

WHEN CROSS-LISTED FIRMS REPORT PROPERTY, PLANT AND EQUIPMENT AT
FAIR MARKET VALUE, DO THEY EXPERIENCE THE ECONOMIC BENEFIT IN TERMS
OF LOWER COST OF EQUITY CAPITAL?

A THESIS SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF
HAWAI'I AT MĀNOA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF

MASTER OF SCIENCE

IN

ACCOUNTING

DECEMBER 2010

By
Khin Phyo Hlaing

Thesis Committee:

Hamid Pourjalali, Chairperson
Boo Chun Jung
Devan Mescall

Acknowledgments

I would like to express my sincere thanks to my thesis chair, Dr. Hamid Pourjalali, and committee members, Dr. Boo Chun Jung and Dr. Devan Mescall for their invaluable guidance, suggestions, comments and feedback in completing this project. I want to thank Dr. Pourjalali for his unwavering commitment to mentorship and his devotion to this research project. Hamid, thank you for being my editor-in-chief and having the courage to allow me to proceed with this project and keeping me on-track, even when I wanted to get distracted. Devan, thank you for your generosity in sharing with me the cost of capital data, providing thoughtful comments and kind words of encouragement, and for taking an interest in this project. Boo Chun, thank you for your suggestions and editing and for the time and effort that you invested to help me significantly improve this thesis. Thank you all for your expediency in reading my work and flexibility in scheduling.

I would like to extend a special thank you to Dr. Partha Sengupta for permission to use the cost of capital data. Many thanks to Eric Wen, Lijuan Zhao and Shao Hu for collecting the data for this project.

Table of Contents

Acknowledgments.....	i
List of Tables	iii
Introduction.....	1
Fair Value Accounting.....	5
Definition and Estimation	5
Debate over Fair Value Accounting	6
Contemporary Accounting Standards	7
Literature Review.....	9
Value Relevance and Reliability of Fair Value Accounting.....	9
Value Relevance Studies of Financial Assets (e.g., Financial Instruments).....	9
Value Relevance Studies of Tangible Assets.....	11
Value Relevance Nature of Revaluation of Property, Plant, and Equipment	12
Motivation behind PPE Revaluation.....	17
Information Disclosure and Cost of Capital	21
Fair Value Accounting of PPE from an Information Perspective: Decision to Revalue Fixed Assets and its Impact on Cost of Capital	23
Hypothesis Development	27
Why Revaluers are Fundamentally Different in Economic Characteristics from Non-revaluers.....	28
Decision to Revalue Fixed Assets and its Impact on Cost of Capital.....	32
Sample.....	35
Sample of Cross-listed Firms.....	35
Control Sample — Matching U.S. Firms.....	37
Additional Control Variables	37
Cost of Capital	38
Data, Methodology and Empirical Results	40
Predicting Adoption of the Revaluation Model to Report Property, Plant and Equipment	40
Summary and Conclusion	49
Appendix.....	67
Bibliography	80

List of Tables

Table 1. Summary Data of Cross-listed Firms in the U.S.	52
Panel A: Breakdown by Accounting Standards	
Panel B: Breakdown by Accounting Model	
Panel C: Accounting Standards Used by Revaluers	
Panel D: Revaluation Model Reported for Different Classes of PPE	
Table 2. Summary of Cross-listed Revaluers	53
Panel A: Descriptive Statistics	
Panel B: Industry Breakdown	
Panel C: The Number of Firms Remained in Our Samples	
Table 3. Summary Statistics of Matching U.S. Firms	55
Table 4. Cost of Capital of Cross-listed Revaluers and Matching U.S. Firms	56
Table 5. Descriptive Statistics For Cross-listed Firms.....	58
Panel A: For Non-adopters of Revaluation Model	
Panel B: For Adopters of Revaluation Model	
Panel C: For Matching U.S. Firms	
Table 6. Comparison of Non-adopters and Adopters of Revaluation Model	59
Table 7. Variable Definitions.....	60
Table 8. Correlation Results of Adopters and Non-adopters Dataset.....	61
Table 9. Analysis of Maximum Likelihood Estimates	62
Table 10. Summary of Regression Results.....	63
Panel A: Descriptive Statistics	
Panel B: Pearson Correlation Coefficients	
Panel C: Results of Regression Analysis in four different models	

Introduction

Our research focuses on two issues. First, we examine why some foreign firms listed in the U.S. use fair market valuation for Property, Plant and Equipment, one important item of non-financial assets, while other foreign firms do not when the fair value option for non-financial assets is allowed under IFRS. We do this analysis by comparing the fundamental economic characteristics between these two groups of foreign firms (adopters/revaluers vs. non-adopters/non-revaluers)¹ listed in the U.S. stock exchanges. Second, we test whether the use of fair market valuation by those foreign firms reduces their cost of capital. We do this analysis by comparing the cost of capital of listed foreign firms with that of the matching listed U.S. firms.

Accounting literature shows that in most countries where revaluation of PPE is allowed, the revaluers² have fundamentally different characteristics from non-revaluers. We extend this supposition to include firms in different countries (versus firms from only one country in previous studies). To do this, we first develop theoretical basis for testable hypotheses and then investigate all cross-listed firms in the U.S. markets. Our sample of cross-listed firms (755 firms in total), include both revaluers and non-revaluers. We propose that, cross-listed firms classified as revaluers are (1) larger and (2) more profitable; and have (3) higher book-to-market ratio and closer to unity; (4) more fixed assets; and (5) higher leverage than non-revaluers.

We find that the majority of cross-listed firms choose not to use revaluation model. This could be due to managers' inclination to follow U.S. investors' preferred accounting standards –U.S.GAAP—which does not allow upward revaluation of PPE. In general, the empirical results support our propositions that book-to-market ratios are closer to unity and this suggests that revaluers have a better alignment of market and book value. Furthermore, our results show that debt-to-equity as well as long-term-debt-to-total-assets ratios are higher for revaluers. Our results are consistent with prior research (e.g., Easton et al., 1993 and Lin and Peasnell, 2000) which suggest that the

¹ We call firms that adopt fair market value measurement and reporting for PPE as revaluers or adopters.

² We will be using revaluers (non-revaluers) and adopters (non-adopters) interchangeably throughout this paper.

need to lower the debt-to-equity ratio (the ratio of liabilities to shareholders' equity) is one of the reasons for choice of asset revaluation.

We also find that firm size as well as the intensity of fixed assets affects the decision to revalue firm's long-term assets. In addition, we find that return on assets for revaluers is significantly different from that of non-revaluers. Our Probit analysis shows that firms with higher return on assets ratio tend to revalue assets more. Revaluation of fixed assets increases depreciation and decreases the reporting earnings, and consequently reduces profitability ratios (e.g., return on equity, return on assets). Hence, we suggest that revaluers may have incentives (such as reduced political exposure) to lower their profitability ratios by choosing revaluation model to report their PPE.

The second part of our paper focuses on whether the use of fair market valuation by the foreign firms who are the users of IFRs reduces their cost of capital. There exist two opposing views on the cost of capital for foreign listed companies in the U.S. One line of literature (e.g., Bradshaw, Bushee, and Miller, 2004) explains that cross-listed foreign firms in the U.S. generally have a higher cost of capital compared to U.S. firms as the U.S. investors prefer to invest in more familiar firms (or firms that conform to investors' preferred accounting standards, in this case, the U.S. GAAP). The other line of literature (e.g., Easley and O'Hara, 2004 and Kothari, Li, and Short 2009) explains that revaluation of fixed assets lowers the uncertainty the investors are facing in estimating the fair value of assets and consequently results in the lower cost of capital of cross-listed firms which have the option to use revaluation model to report PPE. Using a matching (based on industry and size) U.S. sample of firms, we test these two competing arguments. We use 27 cross listed firms whose data are available in Compustat and a matching set of 27 U.S. firms. In contrast to our expectation, our regression analysis shows that cross-listed firms who use PPE revaluation model experience higher cost of capital than matching U.S. firms.

One of the main differences between U.S. GAAP and IFRS is the availability of alternative measurement choices (historical vs. fair value) for non-financial assets (Daniel et al., 2010). Although the FASB has issued FAS 157 and 159 to provide similar opportunities and remove some differences between the U.S. GAAP and IFRS in asset

measurements, the fair value option is still not available for all non-financial assets. Currently, IFRS allow the use of fair market valuation (in addition to historical cost) for measurement of almost all non-financial assets, whereas this option is not available under U.S. GAAP. Acknowledging differences in accounting standards between the U.S. and other countries, the Securities Exchange Commission (SEC) had required all publicly listed foreign firms to file a reconciliation form (20-F) with their financial statement (*Accounting Reconciliation Rules for Foreign Firms*). However, on November 15, 2007, the SEC dropped the rules for foreign firms who use *International Financial Reporting Standards* (IFRS). Consequently, since November 2007 (i.e., when the SEC stopped requiring reconciliation statements for foreign companies that follow IFRS), some foreign firms have reported non-financial assets based on fair-market valuation while their U.S. counterparts still report them based on historical costs. If managers of U.S. firms believe that fair value measurement and reporting of PPE reduces cost of capital, if given the option, they may choose to adopt fair-market valuation in lieu of historical costs for their PPE to make sure that they continue to remain competitive in global capital markets. In essence, our results may suggest that rational managers may choose fair value accounting to influence the decision made by investors. If our evidence provides that the use of fair market valuation reduces the cost of equity capital, the evidence will also suggest the relevance of fair market valuation of PPE for the U.S firms.

Literature on the relevance of fair market value accounting states that fair-valuation of all assets and liabilities is useful in estimating the value of a firm (Barth, Beaver, and Landsman, 2001). Many researchers focus on the value relevance nature of financial assets and the empirical results consistently support this general concept. However, the empirical results on value relevance studies of reporting PPE at fair market value are mixed and inconsistent, depending on industries, the nature of assets (non-operating vs. operating assets) and sometimes, firm-size (e.g., Barth and Clinch, 1998). This inconsistency can be due to the lack of existing market for operating assets, hence no readily available data to verify the fair market value and the investors may undermine the credibility of the estimated fair market value made by the foreign firms.

Prior research on fair value accounting use/adoption (e.g., Aboody et al., 1999; Barth and Clinch, 1998; Easton et al., 1993) focuses primarily on the relation between asset revaluations and share prices and/or returns. Share prices reflect investors' assessments of asset values and expectations about future operating performance. However, they also reflect valuation effects of firms' investing and financing decisions. Thus, market-based tests (that is using share price and return) provide only indirect evidence about the relation between asset revaluations and future changes in operating performance. This could be the reason that prior research presents mixed findings regarding value-relevance of fair valuation of PPE. This research, on the other hand, intends to use the cost of capital as a basis of relation between asset revaluation and eventual costs to the firms and its owners. We investigate the capital market response to fair market value choice by foreign listed companies by measuring the cost of equity capital for them and comparing it to the cost of equity capital of a matching set of U.S. firms that are prohibited to report the same assets at fair market value.

Our paper is organized as follows: Section 2 provides an overview of fair market value accounting and its ongoing debate. Section 3 reviews the literature and section 4 develops our hypotheses. Section 5 discusses sample and data collection and section 6 provides detailed analysis of empirical results. And finally, section 7 offers a summary and concludes.

Fair Value Accounting

Definition and Estimation

Accounting literature uses the terms fair value, mark-to-market, market value-based, and market value accounting in similar context (Barth, 1994). In a complete and efficient market, fair market value is well defined and all value-relevant information including firm's specific intangible assets such as managerial skills are fully reflected in the price of the firm. However, when a complete and efficient market does not exist, accounting information system provides relevant information for the firm valuation. Consequently, the use of fair market value for measurement of assets and liabilities becomes a relevant issue for consideration.

Accounting researchers suggest different values that to be used as fair market value: entry value which ranges from an asset's acquisition price to an asset's replacement cost; exit value which is the price at which an asset could be sold or systematically liquidated; value-in-use which is the incremental firm value attributable to an asset. The primary difference between value-in-use and exit/entry value is that latter does not incorporate entity-specific competitive advantages such as managerial skills, private information and other private skills specific to a firm (Barth and Landsman, 1995).

Several studies suggest that value-in-use should be used as fair value as it is the only measure that always integrates total firm value associated with intangible assets such as management skills and private information and is consistent with the going concern principle of GAAP (Barth and Landsman, 1995, Hitz, 2007). Yet, fair value accounting based on value-in-use is possibly the most difficult to implement because estimating value-in-use involves incorporating firm's specific private information and potentially increase in measurement errors and management manipulation (Barth and Landsman, 1995).

In a real-world setting, fair value measurement defined by FASB leads to systematic undervaluation of a firm since exit value of an asset on active market does not incorporate competitive advantages resulting from specific intangible assets, such as management skills and does not provide incremental information content (Hitz, 2007).

Since managers normally have access to more private and realistic economic information of their firms that can be used as appropriate input values of the valuation models, managers are capable of providing information that may be more insightful and useful in making investment decisions.

However, the fair value concept of both FASB and IASB represents the exit market price that would result under idealized complete and perfect market conditions. FASB defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (paragraph 5 of FAS 157). and IASB defines fair value as the amount for which an asset could be exchanged, or a liability settled, or an equity instrument granted could be exchanged, between knowledgeable, willing parties in an arm's length transaction (IFRS 2.A) .

The most significant fair value estimation conceptual framework is the passage of FAS 157 that establishes a framework for measuring fair value. When fair value is used as a basis of measurement of assets and liabilities, FAS 157 requires the use of fair value in a three-tier hierarchy. First, Level 1 hierarchy when valuation is based on quoted prices in active markets, second Level 2 hierarchy when valuation is based on observable market inputs other than quoted prices and third Level 3 hierarchy when valuation is based on unobservable, firm-generated inputs. It is expected that IASB will closely follow FASB's fair value hierarchy (Hitz, 2007).

Debate over Fair Value Accounting

Fair value accounting is one of the most controversial accounting standards. Though fair value measurement has been considered and studied by academicians since 1940s, the accounting standard setters did not begin the implementation of a new market- and event-based fair value accounting model until after the Savings-and-Loans Crisis in the US during the middle of 1980s (Hitz, 2007).

The adoption of fair value accounting provokes intense debate due to its potential increase in relevance versus the potential decrease in reliability and increased use of estimates and judgments (Krumwiede, 2008). The conflict between fair value and historical cost measures can be linked to the qualitative characteristics of relevance,

reliability, comparability, and consistency described in SFAC No. 2 (Herrmann et al., 2006, page 45). Proponents of fair value accounting argue that fair values provide more relevant and timely measures of assets, liabilities, and earnings than historical costs provide.

Also, fair value accounting provides more complete and better representation of the underlying economic values of assets and liabilities of entities (Eccher et al., 1996), actual performance of operations of a firm and is less vulnerable to managerial manipulation (Barlev and Haddad, 2003). In contrast, opponents of fair value accounting argue that fair value measurements are less reliable, especially when active markets do not exist and significant management estimation involves in assessing the value of certain assets and liabilities and subject to management manipulation and fair value accounting leads to reduced reliability relative to historical costs (Barth, 1994).

In the opinions of opponents of fair value accounting, only historical cost accounting produces reliable and verifiable information. Fair value estimates are subjective and investors will be reluctant to use fair value estimates to base capital allocation decisions or valuation of firms. Other concerns come mainly from banking industry. These concerns include the presumed increased volatility associated with fair values would cause banks to violate regulatory net worth requirements “too often,” disrupting the banking system; fair values do not help in estimating future cash flows of securities held to maturity; and banks will alter investment decisions if required to recognize assets at fair value (Barth, 1994).

Contemporary Accounting Standards

In current accounting standards, both FASB and IASB require virtually all financial instruments to be reported using fair value measurement (IFRS 7, SFAS 107, SFAS 133). However, the use of fair value measurement for non-financial assets under U.S. GAAP and IFRS is significantly different (Hitz, 2007). U.S.GAAP is more conservative and requires fair value accounting for non-financial assets impairment only, and does not allow subsequent upward measurement. IFRS on the other hand allow firms have the option to use full revaluation model (fair value accounting) for non-financial

assets, including property, plant and equipment. That is, IFRS allow upward subsequent revaluation as well as asset impairment.

The following section will discuss the related literature on the studies of relevance and reliability of fair value accounting of financial and non-financial assets, particularly, of property, plant, and equipment, on the disclosure quality of financial statements and its impact on cost of capital and how revaluation of fixed assets is used as information signal to reduce information asymmetry.

Literature Review

Value Relevance and Reliability of Fair Value Accounting

In accounting literature, the value relevance of accounting numbers is defined as the extent to which these numbers are associated with share prices and how the capital market responds to the numbers (e.g., Eccher et al., 1996). Conceptually, fair values of all assets and liabilities can be value relevant to financial statement users in assessing firm value (Barth and Landsman, 1995). In general, most of the accounting research literature supports the value relevance of fair value accounting measurement and disclosure. Even though many practitioners question the reliability of fair value measurement, the academic literature provides consistent empirical evidence indicating that fair value instead of historical cost numbers are more significantly correlated with stock returns (Barlev and Haddad, 2003).

Barth et al. (2001) argue that the researchers will not find empirical evidence to support value relevance of fair value accounting if the investors believe that measurement amount is not reliably estimated and if investors do not use fair value estimates provided in the financial reporting in assessing the value of a firm. Hence, most value relevance researches are joint tests of value relevance and reliability, and investors in fact use fair value information to make their capital allocation and reflection in share prices indicates the information usefulness of fair value measurements and disclosures (page 81). Fair value relevance literature focuses mainly on value relevance nature of fair value measurement of financial instruments, primarily due to prevalence in the use of fair value accounting for financial assets, both in U.S. GAAP and IFRS.

Value Relevance Studies of Financial Assets (e.g., Financial Instruments)

Banking industry is one of the fiercest critics of fair value accounting. The manager of accounting policy for the American Bankers' Association has stated: "It will be very difficult to set a fair value for many commercial and industrial loans, which are often unique in value and lending terms... that is why bankers are against such disclosure" (Wall Street Journal, December 17, 1991, quoted at Eccher et al., 1996). Contrary to bankers' assertions, academic research provides evidence on value relevance

of fair value measurement of banks' assets and liabilities and investment securities³ banks hold.⁴ Barth et al. (1995) provide empirical evidence that the apparent volatility of fair value measurements is not reflected in the share prices. They also find that the fair value estimates in fact assist regulators to predict probable capital violations in the near future by the banks. Moreover, findings of Barth (1994) indicate that fair value estimates of investment securities disclosed are sufficiently relevant and reliable to be used by investors in assessing the value of banks' share prices.

Barth et al. (1996) investigate the value-relevance of fair value estimates of assets and liabilities of banks: a disclosure required under SFAS 107. Their findings also suggest that fair value estimates of all major classes of banks' financial assets and liabilities, securities, loans and long-term debt, have incremental explanatory power in explaining the bank share prices relative to book values. While Barth et al. (1996) do not find value relevance for investment securities that banks hold, Nelson (1996) finds their value relevant. Eccher et al. (1996) also find empirical evidence to support value relevance of fair value accounting for investment securities. Their results suggest that the fair value disclosures required under SFAS 105 and SFAS 107 made GAAP financial statements a more comprehensive source of value-relevant information.

Barth and Clinch (1998) provide further evidence that fair value estimates of financial assets are value relevant not only in banking industry, but also in some other non-financial sector firms. The samples are taken from Australia and come from more diverse industries than the U.S. bank samples in the previous researches. Carroll et al. (2003) find statistically significant association between the share prices and the fair values of investment securities using closed-end mutual funds as samples. In addition, the authors document significant relationship between the stock returns and the fair value

³ "Banks' investment securities comprise primarily government-issued debt securities (i.e., Federal, state and local governments, and their agencies) that banks have the ability and intent to hold to maturity."

⁴ Banks have been disclosing fair value of investment securities for many years as it is not that costly to gather information. And the quoted prices of many U.S. Treasury securities are available. Yet, 50-73% of the sample banks' investment securities are non-U.S. Treasury securities and the fair value of investment securities other than U.S. Treasury securities are estimated using a variety of valuation techniques such as matrix pricing and fundamental analysis. (Barth, Fair Value Accounting: Evidence from Investment Securities and the Market Valuation of Banks, 1994)

estimates of securities gains and losses. This paper is able to provide strengthened empirical evidence other papers above are not able to come up with.

Based on the above studies, it can be concluded that fair value estimates of financial instruments, not just limited to banks' investment securities in the U.S., are reliable enough to be value relevant and fair value estimates do not increase volatility in share prices as opponents of fair value accounting claim.

Another set of value relevance research addresses issues relating to non-financial intangible assets. Because fair values of intangible assets are not disclosed under U.S. GAAP, studies investigating the characteristics of intangible asset fair values focus on disclosure under GAAP of other countries where asset revaluation is permitted such as the UK and Australia (e.g., Barth et al., 2001; Barth and Clinch, 1998). Barth and Clinch (1998) find that fair value estimates of intangible assets have shown consistent and significant positive relationship with share prices despite its presumably unreliable estimates and a lot of room for management discretion. Based on this study, it is noteworthy that probable discretion of management manipulation does not entirely diminish the value relevance of fair market estimates of intangible assets.

Value Relevance Studies of Tangible Assets

Some studies investigate the value relevance nature of fair value estimates of tangible assets (property, plant and equipment). As briefly stated before, the FASB standards require fair value exclusively as a measure for impairment losses for tangible long-lived assets. Recognition of fair value gains beyond the cost ceilings is prohibited (Hitz, 2007). On the other hand, IFRS standards allow the use of full revaluation model to record property, plant and equipment, with upward amount beyond historical cost taken to revaluation surplus (other comprehensive income). Similar to intangible assets, most studies focus on fair value estimates of tangible assets using sample firms from UK and Australia where both upward and downward revaluations are permitted.

One subset of this type of studies investigates the value relevance and reliability of investment properties. Most studies find that current value accounting of investment properties are both reliable and subsequently value relevant. Dietrich et al. (2001) use a sample of U.K. real estate firms to determine the reliability of fair value estimates of

investment property. Their study indicates that the real property current value estimates (done by external or internal appraisers) are more closely associated with actual selling price than the book value of the real property.

Dietrich et al. (2001) also document some possible reasons for this disclosure of fair value: managers are using fair value accounting to manage earnings and to increase reported value of assets before raising new debt. Also, they find some evidence that the estimates are more accurate (and perceived as more reliable) if external appraisers are contracted or internal appraisers endorsed by Big 6 auditors conduct the estimates. This finding is different from that of Barth and Clinch (1998) as Barth and Clinch do not find any difference in value relevance and reliability based on different appraisers (internal or external). Barth and Clinch (1998) argue that the internal appraisers (directors) have private information about asset values and incorporate this private information in their value estimates. They also suggest that the market finds value in directors' private information and this value counterbalances the probable managers' discretion and manipulation. In sum, these studies, taken together, suggest that the fair value of investment property is reliable and obviously value relevant and market responds to private information incorporated in the revaluation of investment property.

Value Relevance Nature of Revaluation of Property, Plant, and Equipment

As the main focus of this paper is on the revaluation of the Property, Plant, and Equipment and its impact on the cost of capital of foreign firms listed on the U.S. Stock exchange, we will provide an in-depth literature review on the revaluation of non-financial fixed assets. We find an extensive value relevance research conducted on the revaluation of property, plant and equipment in Australia (Easton et al., 1993), in the UK (Barth and Clinch, 1998; Aboody et al., 1999) and in Hong Kong (Jaggi and Tsui, 2001). The findings show mixed results depending on the asset types and industry classification, but in general, the findings on revaluation of fixed assets indicate that revaluation by Australian and UK firms provide value relevant information (Easton et al., 1993; Barth and Clinch, 1998; Aboody et al., 1998).

Revaluation of long-lived assets is controversial as it involves a lot more management estimation than fair value accounting of financial assets whose quoted

prices are either available in the active market or observable from the price of comparable assets. In many occasions, an active market does not exist to observe the fair value of operating assets, such as in the case of property, plant and equipment. In a case like this, the fair value of the assets in use is determined based on present value of probable future cash flows or by qualified appraisals. Estimation of the net present value of an asset requires projection of earnings, the cash flows they produce and a reasonable and justifiable discount rate. This process calls for management's judgment and inside information (Barlev and Haddad, 2003).

These are amongst the main concerns for not implementing use of fair value accounting to measure and report property, plant and equipment. Despite these, upward revaluation of fixed assets is practiced in the U.K, the Netherlands, Ireland, Australia, Belgium, Switzerland and a number of other countries, including Hong Kong and China (Lin and Peasnell, 2000). Furthermore, managers can exercise discretion on the timing and the magnitude of revaluation (e.g., Lin and Peasnell, 2000; Missonier-Piera, 2007; Brown et al., 1992; Jaggi and Tsui, 2001; Gaeremnck and Veugelers, 1999). IFRSs also permit revaluation of long-termed assets.

In contrast, the revaluation of fixed assets is strongly discouraged in other countries, including in the U.S. One of the factors that led to the introduction of a ban on asset write-ups in the USA in the 1930s was the concern that they increased the likelihood of firms having to write them down when economic conditions worsened (Lin and Peasnell, 2000).⁵ There are problems with an upward revaluation. Not only the upward revaluation of fixed assets violates historical costs principle, but also it violates the principle of conservatism, which dictates that firms should consider only asset impairment and absolutely no upward valuation (Missonier-Piera, 2007).

In addition to its controversial nature, some significantly large costs associated with upward fixed assets revaluation include: fees associated with appraising fixed assets;

⁵ "Revaluation have not always been a vilolation of U.S. GAAP. Prior to 1940, upward revaluation of property, plant, and equipment were an acceptable accounting alternative in the United States. However SEC began discouraging fair value accoounting for PPE in response to unsubstantiated asset revaluation by corporations made in 1920s prior to the formation of the SEC, and by 1940s, SEC has essentially removed the option of upward revaluation of PPE. By the 1950s, the disclosure of fair value in the footnotes has been prohibited." (Herrmann et al., 2006)

higher audit fees where auditors have to make additional review of the assumptions the company makes when estimating the fair value of assets internally; the additional expenses for time spent in discussions and negotiations between auditors and management on the new asset value; and recordkeeping costs for less conventional transactions (Brown et al., 1992, p.37). Despite these substantial costs, the managers may decide to report revalued prices in an expectation of its positive impact on investors' belief. In general, when a rational manager decides to revalue non-financial assets upwards, the costs of revaluing are assumed to be less than the economic benefits derived from the revaluation (Cotter and Zimmer, 1995, p. 137). As revaluation of fixed assets can be done at the discretion of management, reliability of revaluation amount is highly controversial and subject to ongoing intense debate (e.g., Aboody et al., 1999 and Lin and Peasnell, 2000).

However, accounting literature asserts that information asymmetry on the firms' assets value could be reduced by this departure from historical cost principle. Through revaluation of fixed assets, a firm may disclose its underlying economic value of fixed assets and hence actual financial situation to investors (Brown et al. 1992, p. 41). Some contend that when an asset's book value significantly differs from its fair value, management should make the relevant adjustment in order to reduce information asymmetry (e.g., Brown et al., 1992) even if this means increasing the book value of the asset in question and violates historical cost and conservatism principles (Missonier-Piera, 2007). The third potential benefit could result from the reduction of the firm's reported accounting rate of return; hence improving its bargaining position with the unions and government regulators.

Consequently, potential benefits associated with asset revaluation include the reduction of the risk of violating accounting-based covenants as a result of a strengthened balance sheet and signaling of a better prospect for the firm (firm's future performance), while reducing accounting rate of return for current period(s).

Barth and Clinch (1998) show that for some industries there is a strong and consistent relationship between the fair value of financial, tangible and intangible assets with share prices and present value of analysts' forecast future earnings. They also found

that investors do not marginalize the valuation based on the source of appraisal, that is, appraisal conducted internally by management or external appraisers. Also the authors find that in determining the value relevance of fair value measurement, whether the revaluation is taken in timely manner is not an important factor (page 201). The evidence shows that revaluations of PPE more than three years old are value relevant more consistently than timely revaluations. These findings suggest that lack of revaluation timeliness does not eliminate the revalued amounts' relevance. Barth and Clinch (1998) provide evidence that both upward and downward revaluations are value relevant.

While revaluation of assets directly related to operations results in more value-relevant compared to assets that are not directly related to operations, Barth and Clinch (1998) did not find consistent association between revaluation of Property Plant and Equipment (PPE) and share prices. The authors find that revalued aggregate PPE is positively associated with share prices for firms in financial and mining industries. Revalued PPE is more consistently value relevant and significantly associated with returns for smaller firms. Finding that revalued amounts are significantly associated with share prices suggests they have implications for firm's future profitability.

Barth and Clinch (1998) also find that revalued *plant and equipment* is value relevant for mining firms; it is insignificantly related to share prices for non-financial firms and significantly negatively related to share prices for financial firms. (page 201) Revalued *property* is not significantly associated with share prices for any industry but for nonbank financial firms. The results of Easton et al. (1993) also find that the level of the revaluation reserve is a significant explanatory variable for stock market prices and returns of the subsample of industrial firms with high change in debt-to-equity ratio but not for firms with a low change in debt-to-equity ratio.

Some other studies that focus on UK firms cross-listed in the US capital markets provide evidence of a negative relation between share prices and revaluation balances (Amir et al., 1993; Barth and Clinch, 1996). Because these studies focus on UK-to-GAAP reconciling items, they do not investigate the relation between current year revaluations and returns. Evidence on Australian revaluations generally supports the

value-relevance of the reconciliation items.⁶ As mentioned before, Easton et al. (1993) and Barth and Clinch (1998) find consistent evidence of value-relevance for investments and intangible assets, but inconsistent evidence of value-relevance for property, plant, and equipment revaluations, the focus of our study.

Aboody et al. (1999) link upward revaluations of fixed assets by UK firms with realized future changes in firm operating performance. They measure future performance as changes in operating income and cash from operations. Their study finds that asset revaluations by UK firms are positively associated with future changes in operating performance, over one, two and three years subsequent to the revaluation. This finding provides strong evidence that revaluations signal changes in asset values that are realized in subsequent operations. They also find that upward revaluations are more significantly related to future performance and returns in a period of consistently increasing asset values than in a period of economic volatility. Although Aboody et al. (1999) find that revaluations are significantly and positively associated with future changes in operating income, the effect of revaluation on operating cash flow and share prices is not significant. The authors suggest that prices of cross-listed firms reflect something other than the revaluations' relation with future operating performance.

Barth and Clinch (1996) also do not find any association between U.K. revaluation amounts and share prices. Barth and Clinch (1996) use the 20-F reconciling items filed by firms domiciled in Australia and UK whose shares trade in U.S. equity markets. Even though revaluations of assets are value relevant, this evidence suggests that revalued amounts may be perceived as unreliable by the U.S. investors. However, in a similar study using 20-F reconciling items of UK and Australian firms, Amir et al. (1993) find that the reconciliation of both aggregate and individual revaluation of property are value relevant.

Intuitively, bigger firms with higher number of analysts' followings may have other channels to provide information to the capital market, but smaller firms may have to rely only on audited financial reports, and hence more inclined to revalue property,

⁶ Primary reason for the differences between UK-to-U.S. GAAP reconciliation is due to the UK firms' property, plant, and equipment revaluation. This revaluation is reported in 20-F reconciliation documents filed with the SEC.

plant and equipment to lower the costs associated with information asymmetry. Although the possibility of managers' manipulation or unintentional estimation error weakens the relevance of fair value estimates, it does not entirely diminish the value relevance of tangible long-lived assets revaluations (Barth et al., 2001).

Motivation behind PPE Revaluation

In addition to the value relevance of the revaluation of the property, plant, and equipment, accounting literature documents the motivation behind this decision to revalue in order to understand the economic incentives behind this controversial accounting practice. These studies try to find fundamental differences between the users of revaluation model and users of cost model for PPE. Most studies of fixed asset revaluation focus on upward revaluation because upward revaluation is the most controversial of fixed assets revaluation.

Lin and Peasnell (2000) suggest that the likelihood of equity depletion in current period or in near future motivates managers to revalue assets upwards, and revaluation is generally negatively related to the market-to-book ratio. In the UK, equity depletion arises when goodwill is directly written off from book equity after acquisitions and mergers. This equity depletion may lead to violation of debt contracts. It is documented that managers of UK firms have considerable discretion when to revalue assets and revaluers generally have higher growth opportunities, facing borrowing constraints and had relatively low cash reserves. Lin and Peasnell (2000) explain that revaluation of fixed assets avoids the problems of violating debt contracts by increasing the value of equity in the most justifiable manner and not be viewed as creative accounting. They also argue that revaluation cannot be treated as a discrete event, and the magnitude of asset write-up or write-down primarily influences the revaluation decision.

Their findings show that the factors that influence the upward revaluation are essentially different from those that influence the downward revaluation. For instance, for a firm that has revalued its assets upward in the past, auditors' influence on downward revaluation will be greater whilst non-existent on upward revaluation due to conservatism exercised by most auditors. Since revaluation changes financial position of a firm particularly in the case of upward revaluation, it can directly affect contracts, such as debt

contracts with the creditors, linked to accounting numbers. Upward asset revaluation reduces the debt-to-equity ratio and helps firms to be within the acceptable range of borrowing limits. This is also consistent with observation made by Easton et al. (1993) who document that the primary motivation for asset revaluation was the need of firms to reduce debt-to-equity ratios.

Brown et al. (1992) also provides empirical evidence consistent with the explanation that asset revaluations are motivated by borrowing considerations. Brown et al. (1992) argue that revaluation generally affects contracting and political costs and managers manage how and when to revalue firms' assets. These authors further propose that assets valuation of Australian firms may help diminish information asymmetries between the managers and capital market participants and revaluation of assets they manage is a way of signaling private information which managers hold.

As briefly stated above, Easton et al. (1993) document that the primary motivation for asset revaluation was the need of Australian firms to reduce debt-to-equity ratios. In addition to the intent to lower debt-to-equity ratios, Easton et al. (1993) argue asset revaluation by Australian firms loosens firms' debt constraints, and enhances financial flexibility. They find that most frequently revalued item is "property" in the 1980s. Easton et al. (1993) recommend two primary reasons for relatively frequent revaluation of property: the divergence between market values and historical costs in the 1980s and that the property can be revalued easily, inexpensively, and independently by licensed valuation practitioners. Firms do not revalue plant and equipment except in the case of long-lived plant assets, for example, a mill or refinery. Short-lived plant and equipment items are generally not revalued.

The analyses of Easton et al. (1993) support the notion that book values including asset revaluation reserves are more aligned with the market value of the firm than historical book values. That is, asset revaluation reserves as reported under Australian GAAP help to provide a better summary of the current state of the firm. Usually, growth opportunities is highly valued by the market and measured by decrease in debt-to-equity ratios, upward revaluation which decreases debt-to-equity ratio is perceived as a signal of extant growth opportunities (Easton et al., 1999). As it is more costly for firms with

investment opportunities to seek outside financing, firms with growth opportunities have incentives to revalue assets (Brown et al., 1992).

Gaeremynck and Veugelers (1999) provide theoretical basis for identification of industries where revaluation can be effectively used as a signal of future performance. Evidence in their study shows that manager in industries with high variance in performance and low debt-to-equity ratios tend to use revaluation of fixed assets as signals of their future performance. They argue that performance should be measured by either book-to-market ratio or the ratio of future cash flow and fixed assets before revaluation. These findings are not similar to Missonier-Piera (2007) and Brown et al. (1993) who find that revaluation of fixed assets is used as a primary tool to lower debt and political costs, to meet non-domestic investors' information needs, and to inform the shareholders of management's performance for compensation evaluation. However, similar to others Gaeremynck and Veugelers (1999) also find that highly leveraged firms, which are close to, and want to avoid default on their debt covenants are more likely to revalue assets.

For financial institutions, Gaeremynck and Veugelers (1999) hypothesize that revaluation is used when firms are close to violation of their legal requirements (net worth less the amount of capital). The closer the company is to legal violation, the more likely for a firm to revalue fixed assets. Furthermore, revaluation decision is influenced by the composition of debt from the bank. In most of the accounting standards, the revaluation of fixed assets results an increase in the book values of fixed assets, and revaluation reserve, which is part of the owner's equity. If firms revalue depreciable assets, then revaluation would result in a decrease in accounting profit of the period, but a firm's net worth increases and the probability of insolvency decreases. Gaeremynck and Veugelers (1999) defend their focus on the study of revaluation of PPE by claiming that revaluation of financial assets does not provide information about future performance of the firm.

Consistent with Gaeremynck and Veugelers (1999), Aboody et al. (1999) and Jaggi and Tusi (2001) show a positive association between upward revaluation of PPE and the firm's future performance, suggesting that managers' choice was actually

motivated by asset value modification consideration. Managers are simply reporting current value of the firm by revaluing the fixed assets. Also some state that to reduce take-over bid, firms tend to revalue fixed assets as revaluation brings book and market value closer (Brown et al., 1992 and Easton et al., 1999). Brown et al., (1992) finds that revaluers are highly leveraged and closer to violating debt constraints and upward revaluation helps avoid violations of debt covenants, restricting debt levels. They indicated that when a revaluation is undertaken other than at the balance sheet date, it tends to be associated with debt contracting and decreased borrowing capacity (measured by lower cash flows than in the previous period), increased secured borrowing and high leverage, all encourage firms to revalue assets (Brown et al., 1992).

Financial statements are also intended for creditors who use accounting information to analyze a firm's financial standing and assess the risk. As firms tend to raise capital to finance certain projects through banks and other credit facilities, managers may use available accounting methods to reduce the perceived risk of creditors and thus reduce their financing cost. To reassure creditors, managers may opt to revalue fixed assets upwardly. This reduces the information asymmetry and leverage ratio and related perceived default risk. Consequently, firms with higher leverage ratios tend to revalue assets more (Missonier-Piera, 2007).

Consistently, accounting literature asserts that firm size influences revaluation decision (Gaeremynck and Veugelers, 1999, Brown et al., 1992, Missonier-Piera, 2007). Gaeremynck and Veugelers (1999) find firms that revalue assets are larger, have larger property holdings and lower market-to-book values. Also, Daniel et al. (2010) argue that the use of fair value measurements can be influenced by the size of the firm. They suggest that economy of scale will help larger firms to absorb the cost of revaluation easier than smaller firms.

Missonier-Piera (2007) finds that firm's cross-country listing status and ownership structure influences managers' accounting decision. As managers have discretion over the publication of financial reports, they tend to select the optimal accounting method to convince the shareholders that their performance is satisfactory to boost the management's or firm's image. Since upward revaluation *decreases*

profitability ratios, managers are less likely to revalue assets in very spread ownership structure. Hence, in spread ownership structure, managers are less likely to revalue assets.

Information Disclosure and Cost of Capital

Laws and regulations of each market provide detailed description of minimum disclosure required from public firms. But many larger and multinational companies voluntarily disclose additional information beyond what they are required to do (Stulz, 1999). This line of literature is rooted in the fact that capital market participants make capital allocation decisions based on the information available to them (Francis et al., 2008) and failure to provide adequate information can result in higher cost of capital. The underlying assumption is that management typically has more information about the profitability of a project than do investors and there is information asymmetry between the management and the investors. Stulz (1999) suggests that more extensive disclosure reduces monitoring costs borne by the investors; hence their willingness to invest in the firm. Generally, it is theorized that voluntary disclosure diminishes the information asymmetry, increases market liquidity and therefore reduces the cost of capital. Sengupta (1998) investigates the relationship between the disclosure quality and the cost of debt. His evidence indicates that higher disclosure quality reduces effective debt interest rate.

As a result, as long as the disclosure cost is less than its benefit, firms will commit to the highest disclosure level in order to lower their cost of capital (Francis et al., 2008). While there is evidence that lower disclosure level is associated with higher cost of capital (Botosan, 1997), there does not seem to be enough empirical evidence to support this theory as most studies provide results that are mixed and situational.⁷ Some suggest that without enough information disclosure to assess firms' value, investors add a premium for non-diversifiable estimation risk and subsequently it results in higher cost of capital (e.g., Botosan, 1997). In contrary, Francis et al. (2008) contend that investors may have to use more resources to collect more private information when most information is

⁷ Evidence of effect of disclosure on the firm's capital market environment, in particular, the cost of capital, is limited and inconclusive (e.g., Botosan 1997, Botosan and Plumlee, 2002, Francis et al., 2006, and Core et al., 2008).

disclosed in financial statements and hence higher disclosure level may raise the cost of capital (e.g.,

Botosan (1997) investigates the relationship between the disclosure level and the cost of capital using firms from a single industry. For comparable firm sizes with low analyst following, the author finds a negative association between the disclosure level and cost of capital. However, she finds no such evidence for firms with high analyst following. This suggests that overall disclosure in the financial statement is not the only proxy in measuring the level of disclosure as some firms provide information through analyst reports as well as other channels. In contrast of Botosan's single industry and one year study, Francis et al. (2008) use multiple industries with multiple firms' year observations. Their study finds higher level of voluntary disclosure is associated with lower cost of capital. However, their findings suggest that ultimately the earnings quality, not voluntary disclosure, influences the cost of capital and "voluntary disclosure is fundamentally driven by earnings quality" (Francis et al., 2008, p. 54).

Kothari et al. (2009) extends Botosan (1997) by taking into consideration the content of the disclosure (favorable or unfavorable information in the disclosure) when they measure the effect of disclosure on the cost of capital. Kothari et al. (2009) find that positive disclosure lowers the cost of capital, stock return volatility and analysts' forecast dispersion, whilst negative disclosure increases the cost of capital, stock return volatility and analysts' forecast dispersion.⁸ Their results are empirically significant and support their hypothesis that market responds differently to the content of the information in disclosure statements, and cost of capital is related to the content (that is favorable or unfavorable news) of information disclosure (pages 1641 and 1657). Easley and O'Hara (2004) theorize that the level (private or public) of information is priced by the investors and it affects the cost of capital. Firms with little available private or public information, such as start-up firms going for IPOs, face higher cost of capital than incumbents. And

⁸ Management may have incentives to report optimistic information but by doing so, the management is more likely to face litigation risk. When management discloses bad news, the market finds this bad news more credible than disclosure of optimistic news. In general, bad news is incorporated in earnings report earlier than good news due to conservative nature of management and risk of litigation (Basu, 1997 and Kothari et al., 2009).

Investors demand a higher return to hold stocks with greater private information and lower public information.

Fair Value Accounting of PPE from an Information Perspective: Decision to Revalue Fixed Assets and its Impact on Cost of Capital

Financial information system is one of the most important outlays for disseminating private information by firms (Easton et al., 1993; Easley and O'Hara, 2004). In countries where the stock market does not exist and share prices are not readily available, accounting information and accounting choices are more important as these are the only channels for the firms to disseminate the performance of the firms to the investors or suppliers of funds. Theoretically, investors should be able to use accounting information to measure the value of a firm. Thus firms are responsible to report the value of the company as accurate as possible under the measurement perspective.

Hitz (2007) suggest that in a complete and efficient market, FASB and IASB contend that firms incorporate expected future cash flow by reporting assets and liabilities at fair value and investors are capable of extracting a firm's value (in terms of estimated future cash flows) from reported accounting numbers (page 324). In an ideal world, a firm's value is equivalent to the market values of all the firm's assets and liabilities directly reported on the financial statements (Hitz, 2007). Furthermore, in a complete and perfect market, fair values of assets and liabilities are known in the market and financial statements provide no incremental value to market participants as the information is readily available in the marketplace.

In an incomplete and imperfect world, however, fair values of some assets and liabilities are not known to the market and estimates are used to measure and report some assets and liabilities (especially for non-financial assets and liabilities). As such, the revaluation or disclosure market values for PPE should presumably provide higher level of informational content than those assets without ready market. The FASB's fair value is different from the value in use which include entity-specific competitive advantages (SFAS 157, para. C32). Hence, any incorporation of firm-specific information essentially violates the definition of fair market value of FASB. However, conceptually the value in use estimates of property, plant and equipment (operating assets) constitute

the most informational content value relevant to the investors given the fact that these estimates are not readily available in the market like financial instruments.

Trueman (1986) states that the market values managerial ability to anticipate changes in firms' underlying economics and theorizes that managers use forecasts to signal their ability as well as firms' earnings. From this perspective, managers may use financial reporting to signal firm's future operating performance. To eliminate the information asymmetry between the investors and the managers, several different signaling mechanisms are used. Some of the examples of signaling mechanisms include financial signals such as the level of debt, the level of debt with the managers' share of equity, the dividend level; accounting signals, such as, the type of auditor, the inventory method or the accounting choice to report property, plant and equipment (Gaeremynck and Veugelers, 1999).

Brown et al. (1993) and Gaeremynck and Veugelers (1999) suggest that by revaluation of fixed assets, a firm implicitly informs investors of the expected future cash flow of the firm, which is an indicator of its success or future performance. From this informational perspective, revaluation is used as a signaling mechanism of a firm's future performance and revaluations permit managers to signal important information to investors to resolve the information asymmetry problems (Brown et al., 1992). Gaeremynck and Veugelers (1999) provide evidence that signaling of future performance can be done only by a firm's decision to revalue fixed tangible assets, but not by decision to revalue any other financial or intangible assets. After observing this accounting signal, i.e. observing whether or not the firm revalues its fixed assets, investors decide on whether or not to invest in the project, which generates either high or low cash flows. Naturally, managers are better informed of information about projects for which they seek financing (Easley and O'Hara, 2004; Gaeremynck and Veugelers, 1999).

Investors of private firms (mostly banks) perceive revaluation of assets as a negative signal of a firm's performance, however. Then in private firms, it is more likely that investors will not provide funds for a project or they will demand a higher rate of return for their investment in that project when fixed assets are revaluated. We can infer, then, that the cost of capital is negatively associated with the decision to revalue fixed

assets for privately held firms. However, this signaling mechanism works only in industries with a high variance in performance and low debt-to-equity ratios (Gaeremynck and Veugelers, 1999).

Since managers have private information regarding appropriate input values to be used in the valuation models, they may use their private information in opportunistic ways. This information asymmetry between investors and managers can be a serious threat to the reliability of fair values (Song et al., 2009). Among the levels of fair value hierarchy set by FASB, level 3 items are subject to inputs estimated by the management. Song et al. (2009) examines whether the value relevance of Level 3 fair values depends on the firm's corporate governance mechanisms. The motivation for their test arises from the greater subjectivity on the part of management in measuring and reporting Level 3 fair values.

Although in some instances managers may use their private information to credibly report fair values (e.g., Barth, Beaver and Landsman, 2001), prior studies also provide evidence that managers may manipulate inputs for fair values for their own interests (e.g., Aboody et al., 2006; Barlev and Haddad, 2003). For firms with weaker corporate governance mechanisms, Song et al. (2010) argue that information asymmetry problems associated with Level 3 fair values may be greater, and unreliable nature of estimations lowers value relevance of these disclosures.

We assume that managers, using their subjective valuation techniques, estimate fair values utilizing inputs that have firm specific nature. As such, the information content provided by the managers is expected to be a better reflection of firms' value. This study looks for convincing evidence that fair value accounting and subsequent lower cost of capital, play a role in changing managers' decision in choosing an optimal accounting method. The reliability of fair value information provided by the management is beyond the scope of this study. But we acknowledge that there is always a risk associated that management use of private information in opportunistic ways. Nevertheless, the value of information disclosure is perceived as not how close the estimation of fair value measurement is from its actual value-in-use, but how fair value measurement is capable of changing expectations and consequently altering decisions or

of incorporating value relevant information (Hitz 2007). In this sense, managers are capable of transforming private information to public one by disclosing value-in-use of assets in firms' financial statements in order to lower cost of equity capital (Easley and O'Hara, 2004).

Based on prior literature we discussed above, we develop our hypotheses in the next section.

Hypothesis Development

We are interested in investigation of the choice of upward fixed asset revaluation in U.S. stock market for two reasons. First, even though accounting literature has extensive research on the association between a firm's characteristics and accounting method choices, the choice of historical costs versus fair value for fixed assets by foreign cross-listed firms in the U.S. capital market has yet to be studied. While most previous studies have been concerned with firms in an Anglo-Saxon environment, no research has addressed this issue for foreign cross-listed firms traded in the U.S. stock market. Second, to the best of our knowledge, there is no study that compares the cost of capital between the U.S. firms (which are not allowed to use revaluation model to report PPE) and their cross-listed competitors that use IFRS fixed assets revaluation option. We would like to find out how the U.S. investors react to accounting choice to revalue property, plant and equipment.

We limit our study to fixed (long-term) assets revaluation because the economic incentives associated with fixed assets revaluations can be better identified (Brown et al., 1992, p. 37). As previously mentioned, we intend to determine whether the cross-listed firms who adopted fair market valuation for PPE were fundamentally different from cross-listed firms that were non-adopters (users of cost model to report PPE). Some of prior research provides some distinguishing characteristics between the revaluers and non-revaluers. However, there is a need to develop an economic theory to distinguish between the revaluers and non-revaluers of fixed assets when an option to revalue fixed (long-term) assets exists.

Consequently, the first group of our first hypothesis and its sub-hypotheses address a theoretical framework to define the distinguishing characteristics between the revaluers and non-revaluers. Our second hypothesis will consider if the U.S. market rewards the foreign revaluers with lower cost of capital given recent developments in the U.S. capital market.

Why Revaluers are Fundamentally Different in Economic Characteristics from Non-revaluers

The first part of our analysis will empirically investigate the economic factors likely to affect revaluation choice for fixed assets in foreign firms listed on the U.S. stock exchange. We will hypothesize and test for differences in firm economic characteristics such as: firm size (measured in sales or revenue), closeness of book-to-market ratios, contractual costs (leverage, debt-to-equity ratios), profitability ratios that may influence political costs, and cross-listing in the U.S. market. In general, we hypothesize that:

H1: Revaluers shows different economic characteristics from non-revaluers.

Our review of accounting literature indicates that those who revalue their long-term (fixed assets) are reporting the underlying economic value of the firms to the investors through the effect of the choice in their financial reports. Managers whose objectives are in-line with those of the firms' owners may exercise accounting choices that would ensure that the book value of the firm is consistent with its actual market value, signaling the firms' future performance by using revaluation option. The survey of CFOs shows that the primary reason for firms that are revaluing assets is to report the actual value of their assets. This suggests that the firm's reported book value should be closer to its market value when revaluation methods are chosen. Evidence shows that the positive association between upward revaluation and the firm's future performance, suggesting that managers' choice was actually motivated by asset value modification consideration (e.g., Aboody et al., 1999; Jaggi and Tusi, 2001). By revaluing the fixed assets, the managers are simply reporting current value of the firm.

Gaeremynck and Veugelers (1999) also report that in industries with high variance in performance level, managers successfully use revaluation as a signal of firm's future performance to investors. They measure variance in performance book-to-assets ratio or ratio of future cash flow and fixed assets before revaluation. Brown et al. (1992) and Easton et al. (1999) report that firms tend to revalue fixed assets as revaluation brings book and market value closer and to reduce take-over-bid.

In general, rational managers can revalue assets in order to make sure that the accounting numbers reflect the actual firm's value, inform investors of firm's future

performance and consequently lower the risk of being taken over. If these propositions are valid for the cross-listed firms, we should be able to observe that book value after revaluation to be closer to the market value. We, similar to most market studies assume that the market is efficient enough to use the information provided in the financial reports and the firm value is reflected in the share price. We predict that the average book-to-market ratios of revaluing firms will be as closer to one when compared to that of the non-revaluing firms. This leads to the following hypothesis:

H1a: Revaluers have book-to-market ratio closer to unity than non-revaluers.

As firms tend to raise capital to finance certain projects through banks and other credit facilities, financial statements are also intended for creditors who use accounting information to analyze a firm's financial standing and assess the risk. Managers seek to reduce financing cost may influence the accounting decision to reduce the perceived risk of creditors and thus reduce debt cost. To reassure creditors, managers may opt to upward revalue fixed assets. Upward revaluation reduces debt-to-assets ratios (leverage) and may improve firm's ability to raise new loans (e.g., Brown et al., 1992; Lin and Peasnell, 2000; Jaggi and Tsui, 2001). This assertion suggests creditors' preference for fair value of fixed assets and as a consequence debtors present fixed asset at fair value in their financial statements. Highly leveraged firms, which are close to, and want to avoid default on their debt covenants are more likely to revalue assets (e.g., Missonier-Piera, 2007). In general, revaluers are found to be highly leveraged and closer to violating debt constraints than non-revaluers (e.g., Gaeremynck and Veugelers, 1999) and upward revaluation helps avoid violations of debt covenants, restricting debt levels. (Brown et al., 1992) We predict that cross-listed firms who revalue PPE will have higher leverage ratios (debt-to-total assets) and higher debt-to-equity ratios. This leads us to predict that leverage ratio is significantly different between revaluers and non-revaluers. The following hypothesis will test this proposition.

H1b: Revaluers have higher leverage and debt-to-equity ratios than non-revaluers.

As mentioned previously in the literature review section, firm size influences the decision to revalue fixed assets. However, there are two opposing theories on this statement. On one hand, some argue that bigger firms with higher number of analysts'

followings may have other channels to provide information to the capital market, but smaller firms may have to rely only on audited financial reports, and hence more inclined to revalue property, plant and equipment to lower the information asymmetry (Barth and Clinch, 1998). Consistently, evidence shows that revaluation of property, plant, and equipment is more value relevant for smaller firms. Hence, it can be inferred that investors are more likely to use fair value measurement provided in the financial statements of smaller firms than that of larger firms.

On the other hand, some propose and find evidence that firms that revalue assets are larger, have larger property holdings and lower market-to-book values (e.g., Gaeremynck and Veugelers, 1999, Brown et al., 1992, and Missonier-Piera, 2007). Daniel et al. (2010) argue that the use of fair value measurements can be influenced by the size of the firm due to relative lower cost of revaluation for bigger firms. The authors state that “the cost of valuation of similar assets may be similar no matter the value at which the asset is measured (e.g., the cost of appraising residential houses in most cases is the same no matter how much the value of the house).” (p. 14) Hence the bigger firms enjoy economy of scales in revaluing their assets and are more likely to revalue PPE.

As mentioned in the literature review, there are significant costs associated with fixed assets revaluation and when a rational manager decides to revalue non-financial assets, the costs of revaluing are assumed to be less than the economic benefits derived from the revaluation (Cotter and Zimmer, 1995, p. 137). We propose that the significance of the amount of PPE (when compared to total assets, for example) will have a better success in informing investors of future performance of the firm and its operating assets. That is the larger PPE amount is in proportion to total assets (intensity of fixed assets) of the firm the more likely its influence and the more likely the managers will be inclined to chose revaluation (use of fair-value) option for PPE. Hence, firms that invest heavily in fixed assets may have more incentives to adopt revaluation. Stated differently, revaluers will have higher intensity of fixed assets than non-revaluers. It is theoretically sound that larger firms are more able to cover the costs associated with the revaluation. Therefore we predict that revaluers will be larger, have higher proportion of fixed assets

amount, and have lower market-to-book values. The following hypothesis will test our prediction.

H1c: Revaluers are generally larger in terms of sales and market value, have higher intensity of fixed to total assets, and lower market-to-book values. Also, firms tend to revalue property more than plant and equipment.

Given that the earnings effect of revaluation is reported in other comprehensive income items, one potential benefit of revaluation is the reduction of the firm's reported *accounting rate of return*; hence improving its bargaining position with the unions and government regulators. Accounting literature documents that revaluation of fixed assets is often used as a primary tool to lower debt and political costs, meet non-domestic investors' information needs and also to inform the shareholders of management's performance for compensation evaluation (e.g., Missonier-Piera, 2007; Brown et al., 1993). Bigger firms are more visible to political environment. To reduce political cost, the firms tend to reduce their profitability ratios, such as return to equity, return on assets. As revaluation increases depreciation and decreases the reporting earnings, it reduces profitability ratios (return on equity, return on assets) and hence may reduce political exposure. Consequently we argue that some firms are likely to revalue assets to reduce political costs and predict that return on assets and return on equity ratios will be lower for revaluers.

H1d: Revaluers have lower return on assets and return on equity ratios.

Even though prior literature focuses on the implication of upward revaluation is to reduce debt costs, we should not ignore the fact that managers take into account investors' preferred accounting choice. In the U.S. capital market, understandably, U.S. institutional investors prefer U.S. GAAP over other national GAAP or even IFRS, which can be termed as home-bias. The U.S. investors are more familiar with U.S. GAAP and they find financial information prepared in accordance with U.S. GAAP more useful, better comparable and easier and less costly to interpret. Hence, foreign cross-listed firm are more likely to use an accounting method that the U.S. investors are most familiar with, that is, firms are more likely to choose accounting standards closely conform to the U.S. GAAP. Missonier-Piera (2007) hypothesizes that upward revaluation is negatively

associated with the firm's cross-country listing status. In general, cross-listed firms are less likely to revalue PPE. As U.S. GAAP does not allow upward revaluation of PPE, (Bradshaw et al., 2004) we predict that cross-listed firms are less likely to revalue PPE. *H1e: Foreign cross-listed IFRS firms are less likely to report property, plant, and equipment at fair market value.*

Decision to Revalue Fixed Assets and its Impact on Cost of Capital

The second part of this research focuses on the U.S. capital market response on PPE revaluation option for cross-listed firms. We measure the capital market response by measuring the cost of capital of each firm in the year that the firm made the accounting method choice. In this paper, we particularly focus on the upward revaluation of property, plant and equipment and factors that may influence firms to choose this accounting method choice.

As we stated, the most controversial fair value accounting is not the revaluation of fixed assets but the upward revaluation of fixed assets, which violates both historical cost and conservatism principles. We are interested in why some firms are still practicing to report property, plant and equipment under revaluation model, even at the risk of being perceived as reporting unreliable and less verifiable accounting numbers. And we are analyzing how the U.S. capital market is responding to this controversial accounting choice. The following paragraphs provide the theoretical basis for our expectation.

Prior research (e.g., Aboody et al., 1999; Barth and Clinch, 1998, Easton et al., 1993) provides evidence that property, plant and equipment revaluation amounts, both upward and downward revaluations, are value relevant in non-financial sectors, and asset revaluations are positively associated with future performance of the firm, up to 3 year period after revaluation. Even though some findings are mixed, in general, the revaluation of fixed assets shows value relevance in some industries and the revaluation amount reflects future performance of a firm and suggests that revaluation of assets provides a better summary of the current economic state of the firm. (e.g., Easton et al., 1993) This literature leads us to expect that revaluation of PPE provides a better predictive value of firm's assets and liabilities, and as a consequence reduces information asymmetry and lowers the cost of capital.

Some accounting literature asserts that the market values managerial ability to anticipate changes in firms' underlying economics (Trueman, 1986) and differences in level of information provided to the investors affect the cost of capital (e.g., Easley and O'Hara, 2004). In theory, managers are capable of transforming private information to public one and this reduces information asymmetry, increases liquidity and lowers the cost of capital (Hitz, 2007 and Francis et al., 2008; Stulz, 1999). As mentioned above, reporting fair value of property, plant and equipment is a form of disclosing underlying value of a firm and Botosan (1997), Francis et al. (2008) and Kothari et al. (2009), among others, find that this assets disclosure level is negatively associated with the cost of capital; Sengupta (1998) finds that the higher the disclosure level, the lower the interest rate in issuing debt.

Revaluation of property, plant, and equipment is found to be more value relevant for smaller firms in Australia (Barth and Clinch, 1998). The revaluation of plant and equipment for mining firms where the fixed assets to total assets ratio is higher shows significant association with share prices and revaluation amount. Similar to the findings of Barth and Clinch (1998), we believe that cost of capital of smaller firm and those firms with higher fixed assets intensity, may be lower when revaluation option is selected.

As mentioned in the previous sections, revaluation of property, plant and equipment is an information signal used by firms and responded by investors in order to allocate capital to the firms, and this has a great impact on the rate of return demanded by the investors on their investment. Managers are capable of incorporating private information to the investors by revaluing their operating assets, which reflects the future performance of the firm. If it is true that investors are using this revaluation as a signal to the future performance of the firm or using the fair value of fixed assets to determine the value of the firm, we believe that this will be reflected in firm's cost of capital. Conceptually, if the investors use this revaluation model as a signal of future performance or the revaluation value to determine the firm's value, the decision to revalue PPE should have a negative association with the cost of capital. Stated differently, the mere choice should result in a reduction in the cost of capital.

Gaeremynck and Veugelers (1999) state that signaling of future performance can be done only by a firm's decision to revalue fixed tangible assets, but not by decision to revalue any other financial or intangible assets. After observing this accounting signal, i.e., observing whether or not the firm revalues its fixed assets, investors decide on whether or not to invest in the project. Gaeremynck and Veugelers, (1999), however found that for privately held firms, the revaluation of assets is found to be a negative signal. For privately held companies their investor (mostly creditors) perceive revaluation of assets as a negative signal of a firm's performance, and they demand a higher rate of return for their investment when a firm chooses to revalue its fixed assets. If this finding is applicable to the public companies, we can deduce that revaluation of property, plant and equipment not only provide value relevance information but also itself is a negative information signal and the decision to revaluation is associated with a higher cost of capital.

However, due to mixed results of prior research, we are hesitant to determine the direction of the signal with the cost of capital. Yet, we can safely expect that the choice to use revaluation model to report property, plant and equipment has an impact on the cost of capital and investors are responding to this accounting method choice by changing the demand on the rate of return on their investment. This leads us to develop following hypothesis:

H2: The accounting choice (historical cost vs. fair market value) to report property, plant, and equipment has a significant impact on the cost of capital.

In the following section (section 5), we discuss the detailed description for our samples. In section 6, we provide empirical analysis and report our findings.

Sample

Sample of Cross-listed Firms

The objectives of our empirical tests are to assess if the adopters of revaluation model show different economic characteristics from non-adopters and if the choice of accounting method of an IFRS firm to revalue property, plant and equipment affect a firm's cost of capital. Based on prior studies, we propose that adopters possess some distinguishing characteristics from non-adopters. Also, we suggest that theoretically there should be a relationship between fair market value information reflected in annual reports and stock prices and returns, as PPE valuation at market (versus cost) should provide more accurate information to the market and help to reduce the risk associated with measurement.

Our research was motivated by calls for theoretical framework on why firms revalue and report fixed assets by market prices. While IFRSs provide the fair value option for PPE, this option is yet to become available to companies in the U.S. In this study, we use foreign listed firms in the U.S. markets that report their PPE at fair market value to test our theoretical framework developed in last section.

Using the list of foreign registrants in 2006 on SEC website (December 2007), we identified 1145 non-U.S. incorporated firms that trade in the U.S. on the AMEX, CAP MKT, GLOBAL MKT, NYSE or OTC. Our sample of non-U.S. cross-listed firms include both December and non-December year-end firms. Using Compustat database, we identified accounting standards used by each firm in 2006. Table 1 (Panel A) shows the distribution of accounting standard choice by the cross-listed firms. A total of 674 firms are required to file 20-F reconciliation form prior to November 15, 2007. Out of 674 firms, 96 firms used IFRS and 578 firms used National GAAP for reporting. We then inspected all 20-Fs for remaining 674 companies to find out if they used fair market value for PPE measurement. As reported in Table 1 (Panel B), we classified all 674 firms' method of measurement and reporting of PPE into the following two classifications:

- Those who used historical cost basis for measurement and reporting
- Those who use fair-market value basis at least one class of the property, plant and equipment for measurement and reporting

We find a total of 44 companies that use revaluation model to report at least one class of property, plant and equipment. Majority of the adopters of PPE revaluation model (75%) are reporting using IFRS. Table 1 (Panel C) reports these details. Details of the countries of incorporation and industries of our sample firms are provided in Appendix. We also identified the type of PPE revaluations used by these 44 firms. One firm used disclosure of the fair market value of its long-lived assets, i.e., the firm reports PPE at cost and provides market value of assets in the footnotes. As Table 1 (Panel D) summarizes, twenty (22) firms used one off-revaluation of its long-lived assets in transition to IFRS either in January 4, 2005 (as required by EU countries) or earlier.⁹ Sixteen (16) firms used revaluation model to record their property only, but not plant and equipment.

Insert Table 1 about here

Information such as company's fiscal year end, the value of total asset, book value per share, long term debt, the value of total PPE, common outstanding share, market value, closing stock price and SIC code was collected from Compustat. All the independent variables are averaged over the sample period (2005-2007). Thus, every sample firm has only one observation. Table 2 (Panel A) provides summary statistics of our sample. Our sample firms are from a total of 24 different industries (see Table 2 Panel B) including commercial banks (14%), telecommunication services (11%), electric services (11%) and air transportation (9%). The database used for cost of capital comparison was further reduced as we had to eliminate inactive companies (2 firms), companies traded only on OTC-Debt market (2 firms), and those with insufficient data and without matching sample (13 firms). This resulted to our final sample of 27 cross-listed companies that were used for cost of capital comparison. Table 2 (Panel C) reports how we end up with a total of 27 firms in our sample.

Insert Table 2 about here

⁹ Under IFRS 1 First-Time Adopters of IFRS, in transition to IFRS from some other set of standards, laws, etc., firms are allowed, but are not required, to use⁹ fair value at transition date as the deemed IFRS cost of property, plant and equipment.⁹ This special consideration was introduced primarily to help these entities that may not have previously collected the necessary information to determine cost in accordance with IFRS (IFRS 1.BC41). The concession is, however, available to all entities and has been used by several who could have determined IFRS costs

Our sample firms include those firms that elect to report fair market value of PPE when they switch to IFRS from other GAAP, but not necessarily continue using revaluation model after the date of transition. A dummy variable is assigned to distinguish between the cost model and revaluation model. If our hypothesis is correct, we expect to find the negative association between the cost of capital and the dummy variable (accounting choice to report PPE).

Control Sample — Matching U.S. Firms

We were able to find the matching companies with identical (four-digits) SIC codes but not with exact market capitalization. We set a maximum upper and lower limit of 10% difference between the sample firm's market capitalization and matching company's market capitalization to find matching U.S. companies based on market capitalization criterion. As we expected, cross-listed firms are more international and diverse, of sample firms, we were unable to find similar size in the range we set as above (10% upper and lower limit). In those cases, we used a 20% range. Only 11 matching U.S. firms are in the 10% range of cross-listed firms in terms of market capitalization. Table 3 provides a summary statistics of matching U.S. firms.

Additional Control Variables

Since our second hypothesis H2 tests for the effect of the accounting choice (revaluation model versus historical cost model) on the firms' cost of capital, to avoid drawing erroneous inferences, we control for the effect of other determinants of the cost of capital.

In addition to the industry groups, previous research indicates that firm size, book-to-market ratio and leverage as significant determinants of the cost of capital (Kothari et al., 2009). Smaller firms may be considered more risky and investors may demand a higher rate of return from smaller firms. Since smaller firms have a lower level of analysts' following and fewer channels available to reduce information asymmetry, measurement and disclosure of PPE at market value may result in different impact on smaller firms' cost of capital (Barth and Clinch, 1998). As firm size may be an important factor in the cost of capital, we use firms' size as one of our proxies for control sample of

matching U.S. firms. We used the market capitalization of each firm as the size of the firm (number of shares outstanding times the share price, at the beginning of each year).

Another determinant of a firm's cost of capital is the book-to-market ratio as it is a measure of future performance or success of a firm. Kothari et al. (2009) suggest: "Successful firms with expectations of a steady stream of high levels of future cash flows are highly valued in the market, which drives their book-to-market ratio down. These are typically considered to be low-risk firms. In contrast, if the market has little confidence in a firm and thus perceives the cash flow stream to be uncertain and not too high, then the market capitalization of such a firm would be low. This drives up the book-to-market ratio, so high book-to-market ratio proxies for high-risk firms. Book-to-market ratio is calculated as a ratio of the book equity of a firm divided by its firm size, i.e., the market capitalization of equity" (Kothari et al., 2009, page 1653) Similar to Kothari et al., we used the ratio of "book equity of a firm divided by its market capitalization of equity" as a basis of book-to-market ratio.

The third determinant of the cost of capital is the risk associated with a firm, which may be measured by the ratio of long-term debt to the total assets of the firm (leverage). Obviously, investor should expect higher rate of return from riskier (high leveraged) firms. To find the matching companies, we only used market capitalization and the industry code (four digits of SIC code) to identify appropriate matching US companies. We included book-to-market ratio and leverage in our models to control for these variables (see results section for further explanation).

Insert Table 3 about here

Cost of Capital

To calculate the cost of capital we used multiple methods as is available in the literature. More specifically, we used methods suggested in Gebhardt, Lee, and Swaminathan (2001), Claus and Thomas (2001), Gode and Mohanram (2003) and Easton (2004).¹⁰ The average of the four models is used in our comparison table. Estimates of

¹⁰ Cost of capital data are provided by Dr. Devon Mescall and Dr. Partha Sengupta. We truly appreciate their kind assistance in our research.

Cost of capital below zeros are eliminated. Table 4 provides the cost of capital for the sample and matching companies.

Insert Table 4 about here

Data, Methodology and Empirical Results

Predicting Adoption of the Revaluation Model to Report Property, Plant and Equipment

This study suggested that the cross listed firms who adopted fair market valuation (hereafter the adopters) for PPE were fundamentally different from cross listed firms that were non-adopters. To test this proposition, we compared some selected variables in Compustat for both adopters and non-adopters. Table 5 provides descriptive statistics for cross-listed non-adopters (Panel A) and for cross-listed adopters (Panel B). As this study will also compare the cross-listed adopters to a matching U.S. sample, the table also provides descriptive statistics for the U.S. matching firms as well (Panel C).

Insert Table 5 about here

Table 6 provides the statistical comparison of the two groups with the assumptions of equal and unequal¹¹ variances. Based on these results, the mean of book-to-market ratios of adopters are closer to unity suggesting that book value is closer to market values for adopters. We expect that the market responds to variation in the book value by adjusting/revising the firms' market values; hence better alignment of market and book value. However, given that the variances (standard deviations) of book-to-market ratios are more dispersed for adopters that may indicate that revaluations may increase the degree of fluctuation in this ratio.

We find that adopters have significantly higher liabilities than non-adopters. Leverage (the ratio of long-term debt to total assets) is slightly higher for adopters than for non-adopters, but we also find that debt-to-equity ratio (the ratio of total liabilities to total shareholders' equity) of adopters are significantly higher than those of the non-adopters. This suggests that the total amount of liabilities, not just limited to the long-term debt portion, may be used by the creditors in evaluating a firm's ability to service new and/or existing loans. Easton et al. (1993) and Lin and Peasnell (2000), among

¹¹ Our analysis show that assumption of equal variances is incorrect as the variances between the two samples are different; as such although the results are consistent across both pooled and Satterthwaite, the later is more appropriate here. The data is limited to availability of annual fundamental data on Compustat (2005-2007).

others, suggest that the need to lower the debt-to-equity ratio (the ratio of liabilities to shareholders' equity) is one of the reasons for choice of asset revaluation.

As expected, adopters are statistically larger (both when total assets value, sales and market value are compared) than non-adopters. This finding is consistent with Lin and Peasnell (2000) assertion that the firm size affects the fair-market accounting choice. Given that the adopters are larger than non-adopters, the total amount of property, plant and equipment for adopters is significantly higher than non-adopters. We calculated the intensity of PPE (ratio of PPE to total assets) and while the comparison between the two groups shows that adopters have a larger ratio, the difference does not show statistical significance. Also, we find that all firms revalue their property whilst only 28 firms revalue all classes of their assets, including plant and equipment.

Return on assets is negative for non-adopters and return on equity is negative for adopters. Brown, Izan, and Loh (1992), Easton et al. (1993) also suggest that revaluations may help with return on assets. A comparison of return-on-assets for adopters and non-adopters also indicate that adopters (on average) have higher return-on-assets than non-adopters.

Revaluation of fixed assets is not an accepted practice in the U.S. and it is possible that firms that cross-list in the U.S market be less likely to revalue fixed assets as they may choose to follow a similar-to-U.S.-GAAP approach and report their PPE at cost (e.g., Missonier-Piera, 2007). We found that in the sample of cross-listed companies only 44 companies use revaluation model to report PPE. This is while 219 companies use U.S. GAAP and 630 companies that use either National GAAP or IFRS, report their PPE at cost. Furthermore, we find that 50% of the revaluers recorded fair value of property, plant and equipment under the 'deemed cost' option available in IFRS 1 First Time Adoption of International Financial Reporting Standards (IFRS) instead of on-going measurement (one off-revaluation in transition to IFRS).

Insert Table 6 about here

The previous results show that adopters have different characteristics from non-adopters. We ran Probit regression to determine if these variables can explain why some firms choose fair-value method while others do not. We included different explanatory

variables in our models (those with theoretical supports as reported previously). We find that Debt-to-equity ratio and PPE intensity have significant explanatory power in fair-value-choice. The direction of coefficient for these variables suggest that firms with higher debt-to-equity ratio and higher PPE density are more likely to choose fair-value choice to measure of their property, plant and equipment, as we anticipated in H1b and H1c, respectively.

Our Probit analysis findings provide evidence that those with higher return-on-assets and lower return on equity are more inclined to choose fair-market choice. As the revaluation of fixed assets lowers the return on assets ratio of revaluers, revaluers may have incentives to reduce their profitability ratios. These results support H1d (suggesting that revaluers have lower return on equity.) Table 9 provides the results of our Probit analysis while Table 8 provides results of our correlation coefficient analysis.

Insert Table 8 and Table 9 about here

Other interesting findings reported in Table 9 is that book-to-market ratio is not statistically significant in any of the models, even though we found that book-to-market ratios were significantly different in the two samples (adopters and non-adopters). Given the high correlation between book-to-market ratio and other variables (e.g., return-on-assets), it is possible that the effect of this variable on the choice of fair-value measurement is captured by other significant variables. Adopters are lower in market-to-book values than non-adopters, as is expected according to H1c, although probit analysis does not show statistically as significant results as mentioned above.

Another objective of this study is to find out if the cost of capital (COC hereafter) for those who use the fair-market valuation for PPE is lower than other and similar firms. We attempted to do this in two different ways: (1) comparing the foreign cross-listed firm's COC to a matching sample of foreign cross-listed firms' COC and (2) comparing the foreign cross-listed firm's COC to a matching sample of US firms' COC.

Unfortunately, we were not successful to find a matching foreign sample of firms listed in similar countries and industries. Furthermore, because of missing data we were not able to create a large enough sample of foreign firms for which we were able to determine the COC. Consequently, we limited our analysis to a matching sample of US

firms. We wanted to see if after controlling industry and firm size, the COC differences can be explained by the fair-value choice of PPE.

Intuitively, if asset revaluations reflect value changes that are also perceived by the market (and incorporated in estimating the cost of capital), the revaluation reserves (or variables that reflect a measure of revaluation amount) will have an impact on the COC. However, most of the companies in our samples of cross-listed firms are not periodic/frequent revaluers and we are unable to find data to test revaluation reserves affect the cost of capital. Consequently, we use those variables that may capture the effect of increased assets values, such as book-to-market ratio, debt-to-equity ratio, return on assets, and return on equity. Given the findings of prior research and our results that were reported earlier, we include debt-to-equity and leverage as other explanatory variables.

When we are unable to find complete data, we use available data to focus on the extent to which revaluations effects have been reflected in the market value of the firm. We believe that if revaluations reflect actual value of assets, the book and market value should be closer to one and hence, we include book-to-market ratio as one of the independent variables in the place of revaluation reserves. Easton et al. (1993) also choose earnings and book value variables which are intuitively most closely aligned with value changes and value respectively. As these variables are also driving investor's response to firms' choices as in stock prices, these variables will be also affecting the cost of capital, which is also market response to firms' choice of accounting method. Also, this study is not an event study, although we try to explain the most current COC with the most current data available.

Cost of capital is the dependent variable in our regression model and revaluation choice (a dummy variable) and other variables (reported below) that can affect revaluation decision are independent variables. Our data include cross-listed firms that use revaluation model for PPE measurement with the matching U.S. firms (matched by industry and firm size) which are only allowed to use only cost model to report long-lived assets. Our model will seek to explain cost of capital as reflected in the four models below:

Model 1:

$$\text{Cost of capital} = \alpha_0 + \alpha_1 ROE + \alpha_2 BMR + \alpha_3 GM + \text{Accounting Model}$$

Model 2:

$$\text{Cost of capital} = \alpha_0 + \alpha_1 ROA + \alpha_2 GM + \alpha_3 DTE + \text{Accounting Model}$$

Model 3:

$$\text{Cost of capital} = \alpha_0 + \alpha_1 ROE + \alpha_2 GM + \alpha_3 DTE + \text{Accounting Model}$$

Model 4:

$$\text{Cost of capital} = \alpha_0 + \alpha_1 ROE + \alpha_2 GM + \alpha_3 LEV + \text{Accounting Model}$$

where the cost of capital of firm *i* at time *t*, ROE is return on equity at time *t*, BMR is book to market ratio at time *t*, GM is gross margin at time *t*, ROA is return on assets at time *t*, LEV is leverage at time *t*. Intercept of α_0 will capture the common portion of cost of capital unexplained by ROA, ROE, BMR, DTE, LEV or GM.

Both studies of Easton, Edey, and Harris (1993) and Barth and Clinch (1998) used similar model (with and without intercept). However in the mentioned studies share prices were used as the dependent variable and as the measurement of reaction by the capital market. Also, both studies were able to use revaluation amount instead of revaluation decision as a dummy variable as in our study. In our studies, we are using cost of capital as a response of the capital market to the firms' revaluation decision.

In our model, we are unable to use revaluation reserve due to limited data availability. It is our expectation that by using returns-on-assets and return-on-equity, book to market ratio, leverage, and debt-to-equity we can control firms specific conditions on the COC. Furthermore, we use gross margin (GM) as a profitability measure to control the effect of profit margin on the COC.

Firm specific factors such as ROA, ROE or GM help with firm value measurement (Eisenberg et al., 1998). Theoretically, these profitability ratios (ROA, ROE or GM) should have a negative relationship with a firm's cost of capital. The higher these ratios, the higher future expected income and cash and lower the cost of capital. Debt-to-equity or leverage ratios measure the risk to the equity investors. The higher those ratios, the higher the risk and investors will demand a higher return on their investments. Hence, we intuitively expect a positive relationship between the cost of

capital and debt-to-equity ratio or leverage ratio. Book-to-market ratio measures performance of a firm by market-based valuation data (Eisenberg et al., 1998). The lower this ratio, the better firm's performance, and we expect a positive association between the cost of capital and book-to-market ratio.

The dummy variable for accounting method choice also represents another variable: the location of the firms; i.e., foreign versus local (U.S.) companies. Prior research has indicated that COC for foreign firms that are listed in the U.S. stock market is higher than the COC of those who are domiciled in the U.S. As such, it is possible that we will have a combination effect of both the location and the choice of fair-value method in one dummy variable. We are unable to resolve this conflict since we cannot create a matching sample of firms for foreign cross-listed companies. Any evidence of COC differentiation may be due to either information in asset revaluation or the location of the firms since U.S. investors require a higher return for their investment in foreign companies. In addition, the alignment of book and market values via the revaluation process may not occur in the same period as the asset actually changes value. Hence, the revaluation reserve increment will not necessarily have explanatory power for returns of the same period. As such the independent variables (and accounting model) will not necessarily explain the cost of capital of the same period.

Given above explanation, we are hesitant to predict the direction of the coefficients for some of the independent variables (e.g., accounting choice model). But if the choice of accounting model carries a significant effect on the cost of capital, we should see that the variable is statistically significant and distinguishable from zero. Table 4 provides information about the COC for our sample firms and their matching companies in the U.S. As the Table shows, our sample were reduced from 41 to only 27 foreign firms and 27 matching U.S. firms because of the either the lack of COC data and/or lack of an appropriate U.S. matching firm.

Table 4 (column 6) reveals that the average cost of capital of 15 out of 27 (approximately 56%) cross-listed firms is lower than that of matching U.S firms.¹² This

¹² To estimate cost of capital of a firm requires 2-3 years analysts' forecast data, and as some firms are not big enough to be followed by the analysts, we are unable to use cost of capital for 13 of the cross-listed firms. This limits our sample size and may have an impact on our regression results due to omitted data.

shows that majority of cross-listed firms enjoy slightly lower cost of capital presumably due to revaluation model they choose. There exist two opposing theories on the cost of capital for foreign listed companies in the U.S. market. One line of literature (e.g., Bradshaw, Bushee, and Miller, 2004) explains that cross-listed foreign firms in general have a higher cost of capital compared to domestic firms as the U.S. investors prefer to invest in more familiar firms (or firms that conform to investors' preferred accounting standards, in this case, the U.S.GAAP). The other line of literature (e.g., Easley and O'Hara, 2004; Botosan, 1997; Kothari, Li, and Short, 2009) explains that revaluation of fixed assets lowers the uncertainty the investors are facing in estimating the fair value of assets and consequently results in lower the cost of capital of cross-listed firms which have the option to use revaluation model to report PPE. Intuitively, the effects of these two factors on cost of capital have different magnitudes depending on the industry and firm size, among others.

Before we run the regression analysis, we note that 56% of the cross-listed firms have a lower cost of capital compared to the matching U.S. firms, and we suggest this lower cost of capital to be the affect of lower information asymmetry between the investors and the firms. To test whether the revaluation decision has an impact on the cost of capital we run regression models (1) to (4) stated above. The results are shown in Table 10.

Insert Table 10 about here

We run regression analysis to confirm our preliminary finding. However, the regression results consistently show that the choice of revaluation model increases the cost of capital. When we compare the differences in cost of capital between the cross-listed firms and matching U.S. firms, (see column 3 & 5 of Table 4) we note that the magnitude of lower cost of capital experienced by the cross-listed firms is significantly lower than that of the higher cost of capital that cross-listed firms experience. (The sum of negative magnitude is much lower than that of the positive magnitude of cost of capital.) We believe that the disparity in direction of magnitude is driving the regression models and provides somewhat contradictory result from our preliminary observation.

Moreover, our results are limited by omitted data and home-bias effect, and the magnitude of the impact of accounting choice on cost of capital is indistinguishable from that of the impact of home-bias on cost of capital at this level. Nevertheless, we suggest that the accounting choice has a significant influence on firms' cost of capital based on the available data and our current results.

The findings from the regression results tables reveal that consistently, the accounting model is significantly (and positively) associated with the cost of capital. This result does not agree with our initial expectation that revaluation model may provides information that could result in lower cost of capital for revaluing firms. As mentioned earlier, our results may have been distorted by omitted data and home country effects. The statistical results relative to accounting choice are contrary to those expected from H2.

Furthermore, our findings show that ROE is significantly and negatively associated with cost of capital in three models (1, 3, and 4). ROA is also negatively associated with the cost of capital but the degree of significance is at 6% confidence level (model 2). In model 2, debt-to-equity ratio is significantly and negatively associated with cost of capital. We do not observe such association in model 3, however. It is possible that since debt-to-equity ratio is highly correlated with ROE, the effect of debt-to-equity is not present in model 3. Leverage (Book-to-market ratio) does not show statistical significance in model (4) (model 1) regression. From our regression results, the directions of the coefficients are as expected for ROA, ROE and GM, but opposite from our prediction for debt-to-equity ratio, leverage and book-to-market ratio.

Summarizing our findings, we can validate the findings of previous studies that adopters of PPE revaluation model have fundamentally different economic characteristics from the non-adopters for cross-listed firms in the U.S. Results in our univariate and probit analyses support our proposition that revaluers shows different economic characteristics from non-revaluers as we suggested in H1. In general, bigger firms tend to revalue fixed assets more than smaller firms. Revaluers are less profitable than non-revaluers (ROA shows consistent statistical evidence compared to ROE, in both univariate and probit results). And similar findings for the UK and Australian firms,

revaluers of cross-listed firms in the U.S. report fair value of property, plant and equipment in order to reduce debt-to-equity ratios. Consistent to prior findings (e.g., Christensen and Nikolaev, 2008) cross-listed firms are unlikely to adopt revaluation model as managers tend to follow the preferred accounting standards of the U.S. investors. However, our research is limited to small sample of firms that adopted revaluation model to report PPE.

We found conflicting results for the test of cost of capital. We attribute this to two different theories: reduction in information asymmetry theory suggest that measurement and report of the PPE at market lowers cost of capital; on the other hand previous literature suggest that foreign firms listed in the U.S. have relatively higher cost of capital as they may be perceived more risky. Consequently, we may attribute the lower cost of capital for the 56% of foreign firms to lower information asymmetry. But, we are unable to determine and differentiate the extent of the effect on cost of capital by home-bias or accounting choice. If investors are utilizing the estimates of assets the fair value of which are not readily available in the market to allocate capital, the U.S. standard setters should provide the U.S. firms the option of fair value measurement and reporting for PPE.

Summary and Conclusion

This study addresses the very timely topic; fair market valuation of non-financial assets. With the elimination of *Accounting Reconciliation Rules for Foreign Firms* for the subset of cross-listed IFRS firms in the U.S. market, cross-listed IFRS firms are given the choice to report the property, plant, and equipment at cost or fair market value, whilst U.S. firms are prohibited to report the same assets at fair market value.

Our research paper focuses on two different areas. We first present evidence that the adopters of PPE revaluation model have fundamentally different economic characteristics from non-adopters, among foreign firms listed in the U.S. Stock Exchange. We use the entire set of the users of IFRS or National GAAP whose data are available on Compustat. We use 755 companies to test our first group of hypotheses. The revaluation model is not popular among the cross-listed firms as only 44 out of 674 firms (whose accounting standards allow them to use PPE revaluation model) in fact choose to report their assets at fair value. And 219 companies use U.S. GAAP and report their PPE at cost. Revaluation of fixed assets is not an accepted practice in the U.S. and it is possible that cross-listed firms choose to conform to the U.S.-GAAP and report their PPE at cost, so that their accounting numbers are comparable to U.S. firms' (their competitors'). This finding suggests that cross-listed firms prefer to report their PPE at cost, which is more understandable (and probably more acceptable) accounting standards for the U.S. investors. A closer review of 10Ks reveals that 16 (out of 44 adopter) firms revalue only property whilst 28 firms revalue all classes of their assets.

We compare and test (for difference) between adopters and non-adopters some fundamental ratios such as book-to-market and leverage ratios, the intensity of PPE, firm size in terms of sales, market value and total assets and profitability ratios. We find that adopters (revaluers) show a better alignment of book and market value. Our Probit analysis, further, shows that the higher its debt-to-equity ratio is, the more likely a firm is to adopt the PPE revaluation model, so adopters have higher debt-to-equity ratios than non-adopters. Hence, we suggest that the intent of revaluation of the PPE by the adopters maybe to reduce their debt-to-equity ratios. As expected, adopters are larger in size than non-adopters. Logically, larger firms have a higher value of the PPE, and firms with

higher ratio of total amount of the property, plant and equipment to the total assets are more likely to revalue their long-term assets.

Our Probit results shows that firms with higher return on assets ratios tend to revalue their assets. Given that, by revaluing the PPE, the adopters are able to lower their profitability ratio, we suggest that some political reasons (such as labor contractual negotiations, political exposure) could be the incentives for larger firms' decision to reduce their profitability ratios.

The second phase of our research examines if the adopters of the PPE revaluation model are rewarded (or penalized) with a lower cost of equity (a higher cost of equity) since revaluation of the PPE presumably lowers the information asymmetry and reduces estimation risks borne by the U.S. investors. In order to answer this research question, we use the entire sample of cross-listed adopters (44 firms in total) and build included a matching sample of U.S. firms by industry and size, who are prohibited to use PPE revaluation model.

It is noteworthy that instead of revaluating PPE on an annual basis, 22 firms out of 44 adopters record fair value of property, plant and equipment under the 'deemed cost' option available in IFRS 1 First Time Adoption of International Financial Reporting Standards (IFRS). This may significantly reduce statistical power to answer questions in our second research phase. Also, due to data availability, our regression analysis data loses 17 observations and includes only 27 cross-listed firms; matched with 25 U.S. firms (one observation for each firm). We use cost of equity capital as our dependent variable and propose that measurement of PPE at fair value reduces measurement risk and should reduce the cost of equity. In addition to using a dummy variable that represents accounting option (historical cost vs. fair market value) to report the PPE, other explanatory variables that may capture the effect of increased assets values, such as book-to-market ratio, debt-to-equity ratio, return on assets, gross margin and return on equity, are used.

Our results consistently show that the accounting model is significantly (and positively) associated with the cost of capital. This result does not agree with our expectation that revaluation model may provide information that could result in lower

cost of capital for revaluing firms. This suggests that cross-listed firms are penalized with a higher cost of capital when they do not conform to accounting choice that is similar to U.S. GAAP. However, we caution on this interpretation for two reasons. First, these results may have been distorted by omitted data and biased sample. Furthermore, the dummy variable for accounting method choice also represents another variable: the location of the firms; i.e., foreign versus local (U.S.) companies. Prior research has indicated that cost of capital for foreign firms that are listed in the U.S. stock market is higher than the cost of capital for those who are domiciled in the U.S. As such, we have a combination effect of both the location and the choice of fair-value method in one dummy variable. We are unable to resolve this conflict since due to limited data availability, we cannot create a matching sample of firms for foreign cross-listed companies.

A new study can resolve this problem by creating a new approach to measure the cost of capital for both locally listed and foreign listed companies in the U.S. In this study, we focus only on the equity cost of capital. Future research can extend to measure debt portion of the cost of capital as our results suggest that debt-to-equity ratio is a significant determinant in choosing the revaluation model for adopters. In addition, we could study other characteristics of firms, such as composition of debt, composition of shareholders, growth opportunities, among others, which may influence firms in choosing revaluation model.

In summary, decision made by SEC in November 2007 changes the comparability of financial statements in the U.S. stock exchange. IFRS foreign firms are allowed to report PPE at fair value whilst domestic U.S. firms are prohibited from using this option under U.S. GAAP. Hence, at least for the sample of firms included in this study, investors are comparing two sets of assets valuation models to make capital allocation decision.

Table 1. Summary Data of Cross-listed Firms in the U.S.

Panel A: The Number of Cross-listed Firms Breakdown by Accounting Standards

Samples	#	%
Cross-listed companies which use IFRS for reporting (Compustat Dec 2006)	96	8%
Cross-listed companies which use National GAAP for reporting	578	50%
Cross-listed companies which use US-GAAP for reporting	219	19%
Unable to identify due to absence of GVKEY	252	22%
Total Cross-listed companies (SEC EDGAR database)	1145	100%

Panel B: The Number of Cross-listed Firms Breakdown by Accounting Model

	#	%
Historical Cost Model to report PPE	630	93%
Revaluation Model to report PPE	44	7%
Total firms which use either IFRS or National GAAP	674	100%

Panel C: Accounting Standards Used by Revaluers (Compustat Dec. 2007)

Accounting Standard	#	%
IFRS	33	75%
National GAAP	9	20%
Inactive	2	5%
Total	44	100%

Panel D: Revaluation Model Reported for Different Classes of PPE

Accounting Model	All classes	Property only	Total
Disclosure	0	1	1
Revaluation Model	12	7	19
One-off revaluation in transition to IFRS	16	6	22
Inactive	-	2	2
Total	28	16	44

Table 2. Summary of Cross-listed Revaluers

Panel A: Descriptive Statistics

	Market Capitalization*	Book-to- Market Ratio	Leverage	Total Assets*
Mean	42,346.09	0.73	0.21	226,633.15
Maximum	239,966.11	8.63	0.62	2,271,065.61
Minimum	60.36	0.01	0.00	22.75
Standard deviation	61,949.37	1.43	0.15	584,488.83
Median	18,993.90	0.45	0.18	22,653.38

*\$ (in million)

Table 2. (Continued) Summary of Cross-listed Revaluers**Panel B: Industry Breakdown**

SIC	Industry Sector	Number of firms	%
1000	Metal Mining	1	2%
2060	Sugar & Confectionery Products	1	2%
2510	Household Furniture	1	2%
2800	Chemical & Allied Products	1	2%
2911	Petroleum Refining	2	5%
3241	Cement, Hydraulic	1	2%
3510	Engines & Turbines	1	2%
3751	Motorcycles, Bicycles & Parts	1	2%
3829	Measuring & Controlling Devices, NEC	1	2%
4512	Air Transportation, Scheduled	4	9%
4812	Radiotelephone Communications	3	7%
4813	Telephone Communications (No Radiotelephone)	5	11%
4841	Cable & Other Pay Television Services	1	2%
4899	Communications Services, NEC	1	2%
4911	Electric Services	5	11%
4941	Water Supply	1	2%
5110	Wholesale- Paper & Paper Products	1	2%
5944	Retail - Jewelry Stores	1	2%
6021	National Commercial Banks	6	14%
6029	Commercial Banks, NEC	2	5%
6159	Miscellaneous Business Credit Institution	1	2%
6331	Fire, Marine & Casualty Insurance	1	2%
7011	Hotels & Motels	1	2%
7311	Services - Advertising Agencies	1	2%
Total		44	100%

Table 2. (Continued) Summary of Cross-listed Revaluers

Panel C: The Number of Firms Remained in Our Samples to Compare Cost of Capital

Cross-listed companies which use revaluation model to report PPE	44
Less: Eliminated Inactive companies	(2)
Less: Eliminated Cross-listed companies traded on OTC-Debt market	(2)
Less: Eliminated due to data availability (cannot match)	(1)
Less: Cost of capital data not available	(12)
Total cross-listed companies we use and compare cost of capital	27

Table 3. Summary Statistics of Matching U.S. Firms

	Market Capitalization*	Book-to- Market Ratio	Leverage	Total Assets*
Mean	33,600.34	0.45	0.24	92,850.36
Maximum	201,904.47	0.96	0.64	1,489,095.33
Minimum	49.41	(0.12)	0.00	18.26
Standard deviation	48,613.53	0.26	0.16	254,866.54
Median	12,114.02	0.44	0.22	19,489.33

*\$ (in million)

Table 4. Cost of Capital of Cross-listed Revaluers and Matching U.S. Firms

Industry	Revaluers	Cost of Capital	Matching US firms	Cost of Capital	Remark
Services - Advertising Agencies	Publicis	0.09364	Interpublic	0.03403	Higher
Water Supply	CIA	0.05982	Aqua	0.02282	Higher
Retail - Jewelry Stores	Signet	0.11367	Tiffany	0.03219	Higher
National Commercial Banks	Bank of Ireland	0.03158	Fifth Third Bancorp	0.04441	Lower
Metal Mining	BHP Billiton	0.06363	Freeport-McMoran	0.0901	Lower
Hotels & Motels	Intercontinental	0.10794	Starwood Hotels	0.04735	Higher
National Commercial Banks	Barclays	0.06322	U S Bancorp	0.06952	Lower
National Commercial Banks	HSBC	0.05262	Bank of America	0.0677	Lower
National Commercial Banks	BBVA	0.08056	Old National Bancorp	0.05113	Higher
Wholesale- Paper & Paper Products	Bunzl	0.07507	Office Max	0.09661	Lower
Electric Services	Enersis	0.13824	Ameren	0.04152	Higher
Electric Services	EDP	0.08585	Entergy Corp	0.12216	Lower
Electric Services	National Grid	0.04318	Exelson	0.05433	Lower
Household Furniture	Natuzzi	0.08594	Hooker Furniture	0.06483	Higher
Chemical & Allied Products	Sinopec	0.22879	FMC	0.03256	Higher
Petroleum Refining	Petrochina	0.04904	Chevron	0.0561	Lower
Petroleum Refining	China Petroleum	0.07489	Conocophillips	0.08023	Lower
Air Transportation, Scheduled	China Eastern	0.11804	Continental	0.13892	Lower
Air Transportation, Scheduled	China Southern	0.07117	UAL Corp	0.13637	Lower
Radiotelephone Communications	China Unicom	0.04614	NII holding	0.05965	Lower
Radiotelephone Communications	China Mobile	0.0919	Sprint Nextel Corp	0.09945	Lower
Telephone Communications (No Radiotelephone)	China Telecom	0.05962	Verizon Inc	0.03866	Higher
Telephone Communications (No Radiotelephone)	Telecom Italia	0.06041	Verizon Inc	0.03866	Higher

Table 4. (Continued) Cost of Capital of Cross-listed Revaluers and Matching U.S. Firms

Industry	Revaluers	Cost of Capital	Matching US firms	Cost of Capital	Comment
Telephone Communications (No Radiotelephone)	KKPNY	0.06847	Qwest	0.09422	lower
Telephone Communications (No Radiotelephone)	Portugal	0.06614	Qwest	0.09422	lower
Cement, Hydraulic	CRH	0.08169	Texas Industries	0.10141	lower
Sugar & Confectionery Products	Cadbury	0.06153	Hershey	0.03982	higher

Table 5. Descriptive Statistics For Cross-listed Firms**Panel A: For Non-adopters of Revaluation (Fair Value) Model**

Variable	N	Mean	Std Dev	Min	Max	DF	t-Value	Pr > t
Sales*	715	8570.5	25770	0	327119	714	8.89	<.0001
Market value*	717	11182	26275	0.1883	229968	716	11.4	<.0001
Debt to Equity	716	1.7693	15.134	-366.5	72.913	715	3.13	0.0018
Book to Market ratio	706	0.4396	0.7222	-14.38	5.1227	705	16.17	<.0001
Return on Equity	715	0.0773	2.866	-8.752	73.019	714	0.72	0.4712
Return on assets	714	-0.088	0.6069	-8.93	0.4874	713	-3.87	0.0001
Gross margin	652	-0.482	9.0135	-163	2.1966	651	-1.36	0.173

Panel B: For Adopters of Revaluation (Fair Value) Model

Variable	N	Mean	Std Dev	Min	Max	DF	t-Value	Pr > t
Sales*	40	22845	31650	1.7887	134817	39	4.56	<.0001
Market value*	39	36925	58725	59.972	239966	38	3.93	0.0004
Debt to Equity	40	7.8755	13.556	0.3976	66.41	39	3.67	0.0007
Book to Market ratio	38	1:02	3.4997	0.0209	21.965	37	1.84	0.0741
Return on Equity	40	-0.048	1.3987	-8.611	0.6646	39	-0.22	0.8277
Return on assets	40	0.0323	0.1212	-0.638	0.2008	39	1.69	0.0995
Gross margin	40	0.2786	0.6825	-3.731	0.9706	39	2.58	0.0137
Leverage	40	0.2233	0.1756	0.0041	0.878	39	8.05	<.0001

Panel C: For Matching U.S. Firms

Variable	N	Mean	Std Dev	Min	Max	DF	t-Value	Pr > t
Cost of Capital	25	0.0644	0.0305	0.0228	0.1364	24	10.55	<.0001
Sales*	25	29551	53404	345.9	201302	24	2.77	0.0107
Market value*	25	34348	53846	181.79	201904	24	3.19	0.0039
Debt to Equity	25	2.3696	5.46	-16.92	11.589	24	2.17	0.0401
Book to Market ratio	25	0.3208	0.5865	-2.281	0.8556	24	2.74	0.0115
Return on Equity	25	0.0925	0.2084	-0.666	0.5513	24	2.22	0.0363
Return on assets	25	0.041	0.0459	-0.1	0.1226	24	4.47	0.0002
Gross margin	25	0.3997	0.1879	0.0549	0.6874	24	10.64	<.0001
Leverage	25	0.238	0.1399	0.0501	0.6408	24	8.51	<.0001

*\$(in million)

Table 6. Comparison of Non-adopters of Revaluation Model and Adopters of Revaluation Model (All Cross-listed Firms)

Variable	Accounting					t- Value	Pr > t
	Model	N	Mean	Method	DF		
Sales*	Cost	715	8570.5	Pooled	753	-3.37	0.0008
	Revaluation	40	22845	Satterthwaite	41.9	-2.8	0.0077
Market value*	Cost	717	11182	Pooled	754	-5.44	<.0001
	Revaluation	39	36925	Satterthwaite	38.8	-2.72	0.0096
Debt to Equity	Cost	716	1.7693	Pooled	754	-2.5	0.0128
	Revaluation	40	7.8755	Satterthwaite	44.6	-2.75	0.0085
Book to Market ratio	Cost	706	0.4396	Pooled	742	-3.45	0.0006
	Revaluation	38	1.0434	Satterthwaite	37.2	-1.06	0.295
Return on Equity	Cost	715	0.0773	Pooled	753	0.28	0.783
	Revaluation	40	-0.048	Satterthwaite	59.3	0.51	0.6108
Return on assets	Cost	714	-0.088	Pooled	752	-1.25	0.2112
	Revaluation	40	0.0323	Satterthwaite	203	-4.05	<.0001
Gross margin	Cost	652	-0.482	Pooled	690	-0.53	0.5942
	Revaluation	40	0.2786	Satterthwaite	679	-2.06	0.0398
Leverage	Cost	715	0.1482	Pooled	753	-2.49	0.013
	Revaluation	40	0.2233	Satterthwaite	44.1	-2.62	0.0119
PPE intensity	Cost	712	0.3254	Pooled	750	-1.07	0.2861
	Revaluation	40	.3736	Satterthwaite	42.7	-0.98	0.3311

*\$ (in million)

Table 7. Variable Definitions

Variable	Measured as	Represented by
PPEintensity	$\frac{\text{Net Total of Property, plant and equipment}}{\text{Total Assets}}$	PPEint
Debt-to-equity	$\frac{\text{Total Liabilities}}{\text{Total Shareholders' Equity}}$	DTE
Book to market ratio	$\frac{\text{Book value per share x Common Shares Outstanding}}{\text{Total Market Value}}$	BMR
Return on equity	$\frac{\text{Net Income}}{\text{Total Shareholders' Equity}}$	ROE
Return on assets	$\frac{\text{Net Income}}{\text{Total Assets}}$	ROA
Gross Margin	$\frac{\text{Total Sales - Cost of Goods Sold}}{\text{Total Sales}}$	GM
Leverage	$\frac{\text{Long-term Debt}}{\text{Assets- Total}}$	LEV

Table 8. Correlation Results of Adopters and Non-adopters Dataset

	DTE	BMR	ROE	ROA	GM	PPEint
DTE	1	0.05044	-0.8249	0.03639	0.00506	-0.05177
		0.1693	<.0001	0.3183	0.8944	0.1561
	756	744	755	754	692	752
BMR		1	-	0.07318	0.03087	0.01876
			0.01294	0.0463	0.4215	0.6104
		744	743	742	680	740
ROE			1	0.00795	0.09803	-0.02434
				0.8275	0.0099	0.5054
			755	754	692	751
ROA				1	0.33322	0.08755
					<.0001	0.0164
				754	692	751
GM					1	0.02495
						0.5133
					692	689
PPEint						1
						752

Table 9. Analysis of Maximum Likelihood Estimates

Dependent Variable: Adopters = 1, Non-adopters=0;

Parameter	Model (1) Estimates	Model (2) Estimates	Model (3) Estimates	Model (4) Estimates	Model (5) Estimates
Intercept	1.959 (<.0001)	2.0361 (<.0001)	2.058 (<.0001)	2.1006 (<.0001)	2.0712 (<.0001)
PPEintensity	-0.5934 (0.0344)	-0.6307 (0.026)	-0.6639 (0.0203)	-0.6276 (0.0339)	-0.6702 (0.0249)
Debt to equity	-0.0341 (<.0001)	-0.0307 (0.0005)	-0.0328 (0.0003)	-0.0375 (0.0002)	-0.0361 (0.0003)
Book to Market Ratio		-0.1207 (0.1095)	-0.1199 (0.1126)	-0.1235 (0.1367)	-0.1164 (0.1298)
Return on Equity			0.0607 (0.3942)	0.3079 (0.0167)	0.2741 (0.0299)
Return on Assets				-2.5817 (0.0064)	-2.172 (0.027)
Gross Margin					0.00138 (0.9603)

Note: Observations were deleted due to missing values for the response or explanatory variables.

This table presents the marginal effects from a logistic regression explaining the decision to adopt PPE revaluation model. We regress a PPE revaluation dummy variable indicating adoption of PPE revaluation on a set of explanatory variables capturing various dimensions of firm characteristics, variables thought to explain the adoption decision, and measures of capital market pressure. All variables are defined in Table 7. The analysis is restricted to data availability on Compustat. The table displays the marginal effects for changes in the explanatory variables on the probability of adopting PPE revaluation model, evaluated at the means of the variables. P-values, based on heteroskedasticity-robust standard errors, are in parentheses.

Table 10. Summary of Regression Results

Panel A: Descriptive Statistics

Variable	N	Mean	Std. Dev	Minimum	Maximum
ROE	52	0.13513	0.1906	-0.66626	0.66464
BMR	52	0.40667	0.4671	-2.28067	1.62811
ROA	52	0.04743	0.04931	-0.10031	0.20078
GM	52	0.39221	0.18174	0.05492	0.81658
DTE2	52	4.3551	8.73309	-16.92291	50.60152
LEV	52	0.22478	0.14011	0.00409	0.6408
Accounting Model*	52	* <i>Cost model = 0; Revaluation Model = 1</i>			

Table 10. (Continued) Summary of Regression Results

Panel B: Pearson Correlation Coefficients

Prob > |r| under H0: Rho=0 in Gray Cells

Number of Observations = 52

	ROE	BMR	ROA	GM	DTE	LEV	Accounting Model
ROE	1	0.02294	0.52880	-0.00519	0.27250	-0.17152	0.21753
		0.8718	<.0001	0.9708	0.0507	0.2241	0.1214
BMR		1	-0.20830	0.15669	0.13557	-0.24061	0.17857
			0.1384	0.2673	0.3379	0.0858	0.2053
ROA			1	-0.09848	-0.28488	-0.12699	0.12613
				0.4873	0.0407	0.3697	0.3729
GM				1	0.20234	-0.17825	-0.04028
					0.1503	0.2061	0.7768
DTE					1	-0.20158	0.22090
						0.1519	0.1155
LEV						1	-0.09174
							0.5177
Accounting Model							1

Note: This table provides correlation coefficients among firms' specific variables. The upper cells show Pearson correlation coefficient. The numbers in gray cells are p-values.

Table 10. (Continued) Summary of Regression Results

Panel C: Results of Regression Analysis in four different models

Model 1:

Cost of capital = $\alpha_0 + \alpha_1 ROE + \alpha_2 BMR + \alpha_3 GM + \text{Accounting Model}$

Independent Variables	DF	Coef.	Std. error	T-stat	Pr > t	F Value	Pr > F
Intercept	1	0.09949	0.01155	8.62	<.0001	5.33	0.0013
Return on Equity (<i>ROE</i>)	1	-0.06712	0.02306	-2.91	0.0055		
Book-to-market ratio (<i>BMR</i>)	1	-0.00758	0.00947	-0.8	0.4277		
Gross Margin (<i>GM</i>)	1	-0.0662	0.02396	-2.76	0.0081		
Accounting Model *	1	0.02189	0.00887	2.47	0.0173		

* *Cost model = 0; Revaluation Model = 1*

Number of observations read	52
Number of observations used	52
R-square	31.19%
Adj R-squared	25.33%

Model 2:

Cost of capital = $\alpha_0 + \alpha_1 ROA + \alpha_2 GM + \alpha_3 DTE + \text{Accounting Model}$

Independent Variables	DF	Coef.	Std. error	T-stat	Pr > t	F Value	Pr > F
Intercept	1	0.10468	0.01234	8.48	<.0001	5.39	0.0012
Return on Assets (<i>ROA</i>)	1	-0.17292	0.0906	-1.91	0.0624		
Gross Margin (<i>GM</i>)	1	-0.07783	0.02376	-3.28	0.0020		
Debt-to-equity (<i>DTE</i>)	1	-0.00573	0.00208	-2.76	0.0082		
Accounting Model *	1	0.02384	0.00897	2.66	0.0107		

* *Cost model = 0; Revaluation Model = 1*

Number of observations read	52
Number of observations used	52
R-square	31.47%
Adj R-squared	25.63%

Table 10. Panel C: (Continued)

Model 3:

Cost of capital = $\alpha_0 + \alpha_1 ROE + \alpha_2 GM + \alpha_3 DTE + \text{Accounting Model}$

Independent Variables	DF	Coef.	Std. error	T-stat	Pr > t	F Value	Pr > F
Intercept	1	0.09864	0.01138	8.67	<.0001	5.55	0.001
Return on Equity (<i>ROE</i>)	1	-0.05279	0.02611	-2.02	0.0489		
Gross Margin (<i>GM</i>)	1	-0.07115	0.02353	-3.02	0.0040		
Debt-to-equity (<i>DTE</i>)	1	-0.00256	0.00228	-1.12	0.2684		
Accounting Model *	1	0.0224	0.00882	2.54	0.0144		

* *Cost model = 0; Revaluation Model = 1*

Number of observations read	52
Number of observations used	52
R-square	32.06%
Adj R-squared	26.28%

Model 4:

Cost of capital = $\alpha_0 + \alpha_1 ROE + \alpha_2 GM + \alpha_3 LEV + \text{Accounting Model}$

Independent Variables	DF	Coef.	Std. error	T-stat	Pr > t	F Value	Pr > F
Intercept	1	0.11043	0.01483	7.45	<.0001	5.67	0.0008
Return on Equity (<i>ROE</i>)	1	-0.07143	0.02312	-3.09	0.0034		
Gross Margin (<i>GM</i>)	1	-0.07497	0.0238	-3.15	0.0028		
Leverage (<i>LEV</i>)	1	-0.03978	0.03135	-1.27	0.2108		
Accounting Model *	1	0.01985	0.00865	2.29	0.0262		

* *Cost model = 0; Revaluation Model = 1*

Number of observations read	52
Number of observations used	52
R-square	32.56%
Adj R-squared	26.82%

Appendix

Details of the entire sample of Cross-listed firms who use PPE revaluation for at least one category of fixed assets

Company Name	Country	Market	CIK	SIC	GVKEY	Excerpts from Financial Statements
BHP Billiton Ltd.	Australia	NYSE	811809	1000	013312	Property, plant and equipment is recorded at cost less accumulated depreciation and impairment charges. Some assets acquired prior to 1 July 1998 are measured at deemed cost, being the revalued amount of the asset immediately prior to that date. Subsequent to 1 July 1998, the cost regime was applied to all assets. Cost is the fair value of consideration given to acquire the asset at the time of its acquisition or construction and includes the direct cost of bringing the asset to the location and condition necessary for operation and the direct cost of dismantling and removing the asset.
Cadbury Schweppes plc	United Kingdom	NYSE	744473	2060	002597	Assets are recorded in the balance sheet at cost less accumulated depreciation and any accumulated impairment losses. Under UK GAAP, certain assets were revalued in 1995 and the depreciated revalued amount has been treated as deemed cost on transition to IFRS.
Natuzzi S.p.A.	Italy	NYSE	900391	2510	028262	Property, plant and equipment is stated at historical cost, except for certain buildings which were revalued in 1983, 1991 and 2000 according to Italian revaluation laws

Appendix: (Continued) Details of the entire sample of Cross-listed firms who use PPE revaluation for at least one category of fixed assets

Company Name	Country	Market	CIK	SIC	GVKEY	Excerpts from Financial Statements
Sinopec Shanghai Petrochemical Co. Ltd.	China	NYSE	908732	2800	028653	Property, plant and equipment are stated in the balance sheet at cost or valuation (see Note 16) less accumulated depreciation and impairment losses. Note 16: In accordance with IAS 16, subsequent to this revaluation, which was based on depreciated replacement costs, property, plant and equipment are carried at revalued amount, being the fair value at the date of the revaluation less any subsequent accumulated depreciation and impairment losses. Revaluation is performed periodically to ensure that the carrying amount does not differ materially from that which would be determined using fair value at the balance sheet date. Based on a revaluation performed as of February 5, 2005, which was based on depreciated replacement costs, the carrying value of property, plant and equipment did not differ materially from their fair value.

Appendix: (Continued) Details of the entire sample of Cross-listed firms who use PPE revaluation for at least one category of fixed assets

Company Name	Country	Market	CIK	SIC	GVKEY	Excerpts from Financial Statements
China Petroleum & Chemical Corp. (Sinopec)	China	NYSE	1123658	2911	140756	An item of property, plant and equipment is initially recorded at cost, less accumulated depreciation and impairment losses (Note 2(1)). The cost of an asset comprises its purchase price, any directly attributable costs of bringing the asset to working condition and location for its intended use. Subsequent to the revaluation (Note 15), which was based on depreciated replacement costs, property, plant and equipment are carried at revalued amount, being the fair value at the date of the revaluation less any subsequent accumulated depreciation and impairment losses. Revaluations are performed periodically to ensure that the carrying amount does not differ materially from that which would be determined using fair value at the balance sheet date.
PetroChina Co. Ltd.	China	NYSE	1108329	2911	133870	Subsequent to their initial recognition, property, plant and equipment are carried at revalued amounts. Revaluations are performed by independent qualified valuers periodically.

Appendix: (Continued) Details of the entire sample of Cross-listed firms who use PPE revaluation for at least one category of fixed assets

Company Name	Country	Market	CIK	SIC	GVKEY	Excerpts from Financial Statements
CRH plc	Ireland	NYSE	849395	3241	015444	Certain items of property, plant and equipment that had been revalued to fair value prior to the date of transition to IFRS (January 1, 2004) are measured on the basis of deemed cost, being the revalued amount as at the date the revaluation was performed.
Orbital Corp Ltd.	Australia	OTC	880419	3510	019731	Items of property, plant and equipment are stated at cost or deemed cost less accumulated depreciation and impairment losses
Ducati Motor Holdings S.p.A.	Italy	NYSE	1080063	3751	228598	Only building at deemed cost. The consolidated financial statements as of December 31, 2005 and 2004 have been prepared on an historical cost basis, except with regard to the following assets and liabilities: derivative financial instruments stated at their fair value as of December 31, 2005, buildings valued at deemed cost and other financial assets and equity investments stated at their fair value.
Metal Storm Ltd.	Australia	CAP MKT	1119775	3829	244818	with the exception of paintings, which are carried at fair value
Air France-KLM	France	NYSE	1110452	4512	101475	In accordance with IFRS 1, the Group has elected to value certain of its aircraft at the date of transition to IFRS (April 1, 2004) at their fair value and to use this fair value as deemed cost.

Appendix: (Continued) Details of the entire sample of Cross-listed firms who use PPE revaluation for at least one category of fixed assets

Company Name	Country	Market	CIK	SIC	GVKEY	Excerpts from Financial Statements
China Eastern Airlines Corp. Ltd.	China	NYSE	1030475	4512	064336	Subsequent to initial recognition, property, plant and equipment is stated at revalued amount less accumulated depreciation and accumulated impairment losses, if any. Independent valuations are performed at least once every five years, or sooner if considered necessary by the Directors. In the intervening years, the Directors review the carrying values of property, plant and equipment and adjustment is made where they are materially different from fair value. Increases in the carrying amount arising on revaluation are credited to the revaluation reserve. Decreases in valuation of property, plant and equipment are first offset against increases from earlier valuations of the same asset and are thereafter charged to the income statement. All other decreases in valuation are charged to the income statement. Any subsequent increases are credited to the income statement up to the amount previously charged.
China Southern Airlines Corp. Ltd.	China	NYSE	1041668	4512	205809	Revaluations are performed with sufficient regularity to ensure that the carrying amount of these assets does not differ materially from that which would be determined using fair value at the balance sheet date.
TAM S.A.	Brazil	NYSE	1353691	4512	271710	Property, plant and equipment is recorded at the cost of acquisition, formation or construction, plus annual revaluation of aircraft, flight equipment land and building to their fair market values.

Appendix: (Continued) Details of the entire sample of Cross-listed firms who use PPE revaluation for at least one category of fixed assets

Company Name	Country	Market	CIK	SIC	GVKEY	Excerpts from Financial Statements
China Mobile Ltd.	Hong Kong	NYSE	1117795	4812	065662	Other than revaluations carried out in compliance with relevant PRC rules and regulations, the Group has no plan to revalue its property, plant and equipment and land lease prepayments on a regular basis.
China Netcom Group Corp (Hong Kong) Ltd.	Hong Kong	NYSE	1305755	4812	162077	Fixed assets other than buildings are carried at their revalued amounts. Revalued assets are stated at fair value as of the revaluation date less accumulated depreciation.
China Unicom Ltd.	Hong Kong	NYSE	1113866	4812	137066	Other property, plant and equipment (other than the telecommunications equipment of GSM business) are stated at revalued amounts instead of historical costs less accumulated depreciation and accumulated impairment losses.
China Telecom Corp. Ltd.	China	NYSE	1191255	4813	254338	In accordance with the Group's accounting policy (Note 2(g)), the property, plant and equipment of the Group as of December 31, 2004 were revalued for each asset class by the directors of the Company on a depreciated replacement cost basis. The value of the property, plant and equipment was determined at RMB 320,179. The surplus on revaluation of certain property, plant and equipment totaling RMB1,233 was credited to the revaluation reserve while the deficit arising from the revaluation of certain property, plant and equipment totaling RMB1,262 was recognized as an expense for the year ended December 31, 2004.

Appendix: (Continued) Details of the entire sample of Cross-listed firms who use PPE revaluation for at least one category of fixed assets

Company Name	Country	Market	CIK	SIC	GVKEY	Excerpts from Financial Statements
Global Crossing (UK) Telecommuications Ltd.	United Kingdom	OTC - Debt	1269527	4813	.	Property, plant and equipment, which include assets held under finance lease, are stated at deemed cost, at the date of transition, net of depreciation and any provision for impairment. Assets acquired subsequent to the date of transition are recorded at historical cost, net of depreciation and provision for impairment.
Koninklijke KPN N.V.	Netherlands	NYSE	1001474	4813	061440	KPN elected the exemption to revalue certain of its fixed assets upon the transition to IFRS to fair value and to use this fair value as their deemed cost. KPN applied the depreciated replacement cost method to determine this fair value. The revalued assets pertain to certain cables, which form part of property, plant & equipment. Under US GAAP, this revaluation is not allowed and therefore results in a reconciling item. As a result, the value of these assets as of December 31, 2006 under US GAAP is EUR 350 million lower (2005: EUR 415 million; 2004: EUR 487 million) than under IFRS.

Appendix: (Continued) Details of the entire sample of Cross-listed firms who use PPE revaluation for at least one category of fixed assets

Company Name	Country	Market	CIK	SIC	GVKEY	Excerpts from Financial Statements
Portugal Telecom, SGPS, S.A.	Portugal	NYSE	944747	4813	031882	Under the exception of IFRS 1, revaluation of tangible assets made in accordance with Portuguese legislation applying monetary indices, prior to 1 January 2004, was not adjusted and was included as the deemed cost of the asset for IFRS purposes. Under the exception of IFRS 1, revaluation of tangible assets made in accordance with Portuguese legislation applying monetary indices, prior to 1 January 2004, was not adjusted and was included as the deemed cost of the asset for IFRS purposes.
Telecom Italia Media S.p.A.	Italy	OTC	1120093	4813	019151	Property, plant and equipment owned is stated at acquisition or production cost or, for those assets existing at the transition date to IFRS at January 1, 2004, at the deemed cost which for some assets is the revalued cost.
Naspers Ltd.	South Africa	GLOBAL MKT	1106051	4841	206059	The group has elected to measure certain items of property, plant and equipment at fair value and to use these fair values as the items' deemed costs as at April 1, 2004. These items relate mainly to land and buildings in the group's private education segment.
Inmarsat Group plc	United Kingdom	OTC - Debt	1291396	4899	.	Fair value disclosure. Freehold land and buildings are carried at cost less accumulated depreciation. Had the freehold land and buildings been revalued on a market basis, their carrying amount at 31 December 2006 would have been US\$5.9m (2005: US\$3.7m). The market valuation was determined by the Directors.

Appendix: (Continued) Details of the entire sample of Cross-listed firms who use PPE revaluation for at least one category of fixed assets

Company Name	Country	Market	CIK	SIC	GVKEY	Excerpts from Financial Statements
EDP - Energias de Portugal S.A.	Portugal	NYSE	1039610	4911	064910	As allowed by IFRS 1, the Group has elected to consider as deemed cost of individual items of property, plant and equipment at the date of transition to IFRS (January 1, 2004), their revalued amount as determined in accordance with the previous accounting policies of the Group, which is broadly similar to depreciated cost measured under IFRS adjusted to reflect changes in a specific price index.
Enel S.p.A.	Italy	NYSE	1096200	4911	201794	Certain items of property, plant and equipment that were revalued at January 1, 2004 (the transition date) or in previous periods are recognized at their revalued amount, which is considered as their deemed cost at the revaluation date.
Enersis S.A.	Chile	NYSE	912505	4911	029039	In 1986, an increase based upon a technical appraisal of property, plant and equipment was recorded in the manner authorized by the SVS
International Power plc	United Kingdom	NYSE	937293	4911	103124	The property, plant and equipment of the Group's US operations which had been revalued to fair value on 1 January 2004, the date of transition to Adopted IFRSs, are measured on the basis of deemed cost, being the revalued amount at the date of that revaluation.
National Grid plc	United Kingdom	NYSE	1004315	4911	211819	Exhibite 15.1: Property, plant and equipment is recorded at cost or deemed cost at the date of transition to IFRS, less accumulated depreciation and any impairment losses.

Appendix: (Continued) Details of the entire sample of Cross-listed firms who use PPE revaluation for at least one category of fixed assets

Company Name	Country	Market	CIK	SIC	GVKEY	Excerpts from Financial Statements
Companhia de Saneamento Basico de Sao Paulo – SABESP	Brazil	NYSE	1170858	4941	205874	Property, plant and equipment are generally stated at amounts established by independent technical appraisals, plus price-level restatements from the date of the appraisals to 1995. Revaluation increments arising from revaluing assets to appraised values are recorded in the revaluation reserve component of shareholders' equity and subsequently transferred from the reserve to retained earnings as the related assets are depreciated, sold or upon disposal
Bunzl plc	United Kingdom	NYSE	1072397	5110	100095	Property, plant and equipment are stated at historical cost less accumulated depreciation and any impairment losses. The revalued amounts of previously revalued properties were treated as deemed cost upon transition to IFRS.
Signet Group plc	United Kingdom	NYSE	832988	5944	015520	Certain items of property, that had been revalued to fair value on or prior to 31 January 2004, the date of transition to IFRS, are measured on the basis of deemed cost, being the revalued amount at the date of that revaluation.
Barclays Bank plc	United Kingdom	NYSE - Preferred	312069	6020	012673	The carrying value of property on transition to IFRS was the deemed cost. The following table shows the historical cost of property:

Appendix: (Continued) Details of the entire sample of Cross-listed firms who use PPE revaluation for at least one category of fixed assets

Company Name	Country	Market	CIK	SIC	GVKEY	Excerpts from Financial Statements
BBVA Banco Frances S.A.	Argentina	NYSE	913059	6020	029286	They have been valued at acquisition cost plus increases from prior year appraisal revaluations, restated by inflation as explained in Note 3.2., less related accumulated depreciation calculated in proportion to the months of estimated useful life of items concerned.
Governor and Company of the Bank of Ireland	Ireland	NYSE	1022575	6020	063590	A revaluation of all Group property was carried out as at March 31, 2007. All freehold and long leasehold (50 years or more unexpired) commercial properties were valued by Lisneys as external valuers, who also reviewed the valuation carried out by the Bank's professionally qualified staff of all other property. Valuations were made on the basis of open market value.
HSBC Holdings plc	United Kingdom	NYSE	1089113	6020	015509	Land and buildings are stated at historical cost, or fair value at the date of transition to IFRSs ('deemed cost'), less any impairment losses and depreciation
National Australia Bank Ltd.	Australia	NYSE	833029	6020	014802	Property assets (land and buildings) are revalued annually, effective 1 July, by directors to reflect fair values. All other items of property, plant and equipment are carried at cost, less accumulated depreciation and any impairment losses.

Appendix: (Continued) Details of the entire sample of Cross-listed firms who use PPE revaluation for at least one category of fixed assets

Company Name	Country	Market	CIK	SIC	GVKEY	Excerpts from Financial Statements
Royal Bank of Scotland Group	United Kingdom	NYSE - Preferred	844150	6020	015634	Under previous GAAP, the Group's freehold and long leasehold property occupied for its own use was recorded at valuation on the basis of existing use value. The Group elected to use this valuation as at 31 December 2003 (£2,391 million) as deemed cost for its opening IFRS balance sheet (1 January 2004).
Commonwealth Bank of Australia	Australia	OTC	8565	6029	.	The Group measures its property assets (land and buildings) on a fair value measurement basis which is based upon independent market valuations
National Westminster Bank plc	United Kingdom	NYSE	702162	6029	.	Under previous GAAP, the Group's freehold and long leasehold property occupied for its own use was recorded at valuation on the basis of existing use value. The Group elected to use this valuation as at 31 December 2003 (£1,334 million) as deemed cost for its opening IFRS balance sheet (1 January 2004).
Eksporthfinans A/S	Norway	OTC	700978	6159	016187	The Company's land and office building were revalued in 1987. The revalued amount, net of deferred taxes, was credited to shareholders' equity. Depreciation of the building since the revaluation in 1987 has been based upon the revalued amount. The Company computes depreciation on a straight-line basis as follows:

Appendix: (Continued) Details of the entire sample of Cross-listed firms who use PPE revaluation for at least one category of fixed assets

Company Name	Country	Market	CIK	SIC	GVKEY	Excerpts from Financial Statements
Royal & Sun Alliance Insurance Group plc	United Kingdom	OTC	1126313	6331	015664	Group occupied property is stated at fair value, less subsequent depreciation for buildings. All other assets are stated at depreciated cost. Fair value movements are recorded in equity.
InterContinental Hotels Group plc	United Kingdom	NYSE	858446	7011	020067	On adoption of IFRS the Company retained previous revaluations of property, plant and equipment as deemed cost as permitted by IFRS 1 “First-time Adoption of International Financial Reporting Standards.”
Publicis Groupe S.A.	France	NYSE	1050952	7311	101292	Publicis opted to revalue its building at 133, Avenue des Champs - Elysées in Paris at its fair value at the date of transition to IFRS and to consider this value as being the deemed cost at the transition date.

Bibliography

- Aboody, D., Barth, M. E., & Kasznik, R. (1999). Revaluations of Fixed Assets and Future Firm Performance: Evidence from the UK. *Journal of Accounting and Economics*, 149-178.
- American Accounting Association's Financial Accounting and Reporting Section of the Financial Reporting Policy Committee. (2008). Response to the SEC Release, "Acceptance from Foreign Private Issuers of Financial Statements Prepared in Accordance with International Financial Reporting Standards without Reconciliation to U.S. GAAP File No. S7-13-07". *Accounting Horizons*, 22 (2), 223-240.
- Amir, E., Harris, T. S., & Venuti, E. K. (1993). A Comparison of the Value-Relevance of U.S. versus Non-U.S. GAAP Accounting Measures Using Form 20-F Reconciliations. *Journal of Accounting Research*, 31 (Supplement).
- Barlev, B., & Haddad, J. R. (2003). Fair Value and the Management of the Firm. *Critical Perspectives on Accounting*, 14, 383-415.
- Barth, M. E. (1994). Fair Value Accounting: Evidence from Investment Securities and the Market Valuation of Banks. *The Accounting Review*, 69 (1), 1-25.
- Barth, M. E. (2000). Valuation-based Accounting Research: Implications for Financial Reporting and Opportunities for Future Research. *Accounting and Finance*, 40, 7-31.
- Barth, M. E., & Clinch, G. (1996). International Accounting Differences and Their Relation to Share Prices: Evidence from U.K., Australian, and Canadian Firms. *Contemporary Accounting Research*, 13 (1), 135-170.
- 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, 199-233.
- Barth, M. E., & Landsman, W. R. (1995). Fundamental Issues Related to Using Fair Value Accounting for Financial Reporting. *Accounting Horizons*, 9 (4), 97-107.
- Barth, M. E., Beaver, W. H., & Landsman, W. R. (2001). 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., Beaver, W. H., & Landsman, W. R. (1996). Value-Relevance of Banks' Fair Value Disclosures under SFAS No. 107. *The Accounting Review*, 71 (4), 513-537.

- Barth, M. E., Landsman, W. R., & Wahlen, J. M. (1995). Fair Value Accounting: Effects on Banks' Earnings Volatility, Regulatory Capital, and Value of Contractual Cash Flows. *Journal of Banking & Finance* , 19, 577-605.
- Botosan, C. A. (1997). Disclosure Level and the Cost of Equity Capital. *The Accounting Review*, 72 (3), 323-349.
- Botosan, C. A., & Plumlee, M. A. (2005). Assessing Alternative Proxies for the Expected Risk Premium. *The Accounting Review*, 80 (1), 21-53.
- Bradshaw, M. T., Bushee, B. J., & Miller, G. S. (2004). Accounting Choice, Home Bias, and U.S. Investment in Non-U.S. Firms. *Journal of Accounting Research* , 42 (5).
- Brown, P., Izan, H. Y., & Loh, A. L. (1992). Fixed Asset Revaluations and Managerial Incentives. *ABACUS* , 28 (1).
- Cairns, D. (2006). The Use of Fair Value in IFRS. *Accounting in Europe* , 3, 5-22.
- Cairns, D., Massoudi, D., & Tarca, A. (2008). IFRS Fair Value Measurement and Accounting Policy Choice in the United Kingdom and Australia. Available from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1274024.
- Carroll, T. J., Linsmeier, T. J., & Petroni, K. R. (2003). The Reliability of Fair Value versus Historical Cost Information: Evidence from Closed-End Mutual Funds. *Journal of Accounting, Auditing & Finance* , 1-22.
- Christensen, H. B., & Nikolaev, V. (2010). Does Fair Value Accounting for Non-Financial Assets Pass the Market Test? Available from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1269515
- Claus, J., & Thomas, J. (2001). Equity Premia as Low as Three Percent? Evidence from Analysts' Earnings Forecasts for Domestic and International Stock Markets. *Journal of Finance* , 56, 1629-1666.
- Cotter, J., & Zimmer, I. (1995). Asset Revaluations and Assessment of Borrowing Capacity. *ABACUS* , 31 (2), 136-151.
- Daniel, S. J., Jung, B., Pourjalali, H., & Wen, E. (2010). Firm Characteristics Influencing Responses towards Adoption of the Fair Value Accounting Option: A Survey of Chief Financial Officers of U.S. Firms. Available from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1579326# .
- Daske, H. (2006). Economic Benefits of Adopting IFRS or US-GAAP - Have the Expected Cost of Equity Capital Really Decreased? *Journal of Business Finance & Accounting* , 33 (3), 329-373.

- Dietrich, J. R., Harris, M. S., & Muller III, K. A. (2001). The Reliability of Investment Property Fair Value Estimates. *Journal of Accounting and Economics* , 30, 125-158.
- Easley, D., & O'Hara, M. (2004). Information and the Cost of Capital. *The Journal of Finance* , LIX (4), 1553-1583.
- Easton, P. D. (2004). PE Ratios, PEG Ratios, and Estimating the Implied Expected Rate of Return on Equity Capital. *The Accounting Review* , 79 (1), 73-95.
- Easton, P. D., Edey, P. H., & Harris, T. S. (1993). An Investigation of Revaluations of Tangible Long-Lived Assets. *Journal of Accounting Research* , 31 (Supplement), 1-38.
- Eccher, E. A., Ramesh, K., & Thiagarajan, S. R. (1996). Fair Value Disclosure by Bank Holding Companies. *Journal of Accounting and Economics* , 22, 79-117.
- Eisenberg, T., Sundgren, S., & Wells, M. T. (1998). Larger board size and decreasing firm value in small firms. *Journal of Financial Economics* , 48, 35-54.
- Francis, J., Nanda, D., & Olsson, P. (2008). Voluntary Disclosure, Earnings Quality, and Cost of Capital. *Journal of Accounting Research* , 46 (1), 53-99.
- Gaeremynck, A., & Veugelers, R. (1999). The revaluation of assets as a signalling device: a theoretical and an empirical analysis. *Accounting and Business Research* , 29 (2), 123-138.
- Gebhardt, W., Lee, C., & Swaminathan, B. (2001). Toward an Implied Cost of Equity. *Journal of Accounting Research* , 39, 135-176.
- Gode, D., & Mohanram, P. (2003). Inferring the Cost of Capital Using the Ohlson-Juettner Model. *Review of Accounting Studies* , 8, 399-431.
- Guthrie, K., Irving, J. H., & Sokolowsky, J. (2009). Accounting Choice and the Fair Value Option. Available from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1471670.
- Haverty, J. L. (2006). Are IFRS and U.S. GAAP Converging? Some Evidence from People's Republic of China Companies Listed on the New York Stock Exchange. *Journal of International Accounting, Auditing and Taxation* , 15, 48-71.
- Herrmann, D., Saudagaran, S. M., & Thomas, W. B. (2006). The quality of fair value measures for property, plant, and equipment. *Accounting Forum* , 30, 43-59.

- Hitz, J.-M. (2007). The Decision Usefulness of Fair Value Accounting - A Theoretical Perspective. *European Accounting Review* , 16 (2), 323-362.
- Jaggi, B., & Tsui, J. (2001). Management Motivation and Market Assessment: Revaluations of Fixed Assets. *Journal of International Financial Management and Accounting* , 12 (2), 160-187.
- Kothari, S. P., Li, X., & Short, J. E. (2009). The Effect of Disclosures by Management, Analysts, and Business Press on Cost of Capital, Return Volatility, and Analyst Forecasts: A Study Using Content Analysis. *The Accounting Review* , 84 (5), 1639-1670.
- Krumwiede, T. (2008, August). Why Historical Cost Accounting makes Sense. *Strategic Finance* , 33-39.
- Lin, Y. C., & Peasnell, K. V. (2000). Fixed Asset Revaluation and Equity Depletion in the UK. *Journal of Business Finance & Accounting* , 27 (3&4), 0306-686X.
- Missonier-Piera, F. (2007). Motives for Fixed Asset Revaluation: An Empirical Analysis with Swiss Data. *The International Journal of Accounting* , 42 (2), 186-205.
- Nelson, K. K. (1996). Fair Value Accounting for Commercial Banks: An Empirical Analysis of SFAS No. 107. *The Accounting Review* , 71 (2), 161-182.
- Sengupta, P. (1998). Corporate Disclosure Quality and the Cost of Debt. *The Accounting Review* , 73 (4), 459-474.
- Sloan, R. G. (1999). Evaluating the Reliability of Current Value Estimates. *Journal of Accounting and Economics* , 26, 193-200.
- Song, C. J., Thomas, W., & Yi, H. (2010). Value Relevance of FAS 157 Fair Value Hierarchy Information and the Impact of Corporate Governance Mechanisms. *The Accounting Review* , 85 (4), 1375-1410.
- Stulz, R. M. (1999). Globalization, Corporate Finance, and the Cost of Capital. *Journal of Applied Corporate Finance* , 12 (3), 8-25.
- Trueman, B. (1986). Why do managers voluntarily release earnings forecasts? *Journal of Accounting and Economics* , 8, 53-71.