

# The Cost of Complying With U.S. GAAP and Cross-Listed Firms' Valuations

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*The study examines the capital market consequences of foreign firms' cost of complying with U.S. GAAP. It builds upon a prior research that explores the effect of foreign firms' U.S. GAAP compliance cost on their cross-listing decisions and listing choices (Lin 2011). Two cost constructs established at the firm level, reconciliation and disclosure, are adopted as proxy for firms' compliance cost. The valuation analyses confirm the existence of cross-listing and exchange-listing premium. Although individual firms' reconciliation costs play a little role in valuation, disclosure costs are found to negatively affect the value of cross-listed firms, i.e., firms with less disclosure of accounting information than what U.S. rules require, thus incurring higher disclosure costs, are valued less by the market. This result holds even after the strength of home country disclosure regime is considered. This study extends prior research by investigating the role of firm-specific compliance costs on valuation and provides new evidence on the source of the cross-listing premium.*

*Keywords: compliance cost, valuation, U.S GAAP, cross-listing, ADR, reconciliation, disclosure*

## INTRODUCTION

The U.S. capital market experienced rapid growth in the cross-border listing of foreign firms during the 1990s and early 2000s. For instance, the number of cross-listed firms grew from 158 in 1990 to more than 2,000 in 2006. Participating in the American Depository Receipts (ADRs) program is a popular way adopted by foreign firms to access the U.S. market. Among the various benefits associated with a U.S. listing, the valuation of cross-listed firms is usually found to be higher than that of non-cross-listed firms, a phenomenon commonly referred to as the “cross-listing premium or effects.”

Researchers have proposed various theories to explain the cross-listing premium, such as market segmentation hypothesis, investor recognition hypothesis, liquidity hypothesis, bonding hypothesis, and signaling hypothesis. However, Leuz (2003) points out that the primary source of cross-listing effects remains unclear. He further suggests that institutional and firm characteristics be incorporated in the analyses, to explore the issue further.

Since cross-listing premium is essentially the net benefit of listing, i.e., benefits minus costs, it makes sense to think that foreign firms incurring lower cross-listing costs are valued higher by investors, relative to those with higher cross-listing costs. As such, a detailed examination of the cross-listing costs incurred by non-U.S. firms should shed light on the source of cross-listing effects.

Prior literature has identified main cross-listing costs as meeting the U.S. accounting and disclosure standards, listing charges and professional service fees, and potential litigation risks. Among the financial reporting standards across different countries, U.S. Generally Accepted Accounting Principles (U.S.

GAAP) have been recognized as one of the highest quality set (Dye and Sunder, 2001; Bradshaw, Bushee, and Miller, 2004). In fact, researchers suggest that the cost of meeting U.S. accounting and disclosure requirements has deterred foreign companies from listing securities in the U.S. (Rader, 1994). This is corroborated by a series of surveys and case studies (Mittoo, 1992; Radebaugh, Gebhardt, and Gray, 1995; Fanto and Karmel, 1997), which found that complying with U.S. GAAP is a major cost that managers weigh against the benefits when making cross-listing decisions.

Motivated by cross-listing activities, the call by Leuz (2003) to explore the source of the cross-listing premium, and a general lack of empirical studies on cross-listing costs, I examine whether foreign firms' costs of U.S. GAAP compliance can explain part of the cross-listing effects. In essence, do U.S. markets recognize some foreign firms' lower compliance costs and reward them with higher price than other firms that incur higher compliance costs?

Per Ashbaugh (2001), there are two components of complying with U.S. GAAP: reconciliation and disclosure. Accordingly, I decompose the compliance costs into two parts: (1) *reconciliation* costs, i.e., costs incurred to follow specific U.S. accounting measurement rules, such as accounting for goodwill, and (2) *disclosure* costs, i.e., costs incurred to make disclosures required by the regulatory body that oversees the enforcement of that particular standard, for example, disclosures about contingent liabilities. The nature of the costs can be preparation costs and information revelation costs.

Following Lin (2011), I utilize the Worldscope database to collect information on the accounting policies adopted by foreign firms. The data serve as the base to compute two cost constructs (*reconciliation* and *disclosure*) at the firm level, which represent firms' compliance costs. Same as Doidge, Karolyi, and Stulz (2004) and Hope, Kang, and Zang (2007), I use *Tobin's q* to proxy for firms' valuations. *Tobin's q* is computed by dividing (Total Assets – Book Value of Equity + Market Value of Equity) by Total Assets. Doidge et al. (2004) find that at the end of 1997, foreign companies with shares cross-listed in the U.S. had *Tobin's q* ratios that were 16.5% higher than that of non-cross-listed firms from the same country, and that valuation difference reached 37% for companies listed on major U.S. exchanges. Using country-level disclosure score proxied by *CIFAR*, a disclosure index produced by the *Center for International Financial Analysis and Research* that rates companies' annual reports for their inclusion or exclusion of 85 items (Appendix C), Hope et al. (2007) find that valuation benefit for exchange-listed firms is lower for firms domiciled in a jurisdiction with poorer information environment. The result suggests that home country disclosure practice of cross-listed firms matter to investors, even after firms subject themselves to U.S. accounting rules and regulations. However, whether firm-specific compliance costs play a role in their valuation remains an empirical question and is the main inquiry of the paper.

I adopt the OLS regression models to test the hypotheses. The valuation analyses confirm the existence of cross-listing and exchange-listing premium. In addition, although firms' reconciliation costs do not seem to have a significant impact on valuation, disclosure costs negatively affect the values of cross-listed firms; i.e., cross-listed firms that disclose less accounting information than what U.S. rules require, thus incurring higher disclosure costs, are valued less by the market. To certain extent, exchange-listed firms that disclose less accounting information are also valued less by the market. Taken together, the findings are consistent with the general theme in the literature that disclosure matters. Improvement in a firm's disclosure environment can increase its value.

The study is important, given the active cross-listing activities in the U.S. and the increasing integration of capital markets worldwide. It contributes to the collective literature on cross-listing and international accounting by adding a cost dimension to the discussion. The paper is structured as follows. Section 2 discusses ADR background and cross-listing theories. Section 3 develops the research design and hypotheses. Section 4 presents variables and empirical models. Section 5 outlines data sources and sample selection procedures. Section 6 documents the findings. Section 7 reports sensitivity analyses. Section 8 concludes with limitations of the study.

## **BACKGROUND AND THEORIES**

### **ADR Background**

An ADR is a negotiable receipt (certificate) issued by a U.S. depository bank, such as the Bank of New York, that represents the shares of non-U.S. securities held by a depository's custodian in the home market of non-U.S. companies. It was first developed in 1927 by J.P. Morgan as a means for U.S. investors to register and earn dividends on non-U.S. stocks, without direct access to the local market itself. Foreign firms have leveraged ADRs to access the U.S. market, in conjunction with raising capital, engaging in mergers and acquisitions, restructuring, foreign government debt offerings, and employee benefit plans. Once an ADR program is established and registered with the SEC, the ADRs trade freely in the U.S. just like any other U.S. security. Each ADR share represents a multiple of the underlying foreign security, which permits the ADR to trade in an appropriate price range for the U.S. market. ADRs are quoted in U.S. dollars, their dividends are paid in U.S. dollars, and they settle just like any other U.S. security.

An overseas company has four types of ADR instruments to choose from: one level of private placement and three levels of public placement. Private offerings are made under Rule 144A of the Securities Act of 1933 (adopted in April 1990) and the securities are privately sold to Qualified Institutional Buyers (QIBs), which have very limited liquidity. Since it is a private placement, a company is not required to register under the Securities Act of 1933 (Securities Act) or the Securities Exchange Act of 1934 (Exchange Act). Thus, it is exempt from conforming to the SEC's accounting and disclosure requirements and most civil liability provisions. Financial statements are typically prepared in accordance with the home country's accounting principles.

A public placement involves three types of sponsored ADRs: Level I, Level II, and Level III. A Level I ADR trades in the over-the-counter (OTC) market as OTC Bulletin Board or Pink Sheet issues and has limited liquidity. It cannot be listed on an exchange or used to raise capital. Under the information exemption of the Exchange Act, a company with Level I ADRs can obtain an exemption from registration. It is only required to supply the SEC with any material information produced and distributed locally in its home country. Since it is not fully registered with the SEC, a company does not need to follow U.S. GAAP. Home-country accounting is allowed with adequate English translation, if necessary.

Firms listed via Level II ADRs must register with the SEC by submitting Form F-6 in accordance with the Exchange Act. They can trade their ADRs on one of the major U.S. exchanges: the NYSE, the American Exchange (AMEX), or the National Association of Securities Dealer's Automation Quotation (NASDAQ) System. In addition to complying with the SEC's reporting and disclosure requirements, they must also meet the minimum listing standards and corporate governance requirements of the particular exchange on which they are listed. Level III ADRs are similar to Level II ADRs, with an additional feature that they can raise capital through the issuance of new shares. This capital-raising element requires them to register with the SEC via Form F-1 in accordance with the Securities Act.<sup>1</sup> Firms with Level II and III ADRs are considered the exchange-listed firms.

As an SEC registrant, Level II and III ADR firms are required to provide financial information annually in Form 20-F within six months of the fiscal year-end and periodically in Form 6-K, both in accordance with U.S. GAAP. These firms can also prepare their financial statements using International Financial Reporting Standards (IFRS) or their home-country GAAP, with a reconciliation of net income and stockholders' equity equivalent to that under U.S. GAAP. Although the reconciliation requirement has been removed for firms following IFRS reporting, foreign registrants still need to comply with disclosure rules through Form 20-F filings, such as Item 17 and Item 18.2. Item 18 is required for securities offerings (Level III) and typically calls for vastly expanded footnote disclosure, including virtually all required U.S. disclosures. Foreign firms may also choose to report voluntarily to the SEC under Item 18.

### **Cross-Listing Theories**

To better understand the phenomenon of cross-listing, researchers across various disciplines have proposed several theories.

The *market segmentation hypothesis* is one of the first theories which suggests that the world markets are separated by different barriers to capital flows, including taxes, government controls on capital and foreign exchange, information constraints, language, cultural issues, and legal differences. As such, stocks in a country that is segmented from foreign investors bear additional risks caused by these barriers (Errunza and Losq, 1985; Eun and Janakiramanan, 1986). Theories of capital market integration (Stapleton and Subrahmanyam, 1977; Alexander, Eun, and Janakiramanan, 1987) suggest that removing these barriers will allow the risk to be shared globally by more investors, leading to a reduction in the expected return demanded by investors and an increase in stock prices. Thus, market segmentation creates an incentive for non-U.S. firms to reduce investment barriers by listing their shares on U.S. markets. Consistent with this expectation, Foerster and Karolyi (1999) and Miller (1999) documented a small positive reaction to ADR listings or the announcement of listing. Errunza and Miller (2000) found a decline in the cost of capital after ADR listing, while Miller (1999) discovered that the influence of barriers was stronger in emerging markets.

As another conventional theory, Merton's (1987) *investor recognition hypothesis* posits that investors tend to consider only companies with which they are familiar. As such, full diversification is not possible and firm-specific risk is priced at equilibrium. For firms with small shareholder base, listing shares on foreign exchanges can effectively expand their investor base. Findings from Foerster and Karolyi (1999) provide direct empirical support to the hypothesis. Using analyst coverage and media attention as alternative measures of investor recognition, Baker, Nofsinger, and Weaver (2002) also discover that an increase in the size of the investment base lowers the cost of capital and increases the market value of shares, lending further support to the theory.

The *liquidity hypothesis* posits that, since U.S. capital markets are liquid and deep, a foreign firm can raise funds via ADR at a lower cost than it would at home, especially for firms from emerging markets. In surveys (Mittoo, 1992; Fanto and Karmel, 1997) of corporate managers that have initiated overseas listings for their firms, managers often cited increased liquidity as a primary motivation. Lins, Strickland, and Zenner (2005) document that the sensitivity of investment to cash flows declines significantly for firms from emerging capital markets, but does not change for firms from developed markets. The study by Davis-Friday, Frecka, and Rivera (2005) shows that Mexican ADR companies issued equity on U.S. exchanges to alleviate capital constraints, which had become very severe after the 1995 peso devaluation.

The *bonding hypothesis* acknowledges that in countries where legal protections for minority investors are weak or enforcement mechanisms are ineffective, firms face considerable difficulties in raising external capital (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1997). Coffee (1999) and Stulz (1999) suggest that firms wishing to access external capital can bond themselves to protect the interests of minority investors through cross-listing in the U.S., because compliance with U.S. disclosure requirements, exposure to the SEC enforcement, and the threat of shareholder litigation make it harder and costlier for controlling owners and managers to extract private control benefits from outside investors. In addition, firms are subject to greater scrutiny and monitoring from the press and reputable intermediaries such as U.S. underwriters (for Level III offerings), debt-rating agencies, auditors, and analysts. Studies that adopt the bonding hypothesis have consistently produced support. For example, Reese and Weisbach (2002) document substantial patterns between cross-listing, subsequent equity offerings, and shareholder protection. They conclude that overseas firms cross-list in the U.S. to increase protection of their minority shareholders. Similarly, Doidge et al. (2004) find that growth opportunities are valued more highly for firms listed in the U.S., and that this valuation premium is negatively related to the level of investor protection in firms' domicile countries.

Finally, the *signaling hypothesis* suggests that a key factor in cross-listing decision is information consideration. Relying on analytical models, Cantale (1996), Fuerst (1998), and Moel (1999) reveal that firms use cross-listing in the U.S. to signal their private information on unobservable good qualities to outside investors. Such incentive is particularly appealing to firms coming from home countries where disclosure quality and information trading environments are weak. To that extent, these firms can be viewed as "bonding" themselves to an increased level of disclosure required by the SEC.

## RESEARCH DESIGN AND HYPOTHESES DEVELOPMENT

Though firms were driven by different motives to cross-list their shares in the U.S., as suggested by the above theories, one common theme is that they all benefited from such activities, ranging from positive abnormal returns, decrease in the cost of capital, relaxation of capital constraints, lower private control benefits, to improved firms' visibility and information environment, and higher firm values. To better understand the source of listing benefits, particularly higher valuation, I approach it from a cost perspective, an area that lacks empirical archival research. Specifically, I focus on one major cross-listing cost incurred at the firm level: compliance with U.S. GAAP.

It has been established in the literature that complying with U.S. GAAP is a top cross-listing cost. For example, Biddle and Saudagaran (1989) point out that the initial listing and registration fees are relatively minor cost components, compared with the costs of meeting the accounting and disclosure requirements arising from differences in financial reporting and regulatory requirements between countries. In surveying the managers of Canadian companies that are cross-listed in the U.S. and the U.K., Mittoo (1992) finds that managers view the main costs of cross-listing as: (1) meeting the SEC reporting requirements (60.1% of the respondents); (2) legal and accounting fees (44.2%); and (3) listing fees (31.7%). In a case study, Radebaugh et al. (1995) examine Daimler-Benz's decision to list its existing shares on NYSE in 1993. They conclude that few German companies are listed in the U.S. due to the significant difference between German GAAP and U.S. GAAP. Fanto and Karmel (1997) conducted a survey on the attitudes of foreign companies regarding listing shares in the U.S. For more than 50% of the respondents, accounting reconciliation was considered expensive and time-consuming. The respondents also complained about the extensiveness of U.S. disclosure requirements.

Ashbaugh (2001) proposes that each set of accounting standards is made up of two components: accounting measurement policies and disclosure. Investigating factors associated with non-U.S. firms' voluntary reporting of financial information following International Accounting Standards (IAS) or U.S. GAAP, the author identifies three reasons for voluntary reporting: (1) to communicate with foreign financial information users, proxy by the number of foreign equity markets in which a firm's shares trade; (2) to facilitate raising equity capital; and (3) to provide more standardized financial information in the annual financial report, which is proxy by the deviation of domestic GAAP from IAS or U.S. GAAP. Ashbaugh (2001) further states that since not all firms report IAS or U.S. financial information in their annual reports, firms would incur differential costs to disclose such information. Thus, the more restrictive IAS or U.S. GAAP accounting measurement methods are, relative to domestic GAAPs, the costlier it is for firms to report standardized measures of net income and stockholders' equity. Information collection and processing costs are necessary to convert a domestic GAAP accounting system into one that produces earnings and stockholders' equity in conformity with IAS or U.S. GAAP. Furthermore, the increase in required disclosures can impose costs on firms. If the data are not already produced for internal reporting purposes, firms would incur out-of-pocket costs to provide additional disclosures, which may also impose implicit costs on a firm if such disclosures place it at a competitive disadvantage when competitors do not publish similar information. Hence, for some firms, the costs will dominate the perceived benefits associated with reporting IAS or U.S. GAAP.

In the area of reconciliation, prior research on value-relevance of non-U.S. firms' Form 20-F reconciliations, as summarized in Pownall and Schipper (1999), has generated mixed results. For instance, Amir, Harris, and Venuti (1993) find that U.S. GAAP reconciliations of firms' home country GAAP accounting numbers are value-relevant. On the other hand, Chan and Seow (1996) show that earnings prepared under firms' home-country GAAP are value-relevant to U.S. investors and that they are even more value-relevant than U.S. GAAP-based accounting information. In another line of research examining accounting quality, Lang, Raedy, and Yetman (2003) document that cross-listed firms appear to be less aggressive in managing earnings compared to a matched sample of foreign firms not currently cross-listed in the U.S. However, when compared with a matched sample of U.S. firms, cross-listed firms have reconciled earnings that differ systematically from U.S. GAAP earnings for U.S. firms and are characterized by more evidence of earnings management (Lang, Raedy, and Wilson, 2005).

In the area of disclosure, previous studies document the association between disclosure level and the cost of capital (Botosan, 1997; Leuz and Verrecchia, 2000). Regarding the valuation effect of increased disclosure, Lang, Lins, and Miller (2003) demonstrate that cross-listed firms enjoy a better information environment than non-cross-listed firms and, consequently, have higher market values. The authors attribute the improved information environment to cross-listed firms' voluntary commitment to increased disclosure and the scrutiny of the U.S. market. In their investigation of why cross-listed firms are worth more, Doidge et al. (2004) include home country disclosure level (proxy by *CIFAR*) as a control variable. However, they do not consistently find disclosure to be a significant variable. On the other hand, Hope et al. (2007) show that there is a valuation benefit for cross-listing on an organized exchange which mandates high disclosures, and that the benefit is smaller for firms domiciled in a jurisdiction with a relatively lower disclosure level (proxy by *CIFAR*), even though it is costlier for these firms to list on an organized exchange.

Extending prior research, I include in the valuation model two components of compliance cost (*reconciliation* and *disclosure*) measured at the firm level. Due to a lack of obvious association between a cross-listed firm's value and its cost to comply with U.S. GAAP, i.e., *reconciliation* and *disclosure*, I state the hypothesis in the null form as follows:

**H1:** *There is no systematic difference in valuation between cross-listed firms that incurred higher reconciliation and/or disclosure costs and cross-listed firms that incurred lower reconciliation and/or disclosure costs.*

**H2:** *There is no systematic difference in valuation between exchange-listed firms that incurred higher reconciliation and/or disclosure costs and exchange-listed firms that incurred lower reconciliation and/or disclosure costs.*

## VARIABLES AND EMPIRICAL MODELS

### Variables

The hypotheses investigate whether cross-listed firms (H1) and exchange-listed firms (H2) that incur higher compliance costs are valued differently from firms that incur lower compliance costs. I use two variables, *Reconcile* and *Disclosure*, to measure individual compliance costs at the firm level.

*Reconcile* is a proxy for reconciliation costs incurred by a foreign firm to align its numbers with U.S. accounting rules. Based on a metric created by Bradshaw and Miller (2005) on the 13 accounting policies (Appendix A)<sup>4</sup>, I compare a firm's adoption of each accounting policy to its respective U.S. standard. If it is inconsistent with the U.S. accounting method, I assign one point to that item; otherwise, I assign zero. The sum of these 13 individual scores thus represents the distance of a firm's accounting practice from the U.S. benchmark. I then divide the sum, i.e., the total number of noncompliance items, by 13 to get the value of *Reconcile*, which is a ratio that ranges from 0 (100% compliance) to 1 (100% noncompliance). A higher value thus suggests higher reconciliation costs, since more time and efforts are needed to convert accounting information from a home accounting standard to the U.S. standard.

Similarly, *Disclosure* is a proxy for a firm's cost incurred in order to make available the information required by the U.S. reporting rules. Same as Lin (2011), I adopt the metric based on whether a firm discloses information on 31 items in two groups: (1) 29 accounting method choices, and (2) auditor and auditor's opinion (Appendix B). These items are data fields specified in the Worldscope database. If a firm does not disclose information on one of these 31 items, I assign one point for that item; otherwise, I assign zero. The sum of these 31 individual scores thus provide a measure of the distance between a firm's disclosure practice and that of the U.S. rules. I then divide the sum, i.e., the total number of non-disclosed items, by 31 to get the value of *Disclosure*, which is a ratio that ranges from 0 (100% disclosed) to 1 (100% non-disclosed). A higher value thus indicates higher disclosure costs. This disclosure metric, constructed at the firm level, differs from the *CIFAR* scores obtained at the country level. *CIFAR* has been adopted in the literature as a proxy for the disclosure environment of the home country.

## Valuation Models

To test whether the firms' compliance costs have an impact on the cross-listing premium, I adopt the OLS regression framework comparing cross-listed and non-cross-listed firms, as specified in Equation (1).

$$Tobin's\ q = \alpha_0 + \alpha_1 CL + \alpha_2 Reconcile + \alpha_3 Disclosure + \alpha_4 CL * Reconcile + \alpha_5 CL * Disclosure + \alpha_6 CIFAR + \alpha_7 Anti\_D + \alpha_8 Liquidity + \alpha_9 Growth + \alpha_{10} ROA + \varepsilon \quad (1)$$

*Tobin's q* is employed as the dependent variable in the regression, computed by dividing (total assets – book value of equity + market value of equity) by total assets. Variable *CL* is an indicator variable that equals one if a firm cross-lists in the U.S. and zero otherwise. The interaction terms *CL\*Reconcile* and *CL\*Disclosure* are the points of interest in the test, demonstrating whether the valuation impact of cross-listing varies systematically with firm-specific compliance costs. Based on prior research, I include a few country-level and firm-level variables in the model to control for factors that are expected to influence a firm's valuation. At the country level, *CIFAR* is included to account for the effect of home-country disclosure environment. Consistent with Hope et al. (2007), a positive sign is expected. Prior research shows a positive association between firm valuation and shareholder protection in the home country, which is proxy by *Anti\_D*, an index of anti-director rights. I adopt the measure from La Porta et al. (1997, 1998), which aggregates six important shareholder rights across countries.<sup>5</sup> Liquidity, measured as the ratio of the dollar value of shares traded to the average market capitalization, is used to control for the liquidity of the capital market in the home country. At the firm level, I include *Growth* and *ROA* to control for the effects of firms' growth and profitability on their valuations. *Growth* equals the percentage of a firm's net sales growth.

Prior research shows that the premium is larger for exchange-listed firms (Miller, 1999; Doidge et al., 2004). To test whether firms' compliance costs play a role in the valuation of exchange-listed firms, I adopt the same OLS regression framework as in equation (1), focusing on the comparison between exchange-listed and non-exchange-listed firms.

$$Tobin's\ q = \alpha_0 + \alpha_1 EX\_CL + \alpha_2 Reconcile + \alpha_3 Disclosure + \alpha_4 EX\_CL * Reconcile + \alpha_5 EX\_CL * Disclosure + \alpha_6 CIFAR + \alpha_7 Anti\_D + \alpha_8 Liquidity + \alpha_9 Growth + \alpha_{10} ROA + \varepsilon \quad (2)$$

*EX\_CL* takes the value of one if a firm cross-lists on a major U.S. exchange (NYSE, AMEX, or NASDAQ), and zero otherwise. The exchange-listed firms are Level II and Level III ADR firms, which are required to follow the U.S. accounting and disclosure requirements. The interaction terms *EX\_CL\*Reconcile* and *EX\_CL\*Disclosure* are the points of interest in the test, demonstrating whether the valuation impact of exchange listing varies systematically with firm-specific compliance costs. The rest of the control variables are the same as those in Equation (1).

I recognize the potential endogeneity issue for the valuation models. Prior studies have shown that foreign firms cross-listed or exchange-listed have higher *Tobin's q* values. However, it is likely that firms valued higher by the market tend to cross-list or exchange-list more. To address this potential simultaneity problem, I could employ an instrumental variables framework. An instrumental variable is required to be related to the independent variable *CL* (*EX\_CL*) but not related to the dependent variable *Tobin's q*; i.e., it must only be related to *Tobin's q* through its influence on *CL* (*EX\_CL*). It is difficult to come up with a good instrumental variable that would satisfy this requirement. In addition, since *CL* (*EX\_CL*) interacts with two other independent variables, *Reconcile* and *Disclosure*, additional instrumental variables are needed to break down the simultaneity; otherwise, those interactions must be left out. As a result, finding a number of proper instruments presents a real challenge for the current study and remains to be explored in future research.

## SAMPLE AND DATA SOURCES

Sample firms were selected from the Worldscope Global Compact D, which contains information on public-traded companies from various countries worldwide. Since the Worldscope collected firms' complete set of accounting policies up to 2001, I chose 1999 as the cutoff year to obtain the largest number of sample firms possible.<sup>6</sup> Initially, 14,376 firms are identified from the June 2000 and June 2001 CDs. Due to the lack of country-level variables such as *CIFAR* or investor protection, 947 firms are excluded from the sample. Applying the size cutoff point of US\$100 million as in Doidge et al. (2004) and Hope et al. (2007), I lose another 5,025 firms that had total assets less than \$100 million. For the remaining samples, 865 firms did not disclose their accounting methods, and another 813 firms have missing firm-level information such as growth rates. Lastly, 72 firms indicated that they followed U.S. GAAP and are thus eliminated. The final sample size is 6,654 firms.

I locate the list of cross-listed firms from the websites of the Bank of New York and JP Morgan's ADR Universe. Most of the start date of ADR firms' cross-listing activities are provided there. I check each sample firm obtained from Worldscope CDs against this list to determine the cross-listing status as of December 31, 1999, resulting in a total of 533 ADR firms. The breakdown of their listing choices is: 111 firms were traded under Rule 144a, 289 firms were traded over the counter (Level I ADR), 74 were Level II ADR firms, and 59 were Level III ADR firms. The rest of 6,121 firms were none-cross-listed in the U.S. as of December 31, 1999. The total 6,654 firms were from 35 countries. Table 1 presents the distribution of firms by country and listing mode, as well as the values of the three country-level variables: *CIFAR*, *Anti\_D*, and *Liquidity*.

**TABLE 1**  
**LISTING TYPE BY COUNTRY AND COUNTRY VARIABLES**

Country	Total	NCL Firms	CL Firms	Rule 144a	Level I	Level II	Level III	<i>CIFAR</i>	<i>Anti_D</i>	<i>Liquidity</i>
Argentina	36	25	11	4	0	3	4	68	4	0.50
Australia	201	179	22	3	12	5	2	80	4	0.52
Austria	56	48	8	0	8	0	0	62	2	0.71
Belgium	72	70	2	0	2	0	0	68	0	0.23
Brazil	87	75	12	1	5	5	1	56	3	0.86
Chile	66	58	8	0	0	0	8	78	5	0.11
Denmark	105	102	3	0	2	0	1	75	2	0.57
Finland	62	57	5	1	1	2	1	83	3	0.53
France	312	294	18	1	9	2	6	78	3	0.64
Germany	318	308	10	0	8	1	1	67	1	1.38
Greece	65	61	4	1	1	0	2	61	2	0.73
Hong Kong	261	213	48	0	47	0	1	73	5	1.13
India	159	117	42	40	1	1	0	61	5	0.43
Ireland	35	28	7	0	3	3	1	81	4	0.83
Israel	25	19	6	1	0	3	2	74	3	0.26
Italy	157	145	12	2	7	2	1	66	1	0.66
Japan	2,173	2,081	92	1	87	3	1	71	4	0.46
Korea	124	112	12	8	0	2	2	68	2	1.88
Malaysia	244	233	11	11	0	0	0	79	4	0.73
Mexico	71	41	30	3	15	2	10	71	1	0.38
Netherlands	122	107	15	0	5	6	4	74	2	0.67
New Zealand	36	36	0	0	0	0	0	80	4	0.38
Norway	75	72	3	0	3	0	0	75	4	0.75

Pakistan	20	18	2	1	1	0	0	73	5	1.06
Philippines	65	59	6	2	3	1	0	64	3	0.35
Portugal	34	29	5	2	1	0	2	56	3	0.66
Singapore	130	121	9	0	9	0	0	79	4	0.50
South Africa	113	95	18	0	13	5	0	79	5	0.19
Spain	109	103	6	1	3	0	2	72	4	1.70
Sweden	104	95	9	1	6	2	0	83	3	0.68
Switzerland	141	137	4	0	4	0	0	80	2	1.01
Taiwan	165	143	22	20	0	1	1	58	3	4.62
Thailand	110	100	10	1	9	0	0	66	2	0.38
Turkey	25	20	5	4	1	0	0	58	2	1.30
UK	776	720	56	2	23	25	6	85	5	0.44
<b>Total</b>	<b>6,654</b>	<b>6,121</b>	<b>533</b>	<b>111</b>	<b>289</b>	<b>74</b>	<b>59</b>			

## RESULTS

The descriptive statistics of the variables are presented in Table 2. The results indicate that 8% of the sample firms were cross-listed in the U.S., consistent with the data in Doidge et al. (2004), and that 2% of the firms were listed on a major U.S. stock exchange. When it comes to complying with U.S. GAAP, foreign firms were about 23% noncompliant for the 13 accounting policies (*Reconcile*) and did not disclose 36% of their accounting information for the 31 items (*Disclosure*).

**TABLE 2**  
**DESCRIPTIVE STATISTICS**

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
<i>CL</i>	0.08	0.27	0.00	1.00
<i>EX CL</i>	0.02	0.15	0.00	1.00
<i>Reconcile</i>	0.23	0.16	0.00	1.00
<i>Disclosure</i>	0.36	0.12	0.06	0.84
<i>CIFAR</i>	73.13	7.13	56.00	85.00
<i>Anti D</i>	3.57	1.23	0.00	5.00
<i>Liquidity</i>	0.73	0.71	0.11	4.62
<i>Growth</i>	8.56	51.57	-100.00	1,146.49
<i>ROA</i>	4.14	8.71	-69.45	116.00
<i>Tobin's q</i>	1.40	1.35	0.22	25.18

Table 3 presents the correlation matrix of the regression variables. *Reconcile* and *Disclosure* are positively correlated with each other, but the correlation is not strong ( $\rho = 0.21$ ). They are not highly correlated with other control variables. *CIFAR* is positively correlated with anti-director rights and negatively correlated with *Liquidity* ( $p < 0.01$ ). To determine the potential impact of these correlations on multivariate tests, I calculate the variance inflation factors (VIFs) of the independent variables. In general, the VIF scores are not particularly high, with an average score of 1.53. Thus, it appears that there is no strong multicollinearity problem.

**TABLE 3**  
**CORRELATION MATRIX**

	<i>Reconcile</i>	<i>Disclosure</i>	<i>CIFAR</i>	<i>Anti_D</i>	<i>Liquidity</i>	<i>Growth</i>	<i>ROA</i>	<i>Tobin's q</i>
<i>Reconcile</i>	1							
<i>Disclosure</i>	0.21***	1						
<i>CIFAR</i>	0.15***	-0.10***	1					
<i>Anti_D</i>	0.20***	-0.03**	0.43***	1				
<i>Liquidity</i>	-0.15***	-0.03***	-0.40***	-0.25***	1			
<i>Growth</i>	-0.01	0.05***	0.02*	-0.06***	0.05***	1		
<i>ROA</i>	0.02	0.03***	0.06***	-0.06***	0.05***	0.33***	1	
<i>Tobin's q</i>	-0.05***	-0.02	0.04***	-0.05***	0.04***	0.14***	0.35***	1

\*\*\*, \*\*, \* indicate significance level, respectively, at 0.01, 0.05 and 0.1 level.

Table 4 presents the results of estimating equation (1) and (2) which examine whether the valuation impact of cross-listing and exchange-listing varies systematically with a firm's compliance cost. I adopt the OLS regression with *Tobin's q* being the dependent variable and sample size 6,654 firms. Two models are specified for each scenario. Model 1 includes *CL*, *Reconcile*, *Disclosure*, two interaction terms *CL\*Reconcile*, *CL\*Disclosure*, and two country-level variables *Anti\_D* and *Liquidity*, along with two firm-level variables *Growth* and *ROA*. Model 2 adds one additional country variable, *CIFAR*, as Hope et al. (2007) discovered that home country disclosure practice of cross-listed firms matters to investors.

In the case of cross-listing (H1), the coefficient on *CL* is significantly positive for both models, suggesting that cross-listed firms receive higher values than non-cross-listed firms. This result confirms the existence of cross-listing premium which is generally recognized in the literature. For the compliance cost, *Reconcile* and *Disclosure*, the coefficients are both negative, although only *Reconcile* is statistically significant ( $p = 0.00$ ). This suggests that the distance between a firm's accounting method choice and the U.S. GAAP has a negative impact on its valuation. In other words, a foreign firm is valued less by the market if its application of home country accounting standard is more different from the U.S. accounting rules. Although the coefficient of firm-specific disclosure cost is insignificant, the effect is picked up by the home country disclosure environment, *CIFAR*, in Model 2. The coefficient of *CIFAR* is positively significant, i.e., foreign firms domiciled in a home country with a better disclosure environment are generally valued higher by the market, which is in line with the findings in Hope et al. (2007).

The coefficients of two interaction terms, *CL\*Reconcile* and *CL\*Disclosure*, are both negative. However, only the coefficient of *CL\*Disclosure* is statistically different from zero, suggesting that the positive association between a firm's valuation and its cross-listing status (*CL*) is discounted by its disclosure costs. To put it another way, a cross-listed firm that incurs higher costs in making its accounting information available is generally valued less, relative to other cross-listed firms that disclose more items. Interestingly, the same association persists in model 2, where *CIFAR* is added to the equation. It implies that, in addition to recognizing a foreign firm's home country disclosure environment, investors place an extra premium on a firm value if its disclosure is more in compliance with U.S. financial reporting rules. Taken together, the evidence suggests that a cross-listed firm's cost in reconciling its accounting method choice (*Reconcile*) to U.S. GAAP does not appear to affect its valuation; however, its disclosure practice (*Disclosure*) represents a potential source of a cross-listing premium.

**TABLE 4**  
**VALUATION IMPACT OF CROSS-LISTING AND EXCHAENG LISTING**

<b>H1: Cross-Listing</b>			<b>H2: Exchange-Listing</b>		
	Model 1	Model 2		Model 1	Model 2
	Coefficient	Coefficient		Coefficient	Coefficient
<i>Intercept</i>	1.348***	0.792***	<i>Intercept</i>	1.342***	0.815***
<i>CL</i>	0.619***	0.579***	<i>Ex_CL</i>	1.388***	1.338***
<i>Reconcile</i>	-0.359***	-0.382***	<i>Reconcile</i>	-0.377***	-0.396***
<i>Disclosure</i>	-0.068	-0.020	<i>Disclosure</i>	-0.074	-0.027
<i>CL*Reconcile</i>	-0.564	-0.494	<i>Ex_CL*Reconcile</i>	-1.476	-1.484
<i>CL*Disclosure</i>	-1.183**	-1.059**	<i>Ex_CL*Disclosure</i>	-1.591*	-1.436
<i>CIFAR</i>		0.008***	<i>CIFAR</i>		0.008***
<i>Anti_D</i>	-0.023*	-0.040***	<i>Anti_D</i>	-0.021	-0.037***
<i>Liquidity</i>	0.007	0.032	<i>Liquidity</i>	0.010	0.034
<i>Growth</i>	0.001**	0.001*	<i>Growth</i>	0.001**	0.001*
<i>ROA</i>	0.053***	0.052***	<i>ROA</i>	0.052***	0.052***
<b>Adjusted R<sup>2</sup></b>	<b>0.129</b>	<b>0.130</b>		<b>0.133</b>	<b>0.134</b>

\*\*\*, \*\*, \* indicate significance level, respectively, at 0.01, 0.05 and 0.1 level.

To quantify the impact of disclosure cost on valuation, I take the coefficient of *CL \* Disclosure* (-1.059), and multiply it by the mean value of *Disclosure* 0.36 (Table 2), to get 0.381, suggesting an average deduction of 0.381 in firms' values due to the disclosure costs. That is to say, on average, the positive effect of cross-listing on valuations (0.579) is reduced by 0.381 as a result of firms' disclosure costs. Thus, the net benefit is 0.198 (0.579 minus 0.381).<sup>7</sup>

In the case of exchange listing (H2), I adopt the same models as in the case of cross listing and replace the variable *CL* with *EX\_CL*. Note that of the total 6,654 observations, 111 firms were listed on an organized exchange. Similarly, the coefficient on *EX\_CL* is significantly positive for both models, suggesting that exchange-listed firms are valued higher than non-exchange-listed firms. This confirms the existence of exchange-listing premium. Note that the coefficient of *EX\_CL* (1.388) is larger than that of *CL* (0.619), indicating that investors place higher values on exchange-listing than a general cross-listing (OTC or Level I). As expected, the coefficients of *Reconcile* and *Disclosure* are both negative; however, only *Reconcile* is statistically significant ( $p = 0.00$ ), a finding also observed in the case of cross-listing.

The coefficients on two interaction terms, *EX\_CL\*Reconcile* and *EX\_CL\*Disclosure*, are both negative but not statistically significant in the full model where *CIFAR* is present (Model 2). Interestingly, in Model 1, the coefficient of *EX\_CL\*Disclosure* is marginally significant ( $p = 0.098$ ), suggesting that, to some extent, disclosure costs of an exchange-listed firm negatively affect its values. However, when *CIFAR* is introduced into the model, the effect of firm-level disclosure costs disappears, implying that when it comes to valuing a foreign firm cross-listed on a U.S. stock exchange, the disclosure environment of the home country seems more important than the disclosure practices of an individual firm itself. Taken together, it appears that an exchange-listed firm's cost in reconciling its accounting method choice (*Reconcile*) to U.S. GAAP does not affect its valuation; however, to a limited extent, its disclosure practice (*Disclosure*) is recognized by investors.

Note that the impact of *CIFAR* on firms' valuation is positive and significant for both cross-listing and exchange-listing cases, despite the fact that its coefficient is small (0.008). This outcome is consistent with the finding in Hope et al. (2007) that exchange-listed firms from countries with a stronger disclosure environment are valued higher than those from countries with a weaker disclosure environment.

In summary, the reconciliation cost appears to be irrelevant to investors when valuing cross-listed or exchange-listed firms. On the other hand, the disclosure cost reduces the value of cross-listed firms,

suggesting that the disclosure practices of individual firms matter to investors. A cross-listed firm that is willing to disclose more information on its accounting method choices (i.e., has lower disclosure costs) is generally rewarded by the market. However, this impact is diminished when it comes to exchange listing and becomes insignificant when investors factor in the home country disclosure environment (*CIFAR*). It is possible that since exchange-listed firms (Level II and III ADRs) are required to file with the SEC through Form F-6 or Form F-1 and they also provide financial information via Form 20-F reconciliation, investors are aware of their accounting practices. As such, how differently they report under their local GAAPs from the U.S. GAAP (proxy by compliance costs) is not relevant. The lack of finding may also be attributed to potential endogeneity issues in the valuation model, as discussed in previous section.

Despite concerns about endogeneity, the current analysis presents the first piece of evidence regarding the impact of a non-U.S. firm's compliance costs on its valuation. A common criticism of cross-listing premium is that these firms self-select into the cross-listing activity and that certain firm-specific or country-specific characteristics are associated with them, leading to their higher valuations. However, since current analysis includes all potential foreign firms that can choose to cross-list or exchange-list, self-selection does not present a problem.

## SENSITIVITY ANALYSES

One of the limitations of the current study is that it measures compliance costs using a simple count of accounting method choices, which essentially assigns equal weight to every item. In reality, different accounting method choices have different implications for companies, and some should be weighed more heavily than others. To mitigate this issue, I categorize two variables, *reconcile* and *disclosure*, each into three levels: high, medium, and low, based on their respective sample distributions. Specifically, the high group represents firms in the 75th percentile distribution, the low group represents firms in the 25th percentile distribution, and the medium group lies between the 25th and 75th percentiles. Using the medium group as the base, I include the high and low groups in the regression. This treatment acknowledges that firms in the high group should incur compliance costs that differ significantly from those in the low group.

Table 5 presents the results of separate OLS regressions for cross-listing and exchange-listing scenarios. Model 1 has *CL* (*EX\_CL*), to capture the cross-listing (exchange-listing) effects. Using medium group as the base, I include *L\_Rec*, *H\_Rec*, *L\_Dis* and *H\_Dis*, and their respective interactions with *CL* (*EX\_CL*). I also use two country-level variables: *Anti\_D* and *Liquidity*, and two firm-level variables: *Growth* and *ROA*. Model 2 adds country variable, *CIFAR*, to reflect the potential impact of home country disclosure regime on firms' valuations.

The cross-listing regression shows that the coefficient on *CL* is positive but not statistically significant. Evidence suggests that reconciliation costs affect firms' values, since the coefficient on *L\_Rec* is positively significant in Model 2 while the coefficient of *H\_Rec* is negatively significant in Model 1. The coefficients of two interaction terms, *CL\*L\_Rec* and *CL\*H\_Dis*, are significant. Specifically, the coefficient of *CL\*L\_Rec* is positive (0.251), indicating that cross-listed firms incurring low reconciliation costs receive higher values (on average, 0.251) than those in the medium group. The coefficient on *CL\*H\_Dis* is negative (-0.368), indicating that cross-listed firms incurring high disclosure costs receive lower values (on average, 0.368) than those in the medium group. This is consistent with the baseline results.

**TABLE 5**  
**VALUATION IMPACT USING ALTERNATIVE VARIABLE DEFINITIONS**

<b>H1: Cross-Listing</b>			<b>H2: Exchange-Listing</b>		
	Model 1	Model 2		Model 1	Model 2
	Coefficient	Coefficient		Coefficient	Coefficient
<i>Intercept</i>	1.256***	0.661***	<i>Intercept</i>	1.242***	0.697***
<i>CL</i>	0.149	0.155	<i>Ex CL</i>	0.625***	0.615***
<i>L Rec</i>	0.057	0.078*	<i>L Rec</i>	0.065*	0.085**
<i>H Rec</i>	-0.066*	-0.063	<i>H Rec</i>	-0.066*	-0.062
<i>L Dis</i>	0.025	0.004	<i>L Dis</i>	0.021	0.001
<i>H Dis</i>	-0.025	-0.021	<i>H Dis</i>	-0.029	-0.025
<i>CL*L Rec</i>	0.247*	0.251*	<i>Ex CL*L Rec</i>	0.656***	0.656***
<i>CL*H Rec</i>	0.024	0.059	<i>Ex CL*H Rec</i>	0.455	0.477
<i>CL*L Dis</i>	-0.051	-0.062	<i>Ex CL*L Dis</i>	-0.161	-0.167
<i>CL*H Dis</i>	-0.388**	-0.368**	<i>Ex CL*H Dis</i>	-1.061***	-1.034***
<i>CIFAR</i>		0.009***	<i>CIFAR</i>		0.008***
<i>Anti D</i>	-0.026*	-0.043***	<i>Anti D</i>	-0.024*	-0.040***
<i>Liquidity</i>	0.008	0.033***	<i>Liquidity</i>	0.011	0.034
<i>Growth</i>	0.001**	0.001**	<i>Growth</i>	0.001**	0.001**
<i>ROA</i>	0.053***	0.052***	<i>ROA</i>	0.052***	0.052***
<b>Adjusted R<sup>2</sup></b>	<b>0.129</b>	<b>0.130</b>		<b>0.134</b>	<b>0.135</b>

\*\*\*, \*\*, \* indicate significance level, respectively, at 0.01, 0.05 and 0.1 level.

The regression on exchange-listing shows that the coefficient on *EX\_CL* is positively significant, confirming the existence of exchange-listing premium. Similar to the cross-listing scenario, the coefficients of the two interaction terms, *EX\_CL\*L\_Rec* and *EX\_CL\*H\_Dis*, are significant. Specifically, the coefficient on *EX\_CL\*L\_Rec* is positive (0.656), suggesting that exchange-listed firms incurring low reconciliation costs receive higher values (on average 0.656) than those in the medium group. The coefficient of *EX\_CL\*H\_Dis* is negative (-1.034), suggesting that exchange-listed firms incurring high disclosure costs receive lower values (on average 1.034) than exchange-listed firms in the medium group. This is largely in agreement with the baseline outcome.

In summary, the sensitivity analyses provide evidence that lower reconciliation costs increase the values of cross-listed and exchange-listed firms, while higher disclosure costs decrease the values of cross-listed and exchange-listed firms. Interestingly, the effect of reconciliation cost is present when the focus is on the low 25-percentile cost group. The impact of firm-level disclosure costs continues to hold, even after the strength of the home country's disclosure regime is considered. This is consistent with the evidence obtained from the baseline models.

## CONCLUSIONS AND LIMITATIONS

This paper examines the capital market consequences of the costs that foreign firms incur in complying with U.S. GAAP in order to list their shares in the U.S. Prior studies have recognized various benefits associated with cross-listing activities, particularly in the form of a higher valuation, known as the cross-listing premium. Different from existing research, current study looks into the issue from the cost standpoint by focusing on one major cross-listing cost, U.S. GAAP compliance cost, and measuring it at the firm level. This approach offers a new perspective on understanding the source of cross-listing premiums and complements existing research by providing a more comprehensive measure of U.S. GAAP compliance.

The valuation analyses confirm the existence of cross-listing and exchange-listing premiums. Regarding reconciliation costs, they do not appear to affect the values of cross-listed or exchange-listed firms in the base models; however, evidence of their impact becomes apparent when sensitivity analyses are conducted. With respect to disclosure cost, it is found to negatively affect the values of cross-listed firms; i.e., cross-listed firms that disclose less accounting information than U.S. accounting rules require, thus incurring higher disclosure costs, are valued less by the market. To some extent, exchange-listed firms that make less disclosures are also valued less by the market. This result holds when focusing on firms with high disclosure costs in the sensitivity analyses, even after controlling for the home country disclosure environment. The overall finding highlights the role that disclosure costs play in the valuation of cross-listed firms, consistent with the general theme in the literature that disclosure matters.

Current study is subject to a few limitations. First, since the data of accounting method choices were obtained from the Worldscope database, only 13 items were made publicly available, which does not fully capture the reconciliation cost. Similarly, the self-constructed disclosure index does not cover the complete list of disclosure items. Second, the endogeneity issue remains a concern for valuation models, although it appears that there is no strong multicollinearity problem, as indicated by the VIF analysis.

Despite the limitations, the current study provides new evidence on the source of the cross-listing premium. The result demonstrates that improvement in a firm's information environment can increase its value, beyond the impact of disclosure regime of the domiciled country. With the rapid growth of capital market integration worldwide, this study contributes to the understanding of the role accounting plays in firms' cross-listing activities.

## ENDNOTES

1. Form F-1 is a full-disclosure, long-form registration statement, analogous to the domestic Form S-1, which does not permit incorporation by reference, and therefore is the lengthiest, most detailed, and most expensive form of registration statement to prepare (Jensen 1994).
2. Form 20-F provides two sets of financial statement rules: Item 17 and Item 18. For Item 17, disclosures that are required by U.S. GAAP but not local GAAP need not be furnished, such as the segment information. Item 18 is required for securities offerings (Level III ADRs) and requires a more thorough adaptation of the financial statements to U.S. GAAP than Item 17.
3. Daimler-Benz is the first German company to list on the NYSE. Many German companies were upset with Daimler-Benz for reconciling its financial statements to comply with U.S. GAAP. The Chief Financial Officers of some major German companies (Bayer, Siemens) stated that the listing was detrimental to the negotiations between the SEC and EU and German authorities over the potential adoption of mutual recognition and acceptance of German GAAP (Radebaugh et al., 1995).
4. This metric is validated by the authors and is further used in Bradshaw, Bushee and Miller (2004) which examines the relation between foreign firms' accounting method choices and the investment made by U.S. institutional investors in foreign firms.
5. According to La Porta et al. (1998), the anti-director index is formed by adding 1 when (1) the country allows shareholders to mail their proxy vote to the firm, (2) shareholders are not required to deposit their shares prior to the general shareholders' meeting, (3) cumulative voting or proportional representation of minorities in the board of directors is allowed, (4) an oppressed minorities mechanism is in place, (5) the minimum percentage of share capital that entitles a shareholder to call for an extraordinary shareholders' meeting is less than or equal to 10% (the sample median), or (6) shareholders have preemptive rights that can be waived only by a shareholders' vote. The index ranges from zero to six.
6. Per communication with Worldscope, it stopped collecting information on accounting policies as of August 200, except for three items: accounting method for long term investment > 50%, accounting standards followed, and auditor's opinion. Hence, the June 2001 CD is the latest version I can rely on to compute firms' U.S. GAAP compliance costs.
7. In order to test the statistical significance of the effect of *CL*, *Reconcile*, *Disclosure* and the interaction terms on *Tobin's q*, I perform the joint F tests. All the tests show that these terms are jointly significant.

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**APPENDIX 1: CLASSIFICATION OF ACCOUNTING PRACTICES AS CONSISTENT OR INCONSISTENT WITH US GAAP**

	<i>U S GAAP</i>	
	<i>Compliant</i>	<i>Not compliant</i>
1. Accounting for goodwill	Amortized Amortized and/or taken to reserves	Not amortized, expensed when incurred Written off at management discretion Taken to reserves
2. Accounting for other intangibles/deferred charges	Amortized	Capitalized, not amortized Expensed when incurred Capitalized, written off at management discretion Taken to reserves
3. Accounting for long term financial leases	Capitalized and amortized	Expensed Some capitalized and some expensed
4. Accounting method for long term investments less than 20%	Cost Lower of cost and intrinsic value	Equity Market value
5. Accounting method for long term investments 21-50%	Equity Equity but consolidated where significant influence Equity and cost depending on significant influence	Cost Cost but consolidated where significant influence Equity and proportional consolidation
6. Accounting method for long term investments greater than 50%	All subsidiaries are consolidated Consolidation for significant subsidiaries - others are on an equity basis Consolidation for significant subsidiaries, others are on a cost basis	Domestic subsidiaries consolidated - others on a cost basis Domestic subsidiaries consolidated - others on a equity basis Foreign subsidiaries consolidated - others on a cost basis Foreign subsidiaries consolidated - others on a equity basis No consolidation - cost basis (parent company only) No consolidation - equity basis (parent company only)
7. Deferred taxes recorded	Yes	No - taxes paid as incurred
8. Financial statements cost basis	Historical cost entirely Historical cost with price-level adjustment or revaluation of specific accounts	Historical cost with supplementary current cost financial information Current cost statements entirely Modified historical cost with supplemental current cost financial information Current cost with supplemental historical cost financial information
9. Funds definition on statement of changes in financial position	Cash Modified cash Prior to 1989, other definitions acceptable under APB 19	Working capital Modified working capital Unique definition Net borrowings Net liquid assets

10. Marketable securities valuation	Lower of cost or market Historical cost Subsequent to 1993, current market value and cost with periodic valuation acceptable under SFAS115	Current market value Moving average Weighted average Periodic average Cost with periodic revaluation
11. Research and development costs	Expensed currently For computer companies in SIC codes 5054, 7371, or 7372, Capitalized and amortized later or Some expensed some capitalized are considered consistent with US GAAP	Capitalized and amortized later Expensed and capitalized later Some expensed - some capitalized
12. Starting line of statement of changes in financial position	Net income, bottom line Prior to 1989, Net income before minority interest, Net income before extraordinary items, and other definitions were acceptable under APB 19.	Net income before net allocations to reserves Net income before minority interest and taxes Unique Sales Sales plus other operating income Operating income Net income before interest Cash receipts Operating income before depreciation
13. Treasury stock location on balance sheet	Deduction from shareholders' equity	Long term investment Other asset Current assets

Source: Bradshaw and Miller 2005; Bradshaw, Bushee and Miller 2004

## APPENDIX 2: COMPANY SPECIFIC ACCOUNTING POLICIES

Accounting for foreign currency transaction gain/loss  
Accounting for goodwill  
Accounting for long term financial leases  
Accounting for other intangibles/deferred charges  
Accounting method for long term investment <20%  
Accounting method for long term investment 21-50%  
Accounting method for long term investment >50%  
Accounting standards followed  
Acquisition method  
Contingent liabilities disclosed  
Currency of financial report  
Deferred taxes recorded  
Depreciation method  
Discretionary reserves  
Earnings per share numerator used for computed ratio  
Financial statements cost basis  
Foreign currency translation method  
Funds definition on statement of changes in financial position  
Inventory costing method

Marketable securities classification  
 Minority interest effect  
 Pension fund contribution  
 Research & development costs  
 Reason for extraordinary items  
 Reason for changes in financial statement  
 Treasury stock gain/loss  
 Treasury stock location on balance sheet  
 Starting line- changes in financial position  
 Pension fund management

**Other Disclosure Items**

Auditor  
 Auditor's opinion

**APPENDIX 3: LIST OF CIFAR ANNUAL REPORT VARIABLES (HOPE 2003)**

<p><b>A: General information</b>            Address/Telephone/Fax/Telex            Product Segment            Geographic Segment            Management Information            Subsidiaries Information            Future Plans/Chairman or CEO's Statement            Number of Employees            Fiscal Year-End</p> <p><b>B: Income statement</b>            Consolidated Income Statement            Cost of Goods Sold            Complete Income Statement            Sales            Selling, General and Administrative Expenses            Operating Income            Foreign Exchange Gains/Losses            Extraordinary Gains/Losses            Income Tax Expense            Minority Interest            Net Income Reported</p> <p><b>C: Balance sheet</b>            Complete Balance Sheet            Current Assets Separated from Fixed Assets            Current Liability Separated from LT Liability            Owners' Equity Separated from Liability            Separation of Non-Equity Reserves and Retained Earnings            Cash and Cash Equivalents            Accounts Receivable            Inventories</p>	<p><b>E: Accounting policies</b>            Accounting Standards            Financial Statements Cost Basis            50% Long-Term Investments            Starting Point for Funds Statement            Research &amp; Development Costs            Pension Costs            Reasons for Extraordinary Items            Inventory Costing Method            20% Long-Term Investments            21-50% Long-Term Investments            Acquisition Method            Accounting for Goodwill            Deferred Taxes            Outside Manager of Pension Funds            Long-Term Financial Leases            Foreign Currency Translation Method            Foreign Currency Translation Gains/Losses            Discretionary Reserves            Minority Interest            Contingent Liabilities</p> <p><b>F: Stockholders' information</b>            Dividends per Share            Earnings per Share            Number of Shares Outstanding            Multiple Shares            Par Value            Total Dividends            Stock Split/Dividend/Rights Issues            Stock Price            Stock Exchange Listing            Volume Traded            Diluted Earnings per Share</p>
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Current Assets Fixed Assets on Asset Side Goodwill and Other Intangibles Total Assets Can Be Derived Shareholders' Equity Changes Appropriation of Retained Earnings  <b>D: Funds flow/cash flow</b> Funds Flow Statement Complete Funds Flow Statement Funds from Operations Funds Definition Cash Flow Statement	Quarterly/Interim Dividends Changes in Capital Different Dividends for Multiple Classes of Shares EPS for Multiple Classes of Shares Significant Shareholders Composition of Shareholdings  <b>G: Supplementary information</b> Earnings per Share Numerator Earnings per Share Denominator Notes to Accounts Disclosure of Subsequent Events Remuneration of Directors and Officers Research & Development Costs Capital Expenditure List of Board Members and Their Affiliations Exports; Financial Summary
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#### APPENDIX 4: VARIABLE DEFINITIONS

Variable	Definition
<i>CL</i>	= 1 if the firm is a cross-listed firm, and 0 otherwise
<i>EX_CL</i>	= 1 if the firm is an exchange-listed firm, and 0 otherwise
<i>Reconcile</i>	= A firm's reconciliation costs measured by its compliance with U.S. GAAP on 13 accounting method choices, computed as the sum of noncompliant items divided by 13.
<i>Disclosure</i>	= A firm's disclosure costs measured by the availability of 31 accounting method choices, computed as the sum of non-disclosed items divided by 31.
<i>CIFER</i>	= A country-level disclosure index which rates companies' annual reports for their inclusion or exclusion of 85 items
<i>Anti_D</i>	= Index that aggregates six different shareholder rights, ranging from 1 to 6 (highest)
<i>Liquidity</i>	= The dollar value of shares traded divided by the average market capitalization in 1997 (IFC Emerging Markets Factbook 1998)
<i>Growth</i>	= net sales growth as of 1999 (in percentage)
<i>ROA</i>	= Net income divided by total assets as of 1999 (in percentage)
<i>Tobin's q</i>	= (total assets – book value of equity + market value of equity) / total assets as of 1999
<i>Industry</i>	= Industry membership, 1-digit SIC code
<i>L_Rec</i>	= 1 if <i>Reconcile</i> is below the 25 percentile distribution, and 0 otherwise
<i>H_Rec</i>	= 1 if <i>Reconcile</i> is above the 75 percentile distribution, and 0 otherwise
<i>L_Dis</i>	= 1 if <i>Disclosure</i> is below the 25 percentile distribution, and 0 otherwise
<i>H_Dis</i>	= 1 if <i>Disclosure</i> is above the 75 percentile distribution, and 0 otherwise