through the recovery economic period plus a more stringent accounting regulatory period.

With the existence of the three distinct economic and accounting periods, this study aim to find evidence of possible differences in the value relevance of intangibles throughout the periods. This study found intangibles NCA reported among listed firms in Malaysia to be negatively associated with firms' share prices for samples before, during and after the establishment of MASB and financial crisis period of 1997-1998. For yearly sub-samples, years before and during crisis period of 1997-1998 provide evidence of consistent negative but insignificant associations. All sub-samples for years after the crisis period showed consistent significant negative associations. Finding is consistent

with extant literature (such as Cazavan-Jeny & Jeanjean, 2006) on the value relevance of intangibles. Finding is also consistent with the theory of intangibles generally reflecting uncertain expected future cash flows. This study contributes to extant literature on the issue of value relevance of accounting numbers and especially on the value relevance of reported intangibles in the presence of different accounting environment. The next section of this paper presents literature, conceptual framework and hypothesis development on value relevance of intangibles assets. Section three discusses the methodology adopted in this study. Section four presents results from data analysis. Section five discusses findings and concludes this paper.

2. Literature Review

Intangible NCA is assets with lack direct reference to any particular physical item. Common items of intangible NCA include goodwill and research and development (R&D) costs. Prior literature also includes computer software as intangible asset (Aboody & Lev, 1998). Capitalization of computer software becomes an important issue especially in the US with the issuance of accounting standards on it. Other items also listed among intangibles include advertising expenditures, patents, trade name, trademark, franchise costs and all deferred expenditures such as start-up costs (Godfrey et al., 2006) and deferred taxes (Arcelus, Mitra & Srinivasan, 2005). Intangible NCA is considered as assets having uncertainty element in their association with firms' expected future cash flows (Aboody & Lev, 1998). However, excluding intangibles from NCA might underestimate firms' value (Arcelus et al., 2005).

In the case of accounting for goodwill, only purchased goodwill information can be recognized within the financial statements. Firms' internal goodwill is not allowed to be recognized. Purchased goodwill arises only when a firm bought other firms and pays higher than the market price of the purchased firms' identifiable net assets. Hence, goodwill is associated with expected future performance or growth of the newly combined firms. Goodwill has always been found to be value relevant (Churyk, 2004; Muhd-Kamil et al., 2003). Accounting for R&D expenditures is still controversial until today (Eckstein, 2004). Even though prior literature provide vast evidence of the usefulness of R&D costs (Boone & Raman, 2001; Bublitz & Ettredge, 1989; Ely & Waymire, 1999; Zhao, 2002), almost all relevant accounting standards only allows development costs to be capitalized, all research costs should be expensed. R&D activities are important to firms to ensure they maintain their competitiveness within the industry they operated. Especially starting early 1990s, there was rapid technological change affecting products and services innovation and marketing. Among others, firms' must made available reliable soft-wares to increase sales and revenues of their products (De Angelis, Habib, Davide & Naghshineh, 2005).

Even though not all concepts of intangible assets can be capitalized in accounting, all concepts of intangible assets are useful in the realization of firms' future cash flow (Arcelus et al., 2005; Han & Manry, 2004). For example, advertising expenditures are incurred to ensure increase in future revenues from the advertisement of products and

services (Bublitz & Ettredge, 1989). Human resource expenditures such as training costs are incurred to ensure increase in future firms' performances overall, in sales and service revenues. Human capital expenditures that fall within the category of intellectual capital influence the perception of financial statement users towards the firms, in terms of value and image (Stewart, 1997). Other intangible assets, such as advertising expenditures, patents, brand name, trade mark, and trade name influence firms' product prices and eventually revenues and earnings (Godfrey & Koh, 2001). Even though prior studies generally found intangibles to be value relevant, however there is lack evidence on whether economic conditions and accounting environment might influence the value relevance of these intangibles. Prior studies provide evidence of economic conditions and accounting environment affect the value relevance of accounting numbers (see Davis-Friday et al., 2006; Hall & Oriani, 2006).

Economic Condition and Accounting Environment in Malaysia

Malaysia went through strong economic condition during the early 1990s. However, even though there were two accounting bodies controlling the accounting environment then, namely the Malaysian Institute of Accountants and the Malaysian Association of Certified Public Accountants, the existing accounting standards were not mandatory for implementation by listed firms. Accounting standards on intangibles available then include the Malaysia Accounting Standard (MAS) 6, *Accounting for Goodwill,* and International Accounting Standard (IAS) 9, *Research and Development Costs*, applicable for implementation until 1997 among accounting bodies members only. In year 1997, the Malaysian government set up the Malaysian Accounting Standards Board (MASB) to take responsibility towards accounting standards overall in Malaysia. MASB per se is not authorized to regulate the accounting standards. Authority comes from the Securities Commission and Bank Negara (the national bank) for the regulation of accounting standards in Malaysia. Year 1998 and 1999 saw MASB rigorously finalizing accounting standards for implementation starting as early as mid 1999 and mainly January 2000. Year 1997 and 1998 also saw Malaysia facing with the Asian financial crisis period (Davis-Friday et al., 2006).

At the same time, in 1998, the International Accounting Standards Board (IASB) issued IAS 38 *Intangible Assets*, guiding the accounting for intangibles in countries adopting the IASB standards. However, IAS 38 was not adopted in Malaysia then. IAS 38 provides guidelines on the accounting of all other identifiable intangibles, other than R&D and goodwill. This would include patents, trademark, trade-name, and identifiable contracting documents such as franchise costs, customer list, advertising and marketing costs. Other standards on intangibles applicable after the establishment of MASB include MASB 21, *Business Combinations,* and MASB 4, *Research and Development Costs*. In order to be compatible with other international standards, in year 2004, MASB issued Financial Reporting Standards (FRS) replacing MASBs. FRS 138, *Intangible Assets,* is applicable in Malaysia starting year 2006. FRS 138 covers the accounting of all intangibles including R&D, goodwill and all other identifiable intangibles generally. In general, FRS 138 and other accounting standards require firms to recognize all intangible assets at cost. Only FRS 138 generally allows intangibles subsequent

measurement at revaluation subject to marketability. FRS 138 is conceptually and technically similar to IFRS 38, *Intangible Assets,* issued by the IASB.

Conceptual Framework

Conceptual framework in this study is based on the decision usefulness paradigm. This paradigm suggests that accounting information is useful if utilized by financial statements users for or significantly associated with their decision making (Riahi-Belkaoui, 2000) even though the information might not be stated at their best current value (Scott, 2000). Within this concept, the main users are those who make decisions having an impact on firms' value, specifically decision making by capital market participants (Beaver, 2002; Riahi-Belkaoui, 2000). The decision usefulness paradigm suggests several theories to explain usefulness of information in intangibles NCA. Under the information content concept, accounting information is useful based on explanation on issues coming from the signaling theory. Availability of signals from intangibles NCA information links the information towards the value relevance concept which evidence is based on the existence of the efficient market hypothesis (EMH).

The information content concept commonly adopted by prior literature investigates capital market participants' reaction towards firms' news within a very short time period, previously a few days (Ball & Brown, 1968; Henderson et al., 1992) to recently within a shorter time period. However, many other studies also investigate information content of accounting information within a much longer period, such as months or even years (see Easton, Eddey & Harris, 1993; Barth & Clinch, 1998). Information content concept suggests that if intangible NCA has informational content will mean intangible has information reflecting relevant and reliable information it purports to reflect. Following the informational content concept available in intangibles information, signaling theory suggest that managers' action shown through the reporting of accounting information provide signals to the capital market (Scott, 2000). The idea of signaling theory is in order to ensure that capital market do not undervalue firms in their decision making, hence information provided by firms' managers ought to be close to the truth (Scott, 2000, p.411). The same applies to intangibles NCA information. Reported intangibles and changes in intangibles should signal the true position of firms related to intangibles issues. If firms provide the wrong signal to the market and eventually market realize the truth, market will penalize firms by lowering firms' share market price, which would affect managers' benefits later should management compensation is based on firms' share market price (Ball, Robin & Wu, 2003).

For example, changes in reported intangibles could be due to goodwill from mergers and acquisition activities (Churyk, 2004), the acquiring of patents by firms (Godfrey & Koh, 2001), the capitalization of R&D costs (Han & Manry, 2004; Boone & Raman, 2001), or the capitalization of computer software (Aboody & Lev, 1998). Once capital market participants perceived the right signals from intangibles information, they will react in a way which makes intangibles information relevant for decision making involving the particular firm value. In discussing the concept of relevance with regards to accounting information, Riahi-Belkaoui (2000) believes that accounting information is

relevant if the information can influence decisions made by decision makers. For example, intangible is relevant towards capital market participants if it provide information useful for the setting of firms' share market prices. Aboody and Lev (1998) suggest that US firms' software capitalization has information content because they found that capitalized software among 163 US firms between 1987 until 1995 period was positively associated with firms' share market prices. Value relevance concept is based on evidence found in the theory of EMH.

One theory that conceptually confirmed the informational content of intangible NCA is when capital market participants utilized intangible NCA information towards their decision making. The assumption is that decisions are made efficiently, i.e. the market follows the theory of EMH. EMH suggest that at all times, firms' share market prices conceptually reflected all needed information about firms' value (Riahi-Belkaoui, 2000). Hence, no individual participant can obtain abnormal returns by trading firms' shares based on the same information that other participants utilized. In this study, the assumption is that intangibles provide public information reliable and relevant for the purpose of decision making, hence significantly associated with firms' value.

Hypotheses Development

Development of hypotheses is focused to answer the main question asked in this study, that is, whether intangible NCA has value relevance during different economic and accounting periods. Since this study focus on intangible NCA value relevance during different economic periods, hypotheses development is separated into the two distinct economic periods, namely non-crisis and crisis periods.

Economic Non-Crisis Period

Hypotheses development on the value relevance of intangible NCA during economic non-crisis period would show general predictions on the value relevance of intangibles. Non-crisis period suggests intangibles would provide information without any serious setbacks hindering financial statement users to make the best decision making, as found in most prior studies (such as Aboody & Lev, 1998; Churyk, 2004; Godfrey & Koh, 2001; Muhd-Kamil et al., 2003). With regards to investors' decision making, there is no controversial issue on the information content of reported intangible NCA during non-crisis period, except prior literature examine more on total assets or net assets information (Fauver, Houston & Naranjo, 2003; Frank, 2002; Hirshleifer et al., 2004; Kousenidis, Negakis & Floropoulos, 2000). This might be because total assets and net assets have taken into consideration all risks associated with them. However, such approach hinders potential to find evidence on intangible NCA information issues when intangible as one item is unique to investors for their predictions of firms' expected future cash flows.

Apart from net assets, prior literature generally found positive association between components of intangible NCA and firms' share prices. For example, Aboody and Lev (1998) found capitalized software among US firms for the period 1987-1995 positively

associated with firms' share market prices. Findings also showed positive association between capitalization of software expenditures with both operating and net income for up to two years after capitalization activities (Aboody & Lev, 1998). Muhd-Kamil et al. (2003) based on Malaysian firms data for the period 1992-1997 found goodwill positively associated with firms' market value. Churyk (2004) based on US firms data for the period 1996-1998 also found similar results. Kohlbeck (2004) found almost all components of intangible assets of US publicly traded banks, whether recorded or not, are value relevant and reliable towards firms' valuation for the period 1994-1998.

Nevertheless, earlier on, Bublitz and Ettredge (1989) based on US firms data for the period 1974-1983 found advertising expenses negatively associated with cumulative abnormal returns (CAR), while R&D expenditures insignificantly associated. Lately, Cazavan-Jeny and Jeanjean (2006) found among French firms for the period 1993-2002, capitalized R&D negatively associated with share market prices and returns. Prior literature provides evidence that investors utilized intangibles towards decision on firms' value. However, due to high uncertainty issue on intangibles always proposed by professional investors (see Barron et al., 2002), plus the effect of lack accounting regulation prior to MASB establishment, the sign of the association might not be clear before 1997. Therefore, with regards to intangible information value relevance during economic period before 1997, hypothesis 1A is stated as follows:

Hypothesis 1A: *Reported intangible NCA is associated with firms' share prices during economic non-crisis and weak accounting regulatory period.*

The value relevance of intangibles in the presence of a strong accounting regulatory period might be clearer compared to in its absence (Barth et al., 2001a; Hung, 2001). Since the presence of accounting standards is aim to assist accountants and preparers to report and present a more reliable and relevance accounting information, hence existence of a strong accounting regulatory environment is expected to reflect existence of more reliable intangibles information. Hence, in the presence of a strong accounting regulatory environment during non-crisis economic period, the hypothesis is stated as follows:

Hypothesis 1B: *Reported intangible NCA is positively associated with firms' share prices during economic non-crisis and strong accounting regulatory period.*

Economic Crisis Period

The other focus of investigation in this study is on the value relevance of intangible during economic crisis period. Within this context, the question is whether intangible also has value relevance during economic crisis period. The issue of huge investments in East Asian countries just before the economic crisis was cited to be one of the reasons for the July 1997 Asian financial crisis (Graham, King & Bailes, 2000). Huge investments involve huge debts, many from international markets. When the currency

value of a particular country suddenly falls, the huge international debts create massive financial problems to firms and the whole country likewise (Facts on File, 2004). However, intangibles value relevance during crisis period might not be affected as clear as tangible NCA. It is expected that during economic crisis periods, the higher tangible NCA being attached to debts compared to equity, the less information content these NCA provided to financial analysts and investors in predicting expected future cash flows (Fan & So, 2004). This is because, more future cash flows will be utilized on paying debts and less towards paying dividends, and eventually less towards increasing shareholders value. Traditional finance management practice suggests the idea of having low debts attached to assets during crisis and high debts attached to assets during better periods (Penman, 2001; Ross et al., 2005). Generally, prior literature found the source of capital, being either debts or equity, influence the level of firms' investments in NCA in-total (Fan & So, 2004; Graham & Harvey, 2001; Holz, 2002; Lewis, Rogalski & Seward, 2001; Morellec, 2001; Singh et al., 2003; Singh & Nejadmalayeri, 2004).

Therefore the information content of intangible NCA during the Asian financial crisis period might possibly also be subjected to restrictions already attached on firms' reported NCA in-total. Investors' reaction during crisis period can be explained based upon the abandonment option theory. This theory suggests that investors put value on firms based upon the availability of reliable assets for prediction of immediate cash flows during the period (Sin & Watts, 2000). Prior literature found firms' book value always positively associated with firms' share prices among conceptually problematic firms (Franzen, 2000; Graham & King, 2000; Graham et al., 2000; Hayn, 1995; Tan, 2001) corroborating the abandonment option hypothesis proposed and evidence in Hayn (1995). Prior literature also found generally in cases of inflation affecting overall NCA prices, overall NCA information is value relevant since it might reflect further potential in firms' expected future cash flows (Davis-Friday, 2001; Easton & Eddey, 1997; Easton et al., 1993; Gordon, 2001). However, investors might also avoid investing more during crisis period if they do not anticipate prospects in the economic environment (Green, 2004).

Prior literature provides evidence that investors utilized intangible NCA information towards decision on firms' value. However, during economic crisis period, the value relevance of intangibles NCA might differ from the case of non-crisis period. Especially following the concept of the abandonment option hypothesis, issue of uncertainty with regards to expected future cash flows as well as issue of liquidity associated with intangible NCA might result in different value relevance from non-crisis period. Intangibles NCA regularly found to be associated with higher uncertainty and less liquid (see Barth et al., 2001b; Eckstein, 2004; Zaleha et al., 2005b) and expected to be as much during crisis period. The more firms invest in intangibles NCA would probably result in a negative reaction from investors (see Cazavan-Jeny and Jeanjean, 2006), especially during crisis period. Hence, hypothesis on the value relevance of intangibles during crisis period is stated as follows:

Hypothesis 2: *Reported intangible NCA is negatively associated with firms' share prices during economic crisis period.*

3. Methodology

Value Relevance Concept

Value relevance concept within the market-based accounting research discuss previously suggest investors decision making can be investigated under the valuation of firms at one point in time using the Price Model (Easton et al., 1993). Empirical framework for the Price Model is designed based on the understanding of the decision usefulness paradigm of accounting information.

Empirical Framework for the Model

Development of empirical framework for Price Model is based on Barth and Clinch (1998) as well as Easton et al. (1993) models developed on the conceptual framework of Ohlson (1995) and Feltham and Ohlson (1996) models. The Price Model represents a summary measure of firms' value where value, P or price per share comes from combination of information on firms' book value of equity (BVE) per share and current earnings (EARN) per share for firm i at time t, as follows:

$$P_{it} = \alpha_0 + \alpha_1 BVE_{it} + \alpha_2 EARN_{it} + \varepsilon_{it} \quad (1)$$

The rule of accounting equation stated that BVE is actually a combination of total assets (TA) less total liabilities (TL) as follows:

$$BVE_{it} = TA_{it} - TL_{it} \quad (2)$$

In terms of presentation, accounting standards allow firms to present TA as being made up of non-current (NCA) and current (CA) components as follows:

$$TA_{it} = NCA_{it} + CA_{it} \quad (3)$$

Therefore BVE can also be broken down into NCA, CA and TL. At this stage the negative sign for TL is ignored since it is a conceptual issue which eventually will materialised in the actual regression analysis. Hence BVE can also be stated as follows:

$$BVE_{it} = NCA_{it} + CA_{it} + TL_{it} \quad (4)$$

Alternatively, BVE can also be divided into NCA and item other BVE (where in total comprised of CA and TL). However, combination of CA and TL will always end up in negative values, hence creating issues not within the focus of this study. Hence BVE in the context of equation (4) is maintained throughout this study.

From previous discussions on the concepts of NCA, NCA may be separated into intangible (INCA) and tangible (TNCA) components as follows:

$$NCA_{it} = INCA_{it} + TNCA_{it} \quad (5)$$

Conceptually, based on previous discussion as well as on balance sheet reporting, TNCA is more often made up of fixed assets (FNCA), investments (IVNCA) and investment property (IPNCA). Therefore NCA can also be stated as follows:

$$NCA_{it} = INCA_{it} + FNCA_{it} + IVNCA_{it} + IPNCA_{it} \quad (6)$$

Substituting equation (6) into equation (4), BVE can then be stated as follows:

$$BVE_{it} = INCA_{it} + FNCA_{it} + IVNCA_{it} + IPNCA_{it} + CA_{it} + TL_{it} \quad (7)$$

Finally, substituting equation (7) into equation (1) suggests the following Price Model, with each variable having its own coefficients in the multiple regression analysis:

$$P_{it} = \Omega_0 + \Omega_1 INCA_{it} + \Omega_2 FNCA_{it} + \Omega_3 IVNCA_{it} + \Omega_4 IPNCA_{it} + \Omega_5 CA_{it} + \Omega_6 TL_{it} + \Omega_7 EARN_{it} + \varepsilon_{it}$$

In the final Price Model above, P is year-end market price per share; INCA, FNCA, IVNCA, IPNCA, CA and TL are year-end intangibles per share, fixed assets per share, investments per share, investment property per share, current assets per share and total liabilities per share respectively for firm i at time t. EARN is current earnings for firm i at time t. The error term (ε) and the slope (Ω_0) represent all other information influencing P not captured in other variables in the regression model (Barth & Clinch, 1998).

Models and Measurement of Variables

Based on the empirical framework, this study thus proposes the following Price Model for our value relevance model. The Price Model incorporates a summary measure of firms' value with NCA information (which has been separated into individual items of intangible assets ($INCA_{it}$), fixed assets ($FNCA_{it}$), investments ($IVNCA_{it}$), and investment property ($IPNCA_{it}$)), representing a component of book value of equity plus other book value of equity represented by current assets (CA_{it}) and total liabilities (TL_{it}) plus earnings ($EARN_{it}$) information.

Price Model

The Price Model has P as the dependent variable and INCA, FNCA, IVNCA, IPNCA, CA, TL and EARN as the independent variables.

$$P_{it} = \lambda_0 + \lambda_1 INCA_{it} + \lambda_2 FNCA_{it} + \lambda_3 IVNCA_{it} + \lambda_4 IPNCA_{it} + \lambda_5 CA_{it} + \lambda_6 TL_{it} + \lambda_7 EARN_{it} + \varepsilon_{it}$$

Where:

- **P_{it} :** is firm i per share market price at time t (fiscal year-end).
- **$INCA_{it}$:** is reported year-end book value of intangible NCA per share for firm i at

time t.

- **$FNCA_{it}$** : is reported year-end book value of fixed asset or property, plant and equipment per share for firm i at time t.
- **$IVNCA_{it}$:** is reported year-end book value of investments per share for firm i at time t.
- **$IPNCA_{it}$:** is reported year-end book value of investment property per share for firm i at time t.
- **CA_{it} :** is year-end reported book value of current assets per share for firm i at time t.
- **TL_{it} :** is year-end reported book value of total liabilities per share for firm i at time t.
- **$EARN_{it}$:** is reported earnings before extraordinary items per share for firm i at time t.
- **ε_{it} :** represents error term in this regression.

Coefficient of interest in the Price Model is coefficient λ_1 which represent intangibles usefulness towards investors' decision making. In the model above, INCA is predicted to be significantly associated with P during pre-crisis, excellent economy and less stringent accounting environment (i.e. H1A) due to it being conceptually associated with expected future cash flows (Aboody & Lev, 1998). While during post-crisis and especially more stringent accounting environment, INCA is expected to be positively associated with P (i.e. H1B). During crisis period, INCA is expected to be negatively associated with P (i.e. H2) due to its higher uncertainty association with expected future cash flows (Cazavan-Jeny & Jeanjean, 2006). On the other hand, all tangible NCA components, namely fixed assets (FNCA), investments (IVNCA) and investments property (IPNCA) are expected to be positively associated with P during all economic periods. CA and EARN are also expected to be positively associated with P during all economic periods. However TL is expected to be negatively associated with P during all economic periods based on the argument that it is the risk component of firms' book value of equity.

Sample Data

This study collected firm-years data of all industries from the Corporate Handbook published by Thomson Information as well as the Annual Handbook published by Bursa Malaysia. Sample data cover years 1990 until 2001. Data was divided into the three economic and accounting environment periods consisting of before crisis or before the establishment of MASB up to year 1996, during crisis or during the establishment of MASB years 1997 and 1998 and after crisis or post establishment of MASB starting year 1999. Data on IPNCA is not available for analysis in this study because during this study time period, data on IPNCA is only available within the property industry, where industry per se is not examined in this study.

Descriptive Statistics

Tables 1A, 1B and 1C provide statistics for variables during pre-crisis, crisis and post-crisis period respectively. Price per share (variable P) for this study sample show highest mean value during period of pre-crisis at RM3.514 per share (in Table 1A) compared to crisis at RM1.458 per share (in Table 1B) and post-crisis at RM1.484 per share (in Table 1C). This is consistent with pre-crisis period reported to be the booming period in South East Asian economy (Facts on File, 2004). Mean values of FNCA distribution (at 1.064 during pre-crisis, at 1.341 during crisis and at 1.190 during post-crisis) and IVNCA (at 0.718 during pre-crisis, at 0.874 during crisis and at 0.691 during post-crisis) throughout the three economic periods seems to show similar trends of higher amount during crisis period. This is probably resulting from continuous capital investments made during pre-crisis period can only be seen during crisis period. On the other hand, intangible assets (variable INCA) distribution (at 0.159 during pre-crisis, at 0.277 during crisis and at 0.350 during post-crisis) shows tendency of increasing amount from pre-crisis to post-crisis period for this study sample data. One possibility of increasing INCA might be due to increase activities of mergers and acquisitions after crisis period (Thillainathan, 2000), resulting increase in reporting goodwill amount, hence increasing INCA.

Table 1A: Descriptive Statistics of Variables for Sample Data Period 1990-1996 (N = 2228)

Variables	Mean	Median	Std.Dev	Skewness	Kurtosis	Min	Max
P	3.514	3.305	1.624	0.380	-0.915	1.010	7.000
INCA	0.159	0.002	0.556	22.811	797.222	-0.746	20.456
FNCA	1.064	0.829	1.025	2.923	21.784	0.000	13.641
IVNCA	0.718	0.257	1.337	7.738	98.861	-0.001	22.932
EARN	0.367	0.180	0.954	17.570	532.518	-4.555	31.733
CA	2.749	1.299	4.999	4.852	30.839	0.007	56.670
TL	3.029	1.001	6.770	5.245	35.981	0.000	77.830

Table 1B: Descriptive Statistics of Variables for Sample Data Period 1997-1998 (N = 822)

Variables	Mean	Median	Std.Dev	Skewness	Kurtosis	Min	Max
P	1.458	1.250	0.768	0.607	-0.749	0.300	3.200
INCA	0.277	0.010	0.735	5.384	39.477	0.000	7.955
FNCA	1.341	0.888	1.659	3.388	20.400	0.000	16.050
IVNCA	0.874	0.256	1.749	6.010	56.331	-0.000	23.838
EARN	0.201	0.100	1.141	-0.025	11.999	-8.670	8.100
CA	2.116	1.270	3.236	5.142	37.457	0.000	38.741
TL	4.493	1.826	9.964	6.984	65.813	0.000	118.892

Table 1C: Descriptive Statistics of Variables for Sample Data Period 1999-2001 (N = 1045)

Variables	Mean	Median	Std.Dev	Skewness	Kurtosis	Min	Max
P	1.484	1.360	0.824	0.423	-0.842	0.100	3.300
INCA	0.350	0.020	0.843	4.700	29.304	0.000	9.000
FNCA	1.190	0.765	1.627	4.168	30.701	0.000	18.482

IVNCA	0.691	0.150	2.310	17.228	396.436	-0.028	58.676
EARN	0.205	0.080	0.983	1.208	9.479	-5.630	7.480
CA	1.383	1.017	1.582	3.898	28.431	0.000	19.401
TL	3.605	1.324	10.185	9.021	95.838	0.000	123.266

4. Findings and Discussion

Pearson Correlations

Tables 2A, 2B and 2C provide Pearson correlations for variables during pre-crisis, crisis and post-crisis period respectively. Intangible assets (variable INCA) show consistent negative correlation with P but significant only during post-crisis period in Table 2C (where β = -0.108 at p<1%). Findings do not support any of the hypotheses except for the direction during crisis period but association is insignificant. Fixed assets (variable FNCA) show consistent positive correlation with P throughout the three economic periods (where β = 0.192 at p<1% during pre crisis; β = 0.165 at p<1% during crisis; and β = 0.118 at p<1% during post crisis), as expected. Investment assets (variable IVNCA) show no significant correlation with P.

Table 2A: Pair-Wise Correlations of Variables for Sample Data Period 1990-1996 (N = 2228)

	INCA	FNCA	IVNCA	EARN	CA	TL
P	-0.029	0.192***	0.019	0.106***	0.148***	0.134***
INCA		-0.036*	0.064***	0.194***	0.116***	0.008
FNCA			-0.095***	0.039*	-0.079***	-0.039*
IVNCA				0.064***	0.312***	0.324***
EARN					0.033	-0.025
CA						0.933***

*p<0.10, **p<0.05, ***p<0.01

Table 2B: Pair-Wise Correlations of Variables for Sample Data Period 1997-1998 (N = 822)

	INCA	FNCA	IVNCA	EARN	CA	TL
P	-0.031	0.165***	-0.003	0.104***	-0.001	0.151***
INCA		-0.054	0.051	0.272***	0.064*	0.188***
FNCA			-0.029	-0.172***	0.112***	0.042
IVNCA				0.022	0.296***	0.138***
EARN					-0.059*	-0.166***
CA						0.291***

*p<0.10, **p<0.05, ***p<0.01

An interesting finding with regards to post-crisis period (see Table 2C) is that, while fixed assets (variable FNCA) is positively significant (where β = 0.118 at p<1%), intangible assets (variable INCA) is negatively significant (where β = -0.108 at p<1%). Intangible NCA correlation with P differs from expectation in H1B. To find stronger evidence on the association between intangible NCA and share price, multiple regression analysis is undertaken.

Table 2C: Pair-Wise Correlations of Variables for Sample Data Period 1999-2001 (N = 1045)

	INCA	FNCA	IVNCA	EARN	CA	TL
P	-0.108***	0.118***	-0.024	0.120***	0.078**	0.121***
INCA		-0.066**	0.013	0.376***	0.047	0.260***
FNCA			-0.022	-0.178***	0.222***	0.118***
IVNCA				0.000	0.356***	0.175***
EARN					0.007	-0.143***
CA						0.066**

*p<0.10, **p<0.05, ***p<0.01

Multiple Regressions Based on Economic Periods Samples

Table 3 present results from regressions of price per share (variable P_{it}) on INCA and other independent variables. Very interesting and important results are found concerning intangibles. Intangible NCA (variable INCA) is negatively associated with P during all economic periods (where β = -0.201 at p<1% during pre-crisis; β = -0.115 at p<1% during crisis period; and β = -0.258 at p<1% during post-crisis period). Findings support H1A (i.e. INCA is associated with P during pre-crisis period) and H2 (i.e. INCA is negatively associated with P during crisis period) but do not support H1B (i.e. INCA is positively associated with P during post-crisis period). The consistent negative and significant associations might suggest several issues. First, reported intangibles are always perceived as value relevant by investors regardless of economic periods for our sample. Second, users are however always bias towards the reporting of intangibles regardless of economic periods for our sample. Third, findings therefore support the universal concern to always review accounting standards on the reporting of intangibles (Eckstein, 2004).

Table 3: Mean Coefficient Estimates for Regressions of Price (P) on Non-Current Assets

	Exp. Sign	PRE-CRISIS	Exp. Sign	CRISIS	Exp. Sign	POST-CRISIS
Intercept		2.992***		1.304***		1.362***
$INCA_{it}$	+/-	-0.201***	-	-0.115***	+	-0.258***
$FNCA_{it}$	+	0.318***	+	0.088***	+	0.051***
$IVNCA_{it}$	+	-0.018	+	-0.002	+	-0.031***
CA_{it}	+	0.083***	+	-0.015*	+	0.042**
TL_{it}	-	-0.021	-	0.016***	-	0.018***
$EARN_{it}$	+	0.173***	+	0.133***	+	0.225***
F-value		30.969***		13.111***		21.105***
Adj.R^2		7.47%		8.13%		10.35%
N		2228		822		1045

*p<0.10, **p<0.05, ***p<0.01

With regards to tangibles NCA, findings show that during all economic periods, fixed assets (variable $FNCA_{it}$) is positively associated with P (where β = 0.318 at p<1% during pre-crisis; β = 0.088 at p<1% during crisis period; and β = 0.051 at p<1% during post-crisis period), as expected. However variable IVNCA is negatively associated with P during post-crisis period (where β = -0.031 at p<1%), direction not as expected. When testing coefficients of NCA components, Wald statistics result in Table 3(i) suggest that INCA coefficients are significantly different from both FNCA and IVNCA coefficient

during all economic periods. This might suggest that users tend to always perceived intangibles to show different information content from tangibles.

Table 3(i): Significant Coefficient Differences from Table 3

Variables	Chi-square statistic (Wald test)	p-value
Pre-crisis period between:		
$FNCA_{it}$ and $INCA_{it}$	53.649	0.000
$IVNCA_{it}$ and $INCA_{it}$	6.884	0.009
Crisis period between:		
$FNCA_{it}$ and $INCA_{it}$	25.367	0.000
$IVNCA_{it}$ and $INCA_{it}$	7.698	0.006
Post-crisis period between:		
$FNCA_{it}$ and $INCA_{it}$	74.628	0.000
$IVNCA_{it}$ and $INCA_{it}$	44.125	0.000

Multiple Regressions Based on Yearly Sub-Samples

In Tables 4A, 4B and 4C, data is partition into yearly sub-samples within each economic period, pre-crisis, crisis and post-crisis respectively. During pre-crisis period (see Table 4A), Intangible NCA (variable $INCA_{it}$) is not significantly associated but consistently show negative sign throughout 1990 until 1995. Findings might show that in the lack of guidance on the accounting of intangibles, users do not value reporting of intangible NCA. The consistent negative sign show tendency that the reporting of intangible might be seen as bias and uncertain information to the capital market. While, tangible NCA (variable $FNCA_{it}$) is positively associated with P in six out of seven yearly sub-samples at less than 1% level.

Table 4A: Mean Coefficient Estimates for Regressions of Price (P) on Non-Current Assets based on Yearly Regressions during Pre-Crisis Period

	Exp. Sign	1990	1991	1992	1993	1994	1995	1996
Intercept		1.882***	1.893***	1.474***	3.654***	3.963***	2.656***	4.438***
$INCA_{it}$	+/-	-0.544	-0.261	-0.109	-0.086	-0.211	-0.418	0.047
$FNCA_{it}$	+	0.439	0.567***	0.295***	0.376***	0.660***	1.086***	0.502***
$IVNCA_{it}$	+	0.470**	-0.112	0.038	-0.095	0.263**	0.972***	-0.069
CA_{it}	+	0.175	0.013	0.097*	0.075	0.311***	1.897***	0.158***
TL_{it}	-	-0.125	0.047	-0.032	-0.011	-0.147**	-1.261***	-0.018
$EARN_{it}$	+	3.798***	0.326**	0.070	0.002	-0.131	-0.077	0.250
F-value		4.940***	13.649***	7.085***	2.973***	12.325***	35.512***	11.745***
Adj.R^2		7.28%	18.97%	10.15%	3.07%	13.61%	29.74%	11.95%
N		302	325	324	374	432	490	476

*p<0.10, **p<0.05, ***p<0.01

During crisis period yearly sub-samples (see Table 4B), intangible (variable $INCA_{it}$) is not significantly associated with P during both 1997 and 1998. Results do not support H2. Result might suggest that attached with uncertain future cash flow, the reporting of intangibles during crisis period is not value relevant to investors, hence the insignificant associations. In the case of tangible NCA, variable FNCA is positively associated with P

at less than 1% level during both 1997 and 1998. Wald test undertaken during crisis period find no significant difference between tangible and intangible coefficients in year 1997 sub-sample. Only in year 1998 sub-sample, Wald test show significant coefficient different (see Table 4B(i)) between fixed assets (variable $FNCA_{it}$) and intangible (variable $INCA_{it}$).

Table 4B: Mean Coefficient Estimates for Regressions of Price (P) on Non-Current Assets based on Yearly Regressions during Crisis Period

	Exp. Sign	1997	1998
Intercept		1.546***	1.308***
$INCA_{it}$	-	0.043	-0.050
$FNCA_{it}$	+	0.130***	0.109***
$IVNCA_{it}$	+	0.003	0.001
CA_{it}	+	-0.001	-0.003
TL_{it}	-	0.011***	0.019***
$EARN_{it}$	+	0.091	0.147***
F-value		3.317***	10.923***
Adj.R^2		3.22%	10.87%
N		418	489

*p<0.10, **p<0.05, ***p<0.01

Table 4B(i): Significant Coefficient Differences from Table 4B

Variables	Chi-square statistic (Wald test)	p-value
Year 1998 between:		
$FNCA_{it}$ and $INCA_{it}$	11.299	0.001

Explanation for the finding might be as follows. Year 1997 might reflect situation of uncertainty in all areas of business and economic environment in Malaysia, hence the positive sign and no significant coefficient different from FNCA variable. Whilst, year 1998 might reflect clearer the danger faced by firms, hence the negative sign of INCA and significant coefficient different from FNCA variable. For intangible assets (variable $INCA_{it}$) during post-crisis period (see Table 4C), yearly sub-samples show significant association with P but not in the expected direction, do not support H1B. However, finding is similar to Cazavan-Jeny and Jeanjean (2006) on R&D reported among French firms data. Findings might suggest that investors do perceived intangibles as value relevant but is still biased towards its' reporting even during non-crisis period with better accounting environment. For tangible NCA, 1999 and 2001 yearly sub-samples show FNCA weak positive association with P. Year 2000 sub-sample show FNCA positively associated with P at less than 1% level. Variable IVNCA is not consistently associated with P.

Table 4C: Mean Coefficient Estimates for Regressions of Price (P) on Non-Current Assets based on Yearly Regressions during Post-Crisis Period

	Exp. Sign	1999	2000	2001
Intercept		1.980***	1.162***	1.256***
$INCA_{it}$	+	-0.145**	-0.225***	-0.341***
$FNCA_{it}$	+	0.061*	0.073***	0.051*
$IVNCA_{it}$	+	-0.056***	-0.059	-0.028
CA_{it}	+	0.045	0.051*	0.071*
TL_{it}	-	0.025***	0.010***	0.017***
$EARN_{it}$	+	0.258***	0.223***	0.251***
F-value		6.406***	7.007***	9.928***
Adj.R^2		7.58%	10.50%	12.79%
N		396	308	366

*p<0.10, **p<0.05, ***p<0.01

In summary, variable INCA show negative association with P in 11 out of 12 yearly sub-samples regressions throughout the three economic periods with only three significant associations, all during the post-crisis period. Findings show tendency of different value relevance of intangibles during the three economic and accounting periods. During non-crisis flourishing economic period but with less stringent accounting regulation, intangibles seemed not to be as value relevant compared to during non-crisis recovery economic period with a more stringent accounting regulation. It seems that the better the economic period, the less is the intangibles value relevant. On the other hand, the better the accounting regulation, the more is the intangibles value relevant, but with a bias reflection. One explanation could be that even though intangibles are perceived to be valuable but generally financial statements users still see capitalization of intangibles to be a controversial action and bias, hence reacted accordingly.

5. Conclusion

This study examines the value relevance of intangibles NCA among listed firms in Malaysia. Sample data was divided into three distinct economic and accounting regulatory periods. Generally, during all periods, evidence showed that intangibles were negative but not all significantly associated with firms' valuation. Findings partly support hypothesis proposed for pre-crisis (i.e. intangibles is associated with firms' share prices) and crisis period (i.e. intangibles is negatively associated with firms' share prices) but not for post-crisis period (i.e. intangibles is positively associated with firms' share prices). During post-crisis and a more stringent accounting regulatory period, intangibles asset was significant but negatively associated with firms' valuation. Findings suggest intangibles asset is value relevant but investors see capitalization of it still a controversial issue.

One reason that can explain the consistent negative association between intangibles and firms' share prices is possibly due to reported intangibles data in this study mainly comprised of goodwill and deferred expenditures (Zaleha et al., 2005a). Even though goodwill generally found to be value relevant in prior studies (eg. Muhd-Kamil et al., 2003) but recent regulation on goodwill accounting require firms to focus more on possible impairment rather than its potential growth. While deferred expenditures not

within R&D costs is rarely seen as showing significant future cash flow potential to firms. With Malaysia capital market categorized as among the emerging capital market during the time period of this study, there is also possibility of the existence of a weak form of the EMH concept. This weak form might also explain the reason why intangibles insignificantly associated with firms' share prices especially during pre-crisis period. While, during post-crisis period, existence of a stronger accounting regulatory framework but in the absence of specific intangible accounting standard might explain the significant but negative association between intangibles and firms' share prices. Even though this study investigate conceptually evidence of intangibles value relevance during different accounting regulatory period, a direct impact of accounting standards towards the value relevance of intangibles was not established and out of the scope of this study. Therefore future research could extend this study and investigate on the value relevant of intangibles specifically before and after the issuance of FRS 138, *Intangibles Assets*, to refine the issue of value relevance of reported intangibles per se in Malaysia.

References

Aboody, D., & Lev, B. (1998). The value relevance of intangibles: the case of software capitalization. *Journal of Accounting Research*, 36 (Supplement), 161-191.

Arcelus, F.J., Mitra, D., & Srinivasan, G. (2005). On the incidence of deferred taxes, intangibles and non-linearities in the relationship between Tobin's Q and ROI. *Journal of Economics & Business*, 57, 165-185.

Ball, R., & Brown, P. (1968). An empirical evaluation of accounting income numbers. *Journal of Accounting Research*, (Autumn), 159-178.

Ball, R., Robin, A., & Wu, J.S. (2003). Incentives versus standards: properties of accounting income in four East Asian countries. *Journal of Accounting and Economics*, 36, 235-270.

Barth, M.E., Beaver, W.H., & Landsman, W.R. (2001a). The relevance of the value relevance literature for financial accounting standard setting: another view. *Journal of Accounting and Economics*, 31, 77-104.

Barth, M.E., & Clinch, G. (1998). Revalued financial, tangible, and intangible assets: Associations with share prices and non-market-based value estimates. *Journal of Accounting Research,* 36 (Supplement), 199-233.

Barth, M.E., Kasznik, R., & McNichols, M.F. (2001b). Analyst coverage and intangible assets. *Journal of Accounting Research*, 39 (1), 1-34.

Barron, O.E., Byard, D., Kile, C., & Riedl, E.J. (2002). High-technology intangibles and analysts' forecasts. *Journal of Accounting Research*, 40 (2), 289-312.

Beaver, W.H. (2002). Perspectives on recent capital market research. *The Accounting Review,* 77 (2), 453-474.

Boone, J.P., & Raman, K.K. (2001). Off-balance sheet R&D assets and market liquidity. *Journal of Accounting and Public Policy*, 20, 97-128.

Bublitz, B., & Ettredge, M. (1989). The information in discretionary outlays: advertising, research, and development. *The Accounting Review,* 64 (1), 108-124.

Cazavan-Jeny, A., & Jeanjean, T. (2006). The negative impact of R&D capitalization: a value relevance approach. *European Accounting Review*, 15 (1), 37-61.

Churyk, N.T. (2004). Reporting goodwill: are the new accounting standards consistent with market valuations? *Journal of Business Research*, xx, xxx-xxx.

Davis-Friday, P.Y. (2001). Equity valuation and current cost disclosures: the case of Mexico. *Journal of International Financial Management and Accounting*, 12 (3), 260-285.

Davis-Friday, P.Y., Eng, L.L., & Liu, C.S. (2006). The effects of the Asian crisis, corporate governance and accounting system on the valuation of book value and earnings. *The International Journal of Accounting*, 41, 22-40.

De Angelis, F., Habib, I., Davide, F., & Naghshineh, M. (2005). Increasing revenues via adaptive filtering in wired/wireless networks. *Computer Networks*, xxx, 1-20 (article in press).

Easton, P., & Eddey, P. (1997). The relevance of asset revaluations over an economic cycle. *Australian Accounting Review*, 7 (1), 22-30.

Easton, P.D., Eddey, P.H., & Harris, T.S. (1993). An investigation of revaluations of tangible long-lived assets. *Journal of Accounting Research,* 31 (Supplement), 1-38.

Eckstein, C. (2004). The measurement and recognition of intangible assets: then and now. *Accounting Forum*, 28, 139-158.

Ely, K., & Waymire, G. (1999). Intangible assets and stock prices in the pre-SEC era. *Journal of Accounting Research,* 37 (Supplement), 17-44.

Facts on File. (2004). *Issues and controversies: Asia's economic crisis*. Retrieved on 26 October 2004 from http://www.facts.com

Fan, D.K.K., & So, R.W. (2004). What managers think of capital structure: the evidence from Hong Kong. *Journal of Asian Economics*, 15, 817-830.

Fauver, L., Houston, J., & Naranjo, A. (2003). Capital market development, international integration, legal systems, and the value of corporate diversification: a cross-country analysis. *Journal of Financial and Quantitative Analysis*, 38 (1), 135-157.

Feltham, G.A., & Ohlson, J.A. (1996). Uncertainty resolution and the theory of depreciation measurement. *Journal of Accounting Research,* 34, 209-234.

Frank, K. (2002). The effect of growth on the value relevance of accounting data. *Journal of Business Research*, 55, 69-78.

Franzen, L.A. (2000). The nature of losses and the value relevance of earnings and book values. Unpublished PhD thesis, University of Washington, USA.

Godfrey, J., Hodgson, A., Holmes, S., & Tarza, A. (2006). *Accounting theory* (6th ed.). Sydney: John Wiley & Sons Australia, Ltd.

Godfrey, J., & Koh, P.S. (2001). The relevance to firm valuation of capitalising intangible assets in total and by category. *Australian Accounting Review*, 11 (2), 39-48.

Gordon, E.A. (2001). Accounting for changing prices: the value relevance of historical cost, price level, and replacement cost accounting in Mexico. *Journal of Accounting Research,* 39 (1), 177-200.

Graham, J.R., & Harvey, C.R. (2001). The theory and practice of corporate finance: evidence from the field. *Journal of Financial Economics*, 60, 187-243.

Graham, R.C., & King, R.D. (2000). Accounting practices and the market valuation of accounting numbers: evidence from Indonesia, Korea, Malaysia, the Philippines, Taiwan, and Thailand. *The International Journal of Accounting*, 35 (4), 445-470.

Graham, R., King, R., & Bailes, J. (2000). The value relevance of accounting information during a financial crisis: Thailand and the 1997 decline in the value of the Baht. *Journal of International Financial Management and Accounting*, 11 (2), 84-107.

Green, D.J. (2004). Investment behavior and the economic crisis in Indonesia. *Journal of Asian Economics*, 15, 287-303.

Hall, B.H., & Oriani, R. (2006). Does the market value R&D investment by European firms? Evidence from a panel of manufacturing firms in France, Germany, and Italy. *International Journal of Industrial Organization*, 24, 971-993.

Han, B.H., & Manry, D. (2004). The value-relevance of R&D and advertising expenditures: evidence from Korea. *The International Journal of Accounting*, 39, 155-173.

Hayn, C. (1995). The information content of losses. *Journal of Accounting and Economics*, 20, 125-153.

Henderson, S., Peirson, G., & Brown, R. (1992). *Financial accounting theory* (2nd ed.). Melbourne: Longman Cheshire Pty Ltd.

Hirshleifer, D., Hou, K., Teoh, S.H., & Zhang, Y. (2004). Do investors overvalue firms with bloated balance sheets? *Journal of Accounting and Economics*, 38, 297-331.

Holz, C. (2002). The impact of the liability-asset ratio on profitability in China's industrial state-owned enterprises. *China Economic Review*, 13, 1-26.

Hung, M. (2001). Accounting standards and value relevance of financial statements: an international analysis. *Journal of Accounting and Economics*, 30, 401-420.

Iatridis, G. (2006). Accounting disclosure and firms' financial attributes: evidence from the UK stock market. *International Review of Financial Analysis*, xx, 1-23.

Kohlbeck, M. (2004). Investor valuations and measuring bank intangible assets. *Journal of Accounting, Auditing & Finance*, 19, 1, 29-60.

Kousenidis, D.V., Negakis, C.I., & Floropoulos, I.N. (2000). Size and book-to-market factors in the relationship between average stock returns and average book returns: some evidence from an emerging market. *The European Accounting Review,* 9 (2), 225-243.

Lewis, C.M., Rogalski, R.J., & Seward, J.K. (2001). The long-run performance of firms that issue convertible debt: an empirical analysis of operating characteristics and analyst forecasts. *Journal of Corporate Finance*, 7, 447-474.

Mauldin, E.G., & Richtermeyer, S.B. (2004). An analysis of ERP annual report disclosures. *International Journal of Accounting Information Systems*, 5, 395-416.

Morellec, E. (2001). Asset liquidity, capital structure, and secured debt. *Journal of Financial Economics*, 61, 173-206.

Muhd-Kamil, I., Marzita, M.S., Radziah, A.L., & Zaleha, A.S. (2003). Value relevance of accounting numbers: an empirical investigation of purchased goodwill. *Malaysian Accounting Review*, 2 (1), 106-123.

Ohlson, J.A. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research,* 11 (2), 661-687.

Penman, S.H. (2001). *Financial Statement Analysis and Security Valuation* (International Edition). Singapore: McGraw-Hill Irwin.

Riahi-Belkaoui, A. (2000). *Accounting theory (4th ed.).* London: Thomson Learning.

Ross, S.A., Westerfield, R.W., & Jaffe, J. (2005). *Corporate Finance* (International Edition). New York: McGraw Hill.

Scott, W.R. (2000). *Financial accounting theory* (2nd ed.). Ontario: Prentice-Hall Canada Inc.

Sin, S., & Watts, E. (2000). The information content of losses: shareholder liquidation option and earnings reversals. *Australian Journal of Management*, 25 (3), 327-338.

Singh, M., Davidson III, W.N., & Suchard, J-A. (2003). Corporate diversification strategies and capital structure. *The Quarterly Review of Economics and Finance*, 43, 147-167.

Singh, M., & Nejadmalayeri, A. (2004). Internationalization, capital structure, and cost of capital: evidence from French corporations. *Journal of Multinational Financial Management,* 14, 153-169.

Stewart, T.A. (1997). *Intellectual Capital*. London: Nicholas Brealey Publishing.

Tan, C.E.L. (2001). Alternative adaptations of distressed firms' resources: the valuation roles of book value of equity and earnings. Working paper, City University of New York.

Thillainathan, R. (2000). Malaysian financial and corporate sector under distress: A mid-term assessment of the restructuring efforts. *Banker's Journal IBBM*, June, 3-41.

Zaleha, A.S., Hamezah, M.N., Muhd-Kamil, I., Jagjit, K. (2005a). Information content of intangible non-current assets: evidence during economic crisis period in Malaysia. *Journal of Accounting-Business & Management*, 12 (October), 89-106.

Zaleha, A.S., Hamezah, M.N., Muhd-Kamil, I., Jagjit, K. (2005b). Tangible and intangible non-current assets: evidence of information content during economic crisis period. *Contemporary Studies in Economics and Financial Analysis*, 86, 115-137.

Zhao, R. (2002). Relative value relevance of R&D reporting: an international comparison. *Journal of International Financial Management and Accounting*, 13 (2), 153-174.