

The Effect of Financial Systems on Earnings Management Among Firms
Reporting Under IFRS¹

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ABSTRACT

This study examines the relation between financing system and earnings management and changes in the patterns of earnings management activities over time. Prior research suggests that managers are more likely to manage earnings in a credit financing system because the purpose of the financial reporting in this credit environment is to protect creditors by prudently calculating distributable profit. In addition, multinational enterprises' financial reporting tends to be anchored in their home country's practices and responsive to their national requirements. Using 121 firm-year observations of non-U.S. firms reporting under IFRS, we find some evidence that firms from credit financing systems manage earnings more than firms from equity financing systems. We find that firms in a credit financing environment report 1.6% higher in absolute discretionary accruals than equity firms. However, we did not find evidence that overall earnings management activities have decreased as the IASB's Comparability/Improvements Project went into effect after 1995. This finding suggests that the IASB has not been effective in narrowing down the international differences in accounting practices and providing comparable financial statements to the public.

Keywords: earnings management, IFRS, comparability, financing systems

I. Introduction

Previous research suggests that international accounting differences caused by institutional variety across countries affect the value relevance of accounting information (Hung 2001; Ali and Hwang 2000; Ball et al. 2000; Pope and Walker 1999; Joos and Lang 1994; Alford et al. 1993; Amir et al. 1993). However, few studies investigate whether the adoption of a common GAAP (e.g., the International Financial Reporting Standards³ (IFRS)), overcomes the underlying institutional differences in financial reporting for firms domiciled in different countries and thereby making financial reporting under IFRS comparable⁴.

Our sample includes international firms, listed in the U.S., reporting under IFRS and filing a form 20-F which includes reconciliation to U.S. GAAP.⁵ We examine whether there is a difference in earnings management activities across the IFRS user companies domiciled in either the countries where equity financing system dominates or those where credit financing system dominates.

In addition, we investigate whether earnings management activities for firms reporting under IFRS decrease as an effect of IASB's ongoing revisions to increase the comparability of financial statements and to improve the quality of accounting earnings. Our results provide evidence for the IASB about the effects of their efforts toward harmonization and assist the U.S. Securities and Exchange Commission (SEC) in their

³ Previously known as the International Accounting Standards (IAS).

⁴ Joo and Lang (1994) investigate similar issue using a sample of European firms reporting under EU Fourth Directive.

⁵ We are currently examining the same issue using all IFRS firms.

ongoing assessment of IFRS to allow foreign registrant to raise capital in the U.S. without being required to file the Form 20-F.

Institutional factors specific to the credit financing system suggest that managers are more likely to manage earnings in a strong credit financing system compared to managers in a strong equity financing system. However, do these differences disappear when the accounting standards originating from a credit finance system are no longer used? Previous research suggests that environmental/institutional differences across countries tend to persist in spite of attempts to converge accounting practices by adopting common accounting standards (Joos and Lang 1994; Alford et al. 1993; Meek and Saudagaran 1990). Therefore, we predict that firms from strong credit financing system manage earnings more than firms from strong equity financing system.

The IASB launched the Comparability/Improvements Project in 1987 in part to revise the IFRS in response to the criticism of its standards for allowing too much flexibility of accounting choices. Davis-Friday and Rueschhoff (2001) indicate that nearly 14% of the IASB's earlier 22 standard s allow flexibility in practice. The revisions became effective in 1995 and resulted in a significant reduction in the number of accounting choices allowed (Leuz 2003: 448). In addition, in 1995, the IASB and the IOSCO agreed that further reduction in accounting choices was necessary before an adequate level of comparability among firms reporting under IFRS for cross-border listings was possible. This resulted in more revisions of IFRS, and less available accounting choices allowed. With these ongoing efforts to achieve international accounting harmonization, an issue of interest is whether earnings management activities

by firms applying IFRS decrease after 1994 as the IFRS provisions allow less and less flexibility in accounting methods and choices.

We hypothesize that firms in a strong credit financing environment have larger earnings management activities, via discretionary accruals, than firms in a strong equity financing environment. We also hypothesize that the overall earnings management activities will decrease as IASB's Comparability/Improvements Project went into effect in 1995 and reduces the flexibility in IFRS standards.

Using a sample of 121 non-U.S. firm-year observations, we test our hypotheses in a multivariate model controlling for potential correlated factors. Discretionary accruals are estimated using a variant of Jones (1991) model. The results support our first hypothesis. We find that firms in a strong credit financing environment report 1.6% higher in absolute discretionary accruals than strong equity firms. However, the results do not support hypothesis 2, which predicts a reduction in earnings management activities after 1994 when IASB's Comparability projects went into effect in 1995. This suggests that the IASB's project has not been effective in narrowing down the international differences in accounting practices and providing comparable financial statements to the public.

Previous research on whether accounting practices among firms from different national institutional backgrounds converge after adopting a common set of accounting standards has shown inconclusive results (Ashbaugh and Pincus 2001; Auer 1996; Joos and Lang 1994). Considering IASB's goal is to develop an internationally acceptable set of accounting standards that will generate more comparable financial information across national borders, this study contributes to the existing literature by examining whether

there is a difference in the degree of earnings management between firms domiciled in countries with different institutional factors that are reporting under a common GAAP. Additionally, this study contributes to the international accounting research by providing insight on how differences in countries' purpose of accounting impact the application of IFRS.

The remainder of the paper is organized as follows. Section II develops the hypotheses, and section III discusses the sample selection and descriptive statistics. Section IV presents the methodology focusing on the discretionary accrual proxy. Empirical results are presented in section V and summary and conclusions are presented in the final section of the paper.

II. Hypotheses Development

Different types of financing system result in the international differences in the purpose of financial reporting (Nobes 1998). We examine two types of financing systems in this study: credit-based system and equity-based system. Strong credit financing systems are characterized by weak shareholder protection and weak public capital markets (Ball et al. 2000; Hung 2001). Government or dominant financial institutions play a crucial role in this environment. Accounting standards developed in such an environment are typically allowing greater discretion to managers to manage the timing of incorporation of gains and losses in the reported income (Ball et al. 2000). Furthermore, conformity between financial reporting income and taxable income is often required (Ali and Hwang 2000).

On the contrary, in an equity system, financiers are not members of the board of directors and do not have a privileged relationship with the firm. They are usually private

individual investors and some institutions. This group of capital providers is large and diverse. Accounting in this context has a strong shareholder/capital market orientation and has the purpose of enabling outside users to predict future cash flows (Nobes 1998: 167). Investors rely on public disclosure for information needs.

The conceptual framework used by the IASB has the purpose of enabling outside users to predict future cash flows (Nobes 1998: 167). The IASB issues IFRS for the purposes of generating more comparable, transparent, and high quality financial statements and of harmonizing accounting reporting practices across country borders. However, the question is whether the adoption of a common GAAP (e.g., the IFRS), will overcome the underlying institutional differences in financial reporting for firms domiciled in different countries and thereby making financial reporting under IFRS comparable.

Prior research suggests that environmental differences across national borders affect a country's financial reporting and accounting practices (Hung 2001; Ali and Hwang 2000; Ball et al. 2000; Pope and Walker 1999; Alford et al. 1993). However, the findings on whether accounting practices among firms from countries with different environmental factors converge after adopting a common set of accounting standards are mixed (Ashbaugh and Pincus 2001; Auer 1996; Joos and Lang 1994).

Our first hypothesis relates to the differences in the degree of earnings management among credit and equity firms applying IFRS. We focus on the firms applying a common set of accounting standards, but with different financing systems. We examine whether a common set of standards results in an increased congruency of

earnings management behavior among sample firms domiciled in different types of financial systems.

Joos and Lang (1994) and Alford et al. (1993) suggest that country-specific differences for purpose of financial reporting persist in spite of attempts to converge accounting practices by adopting uniform accounting standards. Hung (2001) examines the impact of accrual accounting on value relevance of accounting measures in countries with different levels of shareholder protection. Hung finds that managers in countries with weak shareholder protection are more likely to behave opportunistically with accrual accounting which has a negative impact on the value relevance of financial reporting (p. 402). Ball et al. (2000) examine the international differences in the demand for accounting income in two types of legal systems: the code law vs. the common law systems. This classification between the code and common law governance model matches the environments that result in credit and equity financing systems. Ball et al. (2000, p. 3) indicate that in code law countries, “the demand for accounting income is influenced more by the payout preferences of agents for labor, capital and government, and less by the demand for public disclosure”.⁶ Firms in both common-law countries and code-law countries have incentives to reduce volatility in accounting income. However, the political influence on accounting standard setting in code-law countries reduces the demand for a timely and conservative reported income (Ball et al. 2000). Consequently,

⁶ Ball et al. (2000, p.3) explain that “governments establish and enforce national accounting standards, typically with representation from major political groups such as labor unions, banks and business associations... Current-period accounting income then tends to be viewed as the pie to be divided among groups as dividends to shareholders, taxes to governments, and bonuses to managers and perhaps also employees.”

code law accounting standards tend to give management greater latitude in timing income recognition to reduce volatility through choices and methods in accounting standards.

In summary, previous research suggests that credit firms are more prone to manipulate earnings than equity firms due to their underlying differences in purposes for financial reporting resulting from differences in their financing systems and governance models. We expect the strength of equity market to have an impact on firm's earnings management. Following the extant literature, we use discretionary accruals as a proxy for earnings manipulation (Dechow and Dichev 2002). Our first hypothesis is:

Hypothesis 1. Ceteris paribus, credit firms report relatively higher discretionary accruals compared to equity firms.

Meek and Saudagaran (1990, p. 145) claim that “the variety of approaches used by companies – anchored in the domestic practices of their respective home countries – have been the impetus for efforts to harmonize accounting internationally.” This argument is consistent with the criticism of earlier IFRS for allowing a great degree of flexibility in accounting choices and methods in order to gain international acceptance.

Two developments may suggest that the harmonization of both accounting standards and practices is in process. First, in 1987, the IASB initiated the Comparability/Improvements Project in response to the criticism to reduce the flexibility in IFRS standards and the project went into effect in 1995 (Leuz 2003, p. 448; Meek and Saudagaran 1990, p. 170).

Second, with the increasing desire to raise capital in competitive international financial markets, companies are faced with pressure from the markets to voluntarily improve communication with market participants (Meek and Saudagaran 1990). The

purpose of accounting in the global capital markets is to fairly present company performance and to predict future cash flows. We argue that despite the environmental differences between the credit- and equity-firms, these developments together with the capital market focus in accounting will smooth out national differences over time, and result in a similar earnings process in both types of firms. All companies have an incentive to engage in earnings management although institutional differences across countries affect the degree of this behavior. Therefore, we hypothesize that the earnings management activities among all companies decrease after 1994 as IFRS removes flexibility in accounting principles.

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Hypothesis 2: The earnings management activities among all our sample firms decrease post-1994.

III. Sample Selection and Descriptive Statistics

Sample Selection

The sample consists of non-U.S. firms found in the Lexis/Nexis database.⁷ The classification into credit and equity countries is based on a combination of two variables taken from Table II of La Porta et al. 1997 (p. 1138): rule of law and anti-director rights, and one variable taken from Table 2 Hung 2201 (p. 408): tax-book conformity index.

We include firms that primarily report under IFRS and that employ accounting policies that conform to IFRS and reconcile to U.S. GAAP via Form 20-F filings. This means

⁷ As a first step, we have chosen to use firms reporting under IFRS and listed in the U.S. due to data constraints. The effect of this choice potentially drives against our predictions because credit firms are more likely to adopt an equity oriented type of behavior in order to raise capital in the U.S. market.

that some firms included in this study are using their domestic GAAP, but that this GAAP conforms to IFRS. We have chosen to include these firms in our sample for the following reason. If harmonization of accounting standards results in an increased comparability, this should be evident by fewer firms being able to report under their own domestic GAAP and IFRS at the same time. To include firms that primarily report under IFRS would exclude almost all firms but those from countries that do not have a comprehensive domestic GAAP and would considerably reduce this study's generalizability (Davis-Friday and Rueschhoff 2001: 49). Therefore all firms that are using accounting policies conforming to IFRS and reconcile to U.S. GAAP in their Form 20-F filings are included in the sample. The initial sample contains 27 firms from 11 countries between 1987 and 2001.

Table 1 includes an excerpt of La Porta et al. 1997 table II; it also summarizes the categorization of all countries into the equity or credit category in the last column of the table.

Table 1 about here.

Italian firms are excluded from the sample since in Italy IFRS is adopted only in the absence of a standard under the National Councils of the Italian Accounting Profession. Consequently, Italian firms report under a mix of Italian GAAP and IFRS as opposed to in conformity with IFRS (Harris and Muller 1999: 298).

We exclude one financial institution with SIC codes between 6000 and 6999 because it is difficult and problematic to compute discretionary accruals for financial service firms. We also exclude four utilities companies with SIC codes between 4000

and 4999 because regulated companies may have different incentives to manage earnings from the companies in unregulated industries.

Standard and Poor's Research Insight provides the financial data needed to estimate the discretionary accruals and the data for many other independent variables. Before eliminating firm-years due to insufficient data from Research Insight, some of the missing data was manually collected from annual reports and 20-F filings. In total, these procedures yielded 123 firm-year observations. Table 2 provides a summary of the sample selection procedures.

Table 2 about here.

We use a cross-sectional time-series based on Jones' (1991) regression model to estimate the discretionary accruals for each sample firm.⁸ The model's parameters are estimated by industry with the same one-digit SIC code during the sample period.⁹ We estimate three time series one-digit industry regressions. The number of firm-year observations used in each industry model ranges from 33 to 50.

Descriptive Statistics

Table 3 reports descriptive statistics of the financial variables for our sample firms. Columns A and B present financial variables for the credit and equity firms, respectively, and Column C presents the results of the test comparing the two groups. Table 3 indicates that total assets are significantly larger in the credit firms. There is no difference in net income before extraordinary items, operating cash flows and long term

⁸ Due to small sample size, it is not feasible to estimate the cross-sectional variant of the Jones model for each sample year to obtain the parameter estimates.

⁹ Preferably, the model's parameters would be estimated by industry with the same 2-digit SIC code, but this is not a realistic alternative for this study due to the small sample size with a wide spread two-digit SIC codes.

debt across the groups. Comparability in operating cash flows across the sample groups is desirable because Dechow et al. (1995) suggest that Jones (1991) model may be sensitive to extreme measures of cash flows. Total accruals are statistically different between credit and equity groups at less than the 1 percent level ($p = 0.009$). Total accruals are less negative among the equity firms. The mean absolute value of total accruals deflated by lagged total assets is statistically larger among the equity firm at the 5 percent level.

Table 3 about here.

In conclusion, the descriptive statistics suggest differences between the credit and equity samples with respect to size, total accruals and the absolute value of total accruals.

IV. Methodology

Discretionary accruals estimation

We focus on discretionary accruals as the proxy for earnings management. Discretionary accruals are estimated by using a variant of the Jones (1991) model to separate total accruals into discretionary and nondiscretionary components.¹⁰ The model's parameters are estimated by industry with a maximum of fifteen years of time-series panel data. Jones (1991) model estimates nondiscretionary accruals as a function of the change in net sales and the level of property, plant and equipment (PPE). The changes in net sales and PPE control for expected or the economic based components in

¹⁰ Jones (1991) model has been used extensively in the earnings management literature. Other studies that have used the same model are: DeFond and Jiambalvo, 1994; Subramanyam, 1996; DeFond and Subramanyam, 1998; Becker et al., 1998; Teoh et al., 1998a, b; Guidry et al., 1999; DuCharme et al., 2001; Klein, 2002.

total accruals.¹¹ We estimate discretionary accruals as total accruals minus nondiscretionary accruals. The accrual model adopted from Jones (1991) is shown below:

$$TAC_{it} / TA_{it-1} = b_0(1 / TA_{it-1}) + b_1(\Delta Sales_{it} / TA_{it-1}) + b_2(PPE_{it} / TA_{it-1}) + \varepsilon_{it} \quad (1)$$

Where:

TAC_{it} = total accruals for firm “ i ” at time “ t ”;

$\Delta Sales$ = change in net sales from time “ $t-1$ ” to time “ t ”;

PPE = gross property, plant and equipment firm “ i ” at time “ t ”; and

TA_{it} = total assets firm “ i ” at time “ t ”;

Total accruals are defined as income before extraordinary items minus operating cash flows and all variables are deflated by lagged total assets to reduce heteroscedasticity.¹² Next, we calculate the discretionary accruals defined as:

$$DA_{it} = TAC_{it} / TA_{it-1} - \{b_0[1 / TA_{it-1}] + b_1[\Delta Sales_{it} / TA_{it-1}] + b_2[PPE_{it} / TA_{it-1}]\} \quad (2)$$

Where b_0 , b_1 , and b_2 are the fitted coefficients from Eq. (1).

Warfield et al. (1995) indicate that the absolute value of (unsigned) discretionary accruals is a good proxy for the combined effect of income-increasing and income-decreasing earnings management. We have no a priori prediction of either systematic

¹¹ Subramanyam (1996) and Bartov et al. (2000) find that the cross-sectional Jones models are better specified to detect earnings management than other cross-sectional and time series counterparts. Dechow et al. (1995) and Guay et al. (1996) also find that the time-series Jones models perform the best in detecting abnormal accruals than other time-series models.

¹² This cash flow statement approach is different from the balance sheet approach (total accruals = change in current assets – change in cash and cash equivalents – change in current liabilities + change in debt included in current liabilities – depreciation and amortization expense) to compute total accruals. Hribar and Collins (2002) argue that the balance sheet approach is inferior in certain circumstances to a cash flow statement approach.

upward or downward earnings management activity in our study. Therefore, we follow Warfield et al. (1995) and use the unsigned (absolute value of) discretionary accruals as a proxy for earnings management in our study.¹³

Approach

Our study compares the discretionary accruals across our credit and equity samples and also examines whether there is a change in the pattern of earnings management activities after 1994. We conduct both the univariate and the multivariate tests to compare discretionary accruals across our credit and equity samples. The multivariate test is also used to examine whether there is a change in the pattern of earnings management after the IASB Comparability project went into effect.

Many earnings management studies have raised the concern of measurement error in discretionary accruals (see e.g., Dechow et al., 1995; Guay et al., 1996; Kasznik 1999; Bartov et al. 2000; Dechow and Skinner, 2000; Kothari et al., 2001; Klein 2002). The test of earnings management may yield biased results if measurement error in the proxy for discretionary accruals is correlated with omitted variables. The correlated variable problem potentially leads to erroneous inferences regarding the existence of earnings management when none actually exists. To address this problem, we, in the multivariate test, control for factors that our two groups of sample firms have shown differences, factors that are associated with our partitioning variable, and other factors that prior studies have reported association with discretionary accruals.¹⁴

¹³ Other studies that have used the unsigned discretionary accruals include Becker et al., 1998; Bartov et al., 2000; Klein 2002.

¹⁴ Kasznik 1999, Kothari et al., 2001, and Klein 2002 use the matched-portfolio technique to control for omitted correlated variables.

Table 3 indicates size differences across the two groups. Since size may surrogate for other omitted variables, we include the log of lagged total assets to capture any size-related, cross sectional differences in accruals. Table 3 also indicates that the absolute value of total accruals differs across our two sample groups. We include the absolute value of total accruals in the multivariate test to control for both the difference across our sample groups and the possibility that firms with larger absolute values of total accruals also have larger discretionary accruals (Becker et al. 1998).

Table 4 presents the correlation analysis of absolute discretionary accruals and the partitioning variable (credit) with possible correlated variables. Panel A shows that absolute total accruals are significantly correlated with lagged total assets, absolute net income and absolute change in net income at less than 1% level. Panel A also shows that absolute discretionary accruals are significantly correlated with absolute value of total accruals, lagged total assets, absolute net income and absolute change in net income at less than 1%, 5%, 1% and 1% levels, respectively. The earnings variables control for the firm's inherent earnings process and take into account the reversal of accruals (Kothari et al. 2000).¹⁵ Panel B of table 4 shows that our partitioning variable – credit – is significantly correlated at the 5% and less than 1% level with the absolute total accruals and log of lagged assets, respectively.

Table 4 about here.

¹⁵ Other studies include lagged accruals in the discretionary accruals model to control for the reversal of accruals (see e.t., Guay et al. 1996, and Beneish 1997).

Prior research also suggests that extreme earnings process (the absolute change in income before extraordinary items divided by lagged total assets)¹⁶, and leverage (total debts divided by lagged total assets) are positively associated with discretionary accruals, and operating cash flows are negatively associated with discretionary accruals (Dechow, 1994; DeFond and Jiambalvo, 1994; Warfield et al., 1995; Dechow et al., 1995; Dechow et al., 1996; Becker et al., 1998; Bartov et al., 2000; Klein, 2002). As panel A of table 4 shows, absolute discretionary accrual is negatively correlated with operating cash flows at the 6% level, with log of lagged firm assets at the 1% level, and positively correlated with absolute change in net income at less than the 1% level.

Therefore, in addition to the univariate test of hypothesis 1, we also perform a multivariate test that includes control variables for the log of lagged assets (size), the absolute value of total accruals, the long term debt (leverage), the operating cash flows and the absolute change in net income before extraordinary items. The multivariate model, which is estimated using panel data from 1987-2001, is shown below.

$$\begin{aligned}
 AbsDA_{i,t} = & \alpha + \beta_1 Credit_{i,t} + \beta_2 A1994 + \beta_3 OPCASH_{i,t} + \beta_4 Assets_{i,t-1} \\
 & + \beta_5 Debt_{i,t} + \beta_6 AbsTAC_{i,t} + \beta_7 AchNI_{i,t} \varepsilon_{i,t}
 \end{aligned} \tag{3}$$

Where:

AbsDA_{it} = Absolute value of discretionary accruals for firm “i” at time “t”, as measured in equation (2);

¹⁶ The inclusion of the earnings variable in our multivariate model also controls for the reversal of prior year accruals (Guay et al. 1996; Beneish 1997). In addition, the other earnings variable: absolute net income highly correlates with AchNI; therefore we do not include absolute NI in the multivariate model.

- Credit_{it} = 1 if firm "i" is categorized as credit and 0 for equity;
- A1994 = 1 if the firm-year observation occurs after 1994 and 0 otherwise;
- OPCASH_{it} = Operating cash flows (Compustat item #308) deflated by lagged total assets (Compustat item #6) for firm "i" at time "t";
- Assets_{it-1} = Natural log of lagged total assets (Compustat item #6) for firm "i" at time "t";
- Debt_{it} = Long Term Debt deflated by lagged total assets for firm "i" at time "t";
- AbsTAC_{it} = Absolute value of total accruals. Total Accruals are the difference between net income before extraordinary items (Compustat item #18) and cash flows from operations (Compustat item #308), deflated by lagged total assets (Compustat item #6) for firm "i" at time "t";
- AchNI_{it} = Absolute value of the change in income before extraordinary items between t-1 and t (Compustat item #18), deflated by lagged total assets (Compustat item #6) for firm "i" at time "t"; and
- ε_{it} = error term for firm "i" at time "t."

Discretionary accruals are estimated by using a variant of the Jones Model (Jones 1991), with the maximum of fifteen years of panel data, as described earlier. Data for the control variables are obtained and computed from the Compustat database and manual collections from 20-F forms and annual reports. Firm-year observations with missing information are dropped from our analysis.

Our first hypothesis predicts credit firms report higher absolute discretionary accruals compared to equity firms. If β_1 (Credit) is positive and statistically significant, absolute value of discretionary accruals are larger in credit firms. The second hypothesis

predicts a reduction in earnings management activities after 1994 as IFRS removes flexibility in accounting principles. If β_2 (A1994) is negative and statistically significant, absolute value of discretionary accruals have decreased among our sample firms after 1994. As for the predicted signs of the control variables, β_3 (OPCASH) is predicted to be negative; β_4 (lagged total assets) is predicted to be negative; β_5 (Debt) is predicted to be positive; β_6 (AbsTAC) is predicted to be positive, and lastly β_7 (AchNI) is predicted to be positive.

V. Empirical Results

Table 5 presents the univariate analysis of absolute discretionary accruals pooled across years. The analysis does not indicate a significant difference between credit and equity firms. A possible reason for the lack of significance at the conventional level is the presence of correlated omitted variables, which potentially confound our results.

Table 6 presents the results of the multivariate analysis with the control variables discussed earlier in the methodology section.¹⁷ Hypothesis 1 predicts that credit firms report relatively higher discretionary accruals compared to equity-outsider firms. To support hypothesis 1, β_1 (Credit) has to be positive and significant. Table 6 shows that absolute discretionary accruals are positively related at the 0.02 level to the dummy variable representing the credit firms in the sample. The value of the coefficient indicates that credit sample firms report absolute discretionary accruals higher than equity sample firms by 1.6% of lagged total assets. This is consistent with the comparison of absolute discretionary accruals in table 5. In table 5, mean absolute discretionary accruals of

¹⁷Two outliers are identified as we conduct the multivariate analysis. The results of the multivariate analysis both with and without the outliers are quantitatively similar. Therefore, we will present the results of the multivariate analysis without the outliers.

credit firms are larger than those of the equity firms by 1.2% of lagged total assets. Thus, after controlling for correlated omitted variables, there is a significantly positive association between absolute discretionary accruals and credit classification.

Hypothesis 2 predicts that earnings management activities decrease among our sample firms after 1994 as IFRS reduces the flexibility in accounting standards. To support hypothesis 2, β_2 (A1994) has to be negative and statistically significant. Table 6 indicates that A1994 variable is not significant. Therefore, hypothesis 2 is not supported.

The control variable – operating cash flows – is negatively significant at less than the 1% level. This is consistent with Dechow et al. (1995) that discretionary accruals are negatively correlated with operating cash flows. The significantly positive coefficient on the absolute value of total accruals suggests that firms with larger total accruals tend to have larger discretionary accruals. The absolute value of the change in income before extraordinary items is also positive and significant. The leverage and size control variables are not significant.

VI. Summary and Conclusions

Previous research suggests that credit firms are more prone to manipulate earnings than equity firms due to their underlying differences in purposes for financial reporting resulting from differences in their financing systems and governance models. Moreover, Joos and Lang (1994) and Alford et al. (1993) suggest that country-specific differences for purpose of financial reporting persist in spite of attempts to converge accounting practices by adopting uniform accounting standards. We expect the strength of equity market and the insider/outsider governance to have an impact on firm's earnings management.

We use a dichotomous measure of financial system: credit vs. equity financial systems. We hypothesize that credit firms report larger discretionary accruals in comparison to equity firms because of different purposes of financial reporting. We also examine the changes in the pattern of earnings management activities after the IASB's 1995 comparability project went into effect. We divide the sample period into two time segments: pre-1995 and post-1994.

The proxy we use for earnings management is absolute value of discretionary accruals, which are estimated using a cross-sectional time series variant of the Jones 1991 model. The test of earnings management may yield biased results if measurement error in the proxy for discretionary accruals is correlated with omitted variables. We control for this correlated variable problem by including variables that are correlated with our partitioning variable, variables that are different between our two samples and variables that prior studies have shown association with earnings management.

Our multivariate sample consists of 85 equity firm years and 36 credit firm years. Although the results of this study need to be interpreted with caution due to the limited sample size, the findings provide some insights into the differences in earnings management between the equity and creditor/outsider firms listing in the U.S. The random effects estimation indicates that the association between earnings management and credit classification is significantly positive. After controlling for potentially correlated variables, and holding other factors constant, credit firms are more likely to have larger discretionary accruals than their equity counterparts. The absolute discretionary accruals of credit firms are 1.6 percent of total assets higher than the absolute discretionary accruals of equity firms. However, the findings do not suggest that

the IASB comparability project has been effective in narrowing the international difference in accounting practices and providing comparable financial statements. Our results do not indicate a significant reduction in earnings management activities by our sample firms after the IASB's 1995 Comparability project went into effect.

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Table 1: Summary of Classification of Sample Countries Based on Legal Origin. Source: La Porta et al. (1997: 1138) and Hung (2001: 408).

Country	Ext. Cap./GNP	Dom. Firms/Pop.	IPOs/Pop.	Debt/GNP	Rule of Law	Anti-director Rights	One share = One vote	GDP Growth	Log GNP	Creditors Rights	Tax-book conformity index	Credit/Equity
Australia	0.49	63.55	-	0.76	10.00	4	0	3.06	12.64	1	0	Equity
Canada	0.39	40.86	4.93	0.72	10.00	4	0	3.36	13.26	1	0	Equity
UK	1.00	35.68	2.01	1.13	8.57	4	0	2.27	13.86	4	0	Equity
Netherlands	0.52	21.13	0.66	1.08	10.00	2	0	2.55	12.68	2	0	Equity
Finland	0.25	13.00	0.60	0.75	10.00	2	0	2.40	11.49	1	1	Credit
France	0.23	8.05	0.17	0.96	8.98	2	0	2.54	14.07	0	1	Credit
Portugal	0.08	19.50	0.50	0.64	8.68	2	0	3.52	11.41	1	NI	Credit
Switzerland	0.62	33.85	-	-	10.00	1	0	1.18	12.44	1	1	Credit
Germany	0.13	5.14	0.08	1.12	9.23	1	0	2.60	14.46	3	1	Credit
Mexico	0.22	2.28	0.03	0.47	5.35	-	0	3.07	12.69	0	NI	Credit

Where:

Ext. Cap./GNP: The ratio of the stock market capitalization held by minorities to gross national product (GNP) for 1994. The stock market capitalization is calculated as the product of the aggregated stock market capitalization and the mean percentage of common shares not owned by the top three shareholders in the ten largest non-financial, privately owned domestic firms in a given country. Privately owned is defined as a firm in which the state is not a known shareholder.

Dom. Firms/Pop: Ratio of number of domestic firms listed in a country to its population (millions) in 1994.

IPOs/Pop: Ratio of number of initial public offerings (IPO) of equity in a country to its population (millions) in 1994.

Debt/GNP: Ratio of the sum of bank debt of the private sector and outstanding financial bonds to GNP in 1994, or last available.

Rule of Law: Assessment of the law and order tradition in countries. Mean of the months of April and October of a monthly index between 1982 and 1995. Scale from 0 to 10, low scores for less tradition of law and order.

Anti-director Rights: An aggregated index of shareholders' rights. Calculated by adding 1 when (a) the country allows shareholders to mail their proxy vote, (b) shareholders are not required to deposit their shares prior to the general shareholders' meeting, (c) cumulative voting is allowed, (d) an oppressed minorities mechanism is in place, or (e) the minimum percentage of share capital that entitles a shareholder a call for an extraordinary shareholders' meeting is less than or equal to 10%. The index ranges from 0 to 5.

One share = One vote: Equals 1 if the company law or commercial code of the country requires that ordinary shares carry one vote per share, and 0 otherwise.

GDP Growth: Mean annual percent growth of per capita GNP for the period 1970-1993.

Log GNP: Logarithm of the GNP in 1994.

Creditors Rights: An aggregated index of creditors' rights. Calculated by adding 1 when (a) the country imposes restrictions, such as creditors' consent or minimum dividends, to file for reorganization, (b) secured creditors are able to gain possession of their security once the reorganization petition has been approved, (c) the debtor does not retain the administration of its property pending the resolution of the reorganization, or (d) secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm. The index ranges from 0 to 4.

Tax-book conformity index: This index is constructed by Alexander and Archer (1995) and is based on data from Coopers and Lybrand (1993). The index shows the convergence between tax reporting and financial accounting. It equals 1 for countries with high tax-book conformity and equals 0 for countries with low conformity. NI stands for No Information.

Credit/equity: Shows the categorization made based on the variables a) Rule of Law, b) Anti-director Rights and c) Tax-book conformity index.

Table 2: Sample Used in Analysis

	Firm-years
Initial sample from Lexis/Nexis database	171
Non-IAS years	(10)
Banking firm (SIC code: 6000-6999)	(11)
Utility firms (SIC code: 4000-4999)	(21)
Missing financial data	(6)
Outliers	(2)
Final sample	121

Table 3: Descriptive Statistics

	Section A Observations with Credit Firms (n = 36)			Section B Observations with Equity Firms (n = 85)			Section C Tests of null (A=B)	
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-statistic	p-value
Natural log of Assets ^a (millions)	9.0805	9.2072	0.8860	7.8416	8.3819	1.5580	5.55	0.000
Net Income ^b	0.0759	0.0761	0.1136	0.0479	0.0423	0.1180	1.22	0.225
Operating Cash flows ^c	0.1085	0.0857	0.0768	0.1259	0.1147	0.0855	-1.06	0.289
Debt ^d	0.1565	0.1348	0.1340	0.1552	0.1500	0.1172	0.05	0.960
Total Accruals ^e	-0.0327	-0.0225	0.0980	-0.0781	-0.0748	0.0824	2.64	0.009
Abs(Total Accruals) ^f	0.0589	0.0375	0.0844	0.0882	0.0765	0.0712	-1.98	0.050

^aAssets are total assets (Compustat item #6).

^bNet income is net income before extraordinary items (Compustat item #18) deflated by lagged total assets (Compustat item #6).

^cOperating cash flows (Compustat item #308) deflated by lagged total assets (Compustat item #6).

^dDebt is long-term debt deflated by lagged total assets (Compustat item #6).

^eTotal accruals are the difference between net income before extraordinary items (Compustat item #18) and cash flows from operations (Compustat item #308), deflated by lagged total assets (Compustat item #6).

^fAbs(Total Accruals) is the absolute value of total accruals deflated by lagged total assets (Compustat item #6).

Table 4: Pearson Correlation (p value in parenthesis)

Panel A: Pearson correlations of absolute values of total accruals (absTAC) and discretionary accruals (absDA) with possible correlated variables

	Abs(TAC)	Abs(DA)
Log(Assets ^a)	-0.34758 (0.0001)	-0.22283 (0.0136)
Abs(NI ^b)	0.33523 (0.0002)	0.53185 (0.0001)
Abs(ChgNI)	0.58821 (0.0001)	0.6982 (0.0001)
Debt ^d	0.06237 (0.4949)	0.11355 (0.213)
Operating Cash Flows ^c	-0.01127 (0.9019)	-0.16875 (0.0632)
Abs(TAC) ^e	1	0.75069 (0.0001)

Panel B: Pearson correlations of the dummy variable – credit with possible correlated variables

	Credit
Log(Assets ^a)	0.37121 (0.0001)
Abs(NI ^b)	0.11587 (0.2038)
Abs(ChgNI)	0.05806 (0.5253)
Debt ^d	0.00465 (0.9595)
Operating Cash Flows ^c	-0.09675 (0.2891)
Abs(TAC) ^e	-0.17765 (0.0503)

^aAssets are total assets (Compustat item #6).

^bNI is net income before extraordinary items (Compustat item #18) deflated by lagged total assets (Compustat item #6).

^cOperating cash flows (Compustat item #308) deflated by lagged total assets (Compustat item #6).

^dDebt is long-term debt deflated by lagged total assets (Compustat item #6).

^eAbs(TAC) is the absolute value of total accruals deflated by lagged total assets (Compustat item #6).

Table 5: Univariate Analysis (Discretionary accruals, absolute value of discretionary accruals, and standard deviation of discretionary accruals for a sample of credit and equity firms during 1987-2001.

	Section A Observations with Credit Firms (n=36)			Section B Observations with Equity Firms (n=85)			Section C Tests of null (B-A)	
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	t-statistic	p-value
Discretionary Accruals (DA)	-0.01428	-0.00182	0.09640	-0.00391	0.00738	0.06364	0.60	0.5510
Abs(DA)	0.05373	0.02627	0.08084	0.04165	0.03088	0.04806	-1.03	0.3073

Table 6: Multivariate Model of absolute values of discretionary accruals (absDA) on credit categorization and control variables (using Random Effects Estimation)

Variable	Predicted Sign	Parameter Estimate	Standard Error	t-value	Pr > t ¹
Credit	(+)	0.01640	0.00828	1.980	0.0239
A1994	(-)	0.00696	0.00616	1.130	0.1293
OPCASH	(-)	-0.12649	0.04025	-3.142	0.0009
Assets	(-)	-0.00085	0.00265	-0.321	0.3740
Debt	(-)	0.01199	0.02934	0.409	0.3413
AbsTAC	(+)	0.47962	0.05284	9.078	0.0000
AchNI	(+)	0.19736	0.06181	3.193	0.0007
Intercept	(+/-)	0.00960	0.02314	0.415	0.6785

¹ p values are presented for one-tailed tests where a direction has been predicted, otherwise for a two-tailed test.

- AbsDA_i = Absolute value of discretionary accruals for firm i in year t, as measured in equation (2);
- Credit_{it} = 1 if firm i is categorized as credit and 0 for equity;
- A1994 = 1 if the firm-year observation occurs after 1994 and 0 otherwise;
- OPCASH_{it} = Operating cash flows (Compustat item #308) deflated by lagged total assets (Compustat item #6);
- Assets_{it-1} = Natural log of lagged total assets (Compustat item #6);
- Debt_{it} = Long Term Debt deflated by lagged total assets;
- AbsTAC_{it} = Absolute value of total accruals. Total Accruals are the difference between net income before extraordinary items (Compustat item #18) and cash flows from operations (Compustat item #308), deflated by lagged total assets (Compustat item #6);
- AchNI_{it} = Absolute value of the change in income before extraordinary items between t-1 and t (Compustat item #18), deflated by lagged total assets (Compustat item 6).