

International Comparative Study of International Financial Reporting Standards Adoption and Earnings Quality: Effects of Differences in Accounting Standards, Industry Category, and Country Characteristics

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Abstract—The purpose of this study is to investigate whether firms applying International Financial Reporting Standards (IFRS), provide high-quality and comparable earnings information that is useful for decision making of information users relative to firms applying local Generally Accepted Accounting Principles (GAAP). Focus is placed on the earnings quality of listed firms in several developed countries: Australia, Canada, France, Germany, Japan, the United Kingdom (UK), and the United States (US). Except for Japan and the US, the adoption of IFRS is mandatory for listed firms in these countries. In Japan, the application of IFRS is allowed for specific listed firms. In the US, the foreign firms listed on the US securities market are permitted to apply IFRS but the listed domestic firms are prohibited from doing so. In this paper, the differences in earnings quality are compared between firms applying local GAAP and those applying IFRS in each country and industry category, and the reasons of differences in earnings quality are analyzed using various factors. The results show that, although the earnings quality of firms applying IFRS is higher than that of firms applying local GAAP, this varies with country and industry category. Thus, even if a single set of global accounting standards is used for all listed firms worldwide, it is difficult to establish comparability of financial information among global firms. These findings imply that various circumstances surrounding firms, industries, and countries etc. influence business operations and affect the differences in earnings quality.

Keywords—Accruals, earnings quality, IFRS, information comparability.

I. INTRODUCTION

THIS paper examines whether the adoption of IFRS provides high-quality and comparable earnings information to participants in the major capital markets of the world. Focus in determining high-quality and comparable information is on earnings quality of firms listed on primary securities market worldwide: Australia, Canada, France, Germany, Japan, the UK, and the US. These countries, except for Japan and the US, require the preparation of consolidated financial statements in accordance with the IFRS by firms listed in their major securities markets. Japan allows specific listed

firms to use the IFRS for preparing their consolidated financial statements. The US permits to apply IFRS for foreign firms listed on the US securities market but prohibit to apply it for listed domestic firms. This paper compares the differences in earnings quality between firms applying local GAAP (hereinafter, “local GAAP firms”) and firms applying IFRS (hereinafter, “IFRS firms”) in each country and industry category, and analyzes the effects on earnings quality of some other factors that influence it.

The remainder of this paper is organized as follows. In Section II, the methods used for the analysis of earnings quality are classified and related research is discussed. Next, the hypotheses and the overall research design are presented in Section III, and the sample selection procedures and descriptive statistics are discussed in Section IV. Then, Section V shows the results of tests relating to differences in earnings quality and the factors that influence it. Finally, in Section VI, some conclusions are presented and their implications discussed.

II. RELATED LITERATURE

Prior studies on earnings quality are classified into four topics: (i) time-series properties of earnings; (ii) selected qualitative characteristics in the conceptual framework; (iii) the relations among income, cash, and accruals; and (iv) implementation decisions [23]. These four topics are mutually exclusive. In general, a popular method for analyzing earnings quality is derived from the relation between the accruals and cash components of earnings, and that is the approach that will be adopted in this paper.

The international convergence of accounting standards to the IFRS¹ has prompted research on the effect on earnings quality of applying IFRS. Some studies have compared measurements of earnings quality in one country between pre-IFRS adoption terms and post-IFRS adoption terms or between IFRS firms and non-IFRS firms. This approach has been extended to look at multiple countries where IFRS has been adopted, at least by some firms. International comparative studies of earnings

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¹ Several prior studies ([3], [5], [820], [25]) examine the effects of the International Accounting Standards (IAS), which were accounting standards used before the advent of IFRS. In this paper, the term IFRS includes IAS.

quality tend to investigate whether IFRS adoption not only results in an increase in accounting quality but also provides international comparative information to information users.

The effects of voluntary or mandatory IFRS adoption on earnings quality in Germany are examined by [5], [20], and [25]. Reference [25] investigated whether German firms that had adopted IFRS engaged significantly less in earnings management compared to German firms reporting under German GAAP. Earnings management was analyzed using the absolute discretionary accruals that were measured by using the model of [11] and correlation between accruals and cash flows from operating activities (CFO) based on [17]. They found that IFRS adopters did not exhibit different earnings management behavior compared to firms reporting under German GAAP. References [5] and [20] compared the impacts of voluntary and mandatory adoption of IFRS on earnings quality and found results that are different from those of [25]. These studies used the analysis models of [3] and measured the extent of earnings smoothing and timely loss recognition. Reference [5] showed that the earnings quality after voluntary IFRS adoption was higher than that after mandatory IFRS adoption. Reference [20] also argued that earnings management continues even after mandatory IFRS adoption.

The study of [17] investigated the impact of IFRS adoption in Canada. Earnings quality was evaluated using five measures: absolute discretionary accruals based on [8]; the comparison of performance-matched discretionary accruals between sample firms and paired firms using the model of [13]; the frequency of small positive earnings measured using the model of [4]; the earnings persistence computed using the model of [8]; and market-based measure of earnings quality based on [10]. The results of this paper also did not indicate a causal effect of IFRS adoption on earnings quality.

References [12] and [27] examined the differences in earnings quality between IFRS firms and local GAAP firms in emerging economic countries, using a model similar to that of [3]. The study of [27] focused on firms listed on primary securities markets in China. They analyzed earnings quality on the basis of measures of earnings smoothing and timely loss recognition. The results of their tests indicated some improvements in earnings quality associated with IFRS adoption. Reference [12] examined the influence of IFRS adoption on earnings quality of listed firms in Brazil by comparing the pre-IFRS adoption period and in the post-IFRS adoption period. The results of their tests showed an increase in the income smoothing level after IFRS adoption. Thus, they concluded that earnings quality is not increased by only applying IFRS.

Several researches [1], [3], [26] addressed the question whether IFRS adoption is associated with higher earnings quality in many countries. Reference [3] compared the earnings management levels of firms that had voluntarily adopted IFRS and local GAAP firms in 21 countries. They examined earnings quality based on earnings management and timely loss recognition. Earnings management was analyzed using four metrics: three for earnings smoothing and one for managing earnings towards a target. The earnings smoothing level was

evaluated by the variability of change in net income, mean of the ratio of the variability of the change in net income to the variability of the change in CFO, and the Spearman correlation between the accruals and CFO. Their metric for managing towards positive earnings was the regression coefficient for small positive net income, and timely loss recognition was measured by the regression coefficient for large negative net income. Their results indicated that the earnings quality of firms that voluntarily adopted IFRS is higher than that of local GAAP firms.

Reference [26] focused on 15 countries in the European Union (EU) and measured earnings quality in the periods before and after IFRS adoption. Earnings quality was analyzed using six measures: earnings smoothing based on [16]; variability of accruals measured using the models of [7] and [18]; absolute discretionary accruals measured by the method of [6]; managing toward earnings targets, as proposed by [3] and [15]; timeliness and conditional conservatism following [2] and [14]; and value relevance, as suggested by [15]. The results suggested that there had been some improvement in earnings quality after IFRS adoption. The findings of this paper were more pronounced for firms in countries where the distance between pre-existing local GAAP and IFRS was large. They did not identify any changes within firms that had converged their local GAAP toward IFRS before the mandatory adoption.

The study of [1] compared earnings quality for firms in 20 countries that had adopted IFRS and firms in 15 countries where IFRS had not been adopted. They analyzed earnings quality from earnings smoothing, small positive income recognition, and timely loss recognition. The results showed that earnings quality related to income smoothing, amounts of accruals, and timely loss recognition in IFRS firms was lower level than those of non-IFRS firms. However, they did not find significant differences between IFRS and non-IFRS firms in meeting or beating earnings targets.

Since foreign firms in the US are permitted to apply IFRS, some studies have examined earnings quality for foreign firms cross-listed on the US securities markets. Reference [24] focused on foreign firms in 23 countries that applied IFRS for filing documents to the Securities and Exchange Commission (SEC) in the US. They compared the earnings quality of filing documents before and after IFRS adoption with that of domestic US listed firms. They examined five measures of earnings quality related to discretionary accruals, target beating, earnings persistence, timely loss recognition, and the earnings response coefficient. They did not find any differences in earnings quality between the pre-IFRS period and the post-IFRS period when earnings quality was measured by absolute discretionary accruals, timely loss recognition, or a long-window earnings response coefficient. However, for the incidence of small positive earnings and earnings persistence, they found significant differences.

In their study, [21] analyzed the level of earnings management in Latin America, and focused on firms in Brazil and Chile that apply IFRS for the preparation of financial statements. This paper compares the earnings management levels of firms in Latin American countries with those of firms

in Anglo-Saxon countries (the UK and Australia) and Continental European countries (France and Germany). The results showed that Latin American firms presented a higher level of earnings management than both Continental European and Anglo-Saxon firms. Based on this, [21] argued that even with a unique set of high-quality accounting standards, namely IFRS, national characteristics still play an important role in the way IFRS is implemented in each country.

Previous studies have analyzed the relationship between IFRS adoption and earnings quality using various measures, revealing mixed evidence for the effect of IFRS adoption on earnings quality. Some studies have found that IFRS adoption results in increases of earnings quality, while others did not find any such increase. Most studies, except for those of [21] and [26], have not analyzed differences in earnings quality between the different countries applying IFRS. Prior research focusing on many countries has not examined the impact of IFRS adoption on earnings quality for the individual countries and, with particular relevance for us, there is no research relating to Japanese firms².

This study seeks to address the shortcomings identified in the previous studies. Focusing on developed countries including Japan, earnings quality is measured and ranked, and changes in earnings quality and the factors influencing them are evaluated by country, industry, and accounting standards.

III. HYPOTHESIS AND RESEARCH DESIGN

The question of interest is whether the IFRS achieves its objectives and provides high-quality and comparable financial information to participants in the world's capital markets. The existing literature does not provide consistent results. In particular, we do not know whether and how earnings quality differs by IFRS adoption country or industry sector. Therefore, the following pair of simple hypotheses is proposed.

- H_{0-1} : IFRS adoption does not affect earnings quality.
- H_{1-1} : IFRS adoption increases earnings quality.

Next, the following hypotheses are tested.

- H_{0-2} : Adoption of the IFRS does not affect differences in earnings quality.
- H_{1-2} : Adoption of the IFRS diminishes differences in earnings quality.

These hypotheses are examined by country and industry. Accruals quality has been widely used as a proxy for earnings quality in prior studies, so earnings quality is modeled by (1) and (2). Earnings that are more closely related to cash flows give better quality. Uncertainty in accruals is best predicted by the modified [7] model ([9]). Reference [18] added two variables to the [7] model: the change in revenue; and the value of property, plant, and equipment. These variables are important in forming expectations about total current accruals. Total accruals are estimated by (1).

$$\frac{TA_t}{Assets_{t-1}} = \alpha_1 \frac{CFO_{t-1}}{Assets_{t-1}} + \alpha_2 \frac{CFO_t}{Assets_{t-1}} + \alpha_3 \frac{CFO_{t+1}}{Assets_{t-1}} + \alpha_4 \frac{\Delta REV_t}{Assets_{t-1}} + \alpha_5 \frac{PPE_t}{Assets_{t-1}} + \varepsilon_t \quad (1)$$

TA_t : total accruals in year t , $Assets_{t-1}$: total assets at the end of year $t-1$, CFO_t : cash flows from operating activities in year t , ΔREV_t : change in revenues between year $t-1$ and year t , PPE_t : value of property, plants, and equipment at the end of year t .

Accruals are evaluated by using the residual ε as a measure of a firm's financial performance. Accruals quality is given by (2) for each country and industry.

$$AQ_t = \beta_0 + \beta_1 LnAssets_t + \beta_2 SDCFO_t + \beta_3 SDREV_t + \beta_4 LnOpCycle_t + \beta_5 NegEarn_t + \zeta_t \quad (2)$$

AQ_t : accruals quality (a residual ε) in year t , $LnAssets_t$: natural logarithm of total assets at the end of year t , $SDCFO_t$: standard deviation of CFO over the three years before year t , $SDREV_t$: standard deviation of revenue over the three years before year t , $LnOpCycle_t$: natural logarithm of operating cycle in year t , $NegEarn_t$: incidence of negative earnings over the three years before year t .

The residual ζ after estimating AQ with (2) represents earnings quality. Smaller absolute values of the residual ζ indicate higher earnings quality. The evaluation of earnings quality is tested by two analyses. The first tests the difference in the population mean of earnings quality between local GAAP firms and IFRS firms. If the result of the test is statistically significant, then earnings quality is different between local GAAP firms and IFRS firms.

TABLE I
 SAMPLES

| Country | Local GAAP | IFRS | Total | US GAAP |
|-----------|------------|--------|--------|---------|
| Australia | 3.610 | 6.936 | 10.546 | |
| Canada | 2.633 | 2.530 | 5.163 | 261 |
| France | 744 | 4.134 | 4.878 | |
| Germany | 616 | 2.643 | 3.259 | |
| Japan | 26.924 | 69 | 26.993 | 93 |
| UK | 709 | 3.869 | 4.578 | |
| US | 13.284 | --- | 13.284 | 13.284 |
| Total | 48.520 | 20.181 | 68.701 | 13.638 |

After evaluating earnings quality, the following regression model is estimated by using earnings quality; that is, absolute values of ζ , as the dependent variable. Based on [17], several control variables are included in (3) to control for other factors that may affect earnings quality: market value means that firms with a large market value have higher earnings quality; financial leverage is positively associated with earnings management; return on assets that means earnings performance is related to discretionary accruals; dummies of the industry and the accounting standards represent proxies to circumstances influencing a firm's performance and activities. If the coefficients of industry and accounting standards dummies are statistically significant, then earnings quality is influenced by differences of industry and accounting standards.

² Reference [19] measured earnings quality for examining value relevance of earnings focusing on Japanese firms. However, this research used the data before Japan adopted IFRS.

$$EQ_t = \gamma_0 + \gamma_1 LnMV_t + \gamma_2 Lev_t + \gamma_3 ROA_t + \gamma_4 DummyInd + \gamma_5 DummyAcStand \quad (3)$$

leverage at the end of year t , ROA_t : return on assets in year t , $DummyInd$: industry dummies by Global Industry Classification Standard (GICS), $DummyAcStandards$: accounting standards dummies.

EQ_t : earnings quality (absolute values of residual ζ) in year t ,
 $LnMV_t$: market value at the end of year t , Lev_t : financial

TABLE II
DESCRIPTIVE STATISTICS OF VARIABLES

| Var. | Accruals | CFO _{t-1} | CFO _t | CFO _{t+1} | dSales | PPE | Ln Assets | SD CFO | SDRev | LnOp Cycle | Neg Earn | LnMV | Lev | ROA |
|------------|----------|--------------------|------------------|--------------------|--------|--------|-----------|--------|---------|------------|----------|--------|--------|--------|
| AU GAAP | | | | | | | | | | | | | | |
| Ave. | -0.049 | -0.115 | -0.133 | -0.212 | 0.194 | 0.755 | 3.342 | 0.550 | 21.203 | 1.869 | 0.527 | 3.579 | 0.408 | -0.164 |
| Med. | -0.013 | -0.025 | -0.022 | -0.021 | 0.041 | 0.271 | 2.945 | 0.091 | 0.140 | 1.817 | 0.667 | 3.177 | 0.340 | -0.016 |
| St.Dev. | 0.886 | 0.603 | 0.748 | 1.302 | 1.084 | 14.257 | 2.153 | 10.49 | 989.225 | 0.670 | 0.450 | 2.133 | 0.636 | 0.960 |
| CA GAAP | | | | | | | | | | | | | | |
| Ave. | -0.056 | 0.020 | 0.058 | 0.066 | 0.214 | 0.795 | 4.867 | 0.400 | 0.406 | 1.771 | 0.407 | 5.057 | 1.709 | -0.369 |
| Med. | -0.022 | 0.072 | 0.082 | 0.093 | 0.057 | 0.471 | 4.970 | 0.050 | 0.101 | 1.763 | 0.000 | 5.066 | 0.403 | 0.037 |
| St.Dev. | 0.748 | 0.546 | 0.937 | 1.410 | 2.373 | 6.152 | 2.698 | 2.358 | 4.997 | 0.506 | 0.461 | 2.338 | 36.496 | 4.354 |
| FR GAAP | | | | | | | | | | | | | | |
| Ave. | -0.014 | 0.042 | 0.050 | 0.059 | 0.057 | 0.225 | 5.699 | 0.066 | 0.633 | 1.994 | 0.203 | 5.093 | 0.626 | 0.031 |
| Med. | -0.014 | 0.058 | 0.064 | 0.070 | 0.036 | 0.137 | 5.342 | 0.045 | 0.183 | 2.013 | 0.000 | 4.723 | 0.647 | 0.054 |
| St.Dev. | 0.102 | 0.125 | 0.117 | 0.131 | 0.272 | 0.275 | 2.453 | 0.068 | 6.279 | 0.293 | 0.354 | 2.379 | 0.208 | 0.152 |
| GE GAAP | | | | | | | | | | | | | | |
| Ave. | -0.008 | 0.004 | 0.009 | -0.084 | 0.068 | 0.438 | 3.852 | 0.100 | 0.891 | 1.749 | 0.315 | 3.571 | 0.548 | -0.002 |
| Med. | -0.023 | 0.047 | 0.049 | 0.063 | 0.022 | 0.185 | 3.670 | 0.070 | 0.168 | 1.745 | 0.000 | 3.229 | 0.576 | 0.040 |
| St.Dev. | 0.370 | 0.333 | 0.265 | 1.485 | 0.701 | 3.630 | 2.316 | 0.110 | 12.106 | 0.534 | 0.387 | 2.232 | 0.266 | 0.241 |
| JP GAAP | | | | | | | | | | | | | | |
| Ave. | -0.006 | 0.057 | 0.060 | 0.063 | 0.027 | 0.325 | 10.942 | 0.034 | 0.101 | 1.763 | 0.080 | 10.211 | 0.506 | 0.050 |
| Med. | -0.010 | 0.056 | 0.058 | 0.060 | 0.022 | 0.298 | 10.817 | 0.026 | 0.061 | 1.894 | 0.000 | 10.066 | 0.512 | 0.042 |
| St.Dev. | 0.052 | 0.058 | 0.060 | 0.064 | 0.117 | 0.209 | 1.450 | 0.030 | 0.692 | 0.450 | 0.203 | 1.623 | 0.205 | 0.054 |
| UK GAAP | | | | | | | | | | | | | | |
| Ave. | -0.019 | 0.097 | 0.105 | 0.113 | 0.062 | 0.390 | 5.803 | 0.043 | 0.250 | 1.739 | 0.084 | 5.628 | 0.679 | 0.082 |
| Med. | -0.020 | 0.098 | 0.104 | 0.106 | 0.042 | 0.299 | 5.676 | 0.033 | 0.109 | 1.833 | 0.000 | 5.465 | 0.553 | 0.085 |
| St.Dev. | 0.064 | 0.083 | 0.086 | 0.090 | 0.130 | 0.327 | 2.087 | 0.039 | 0.884 | 0.440 | 0.235 | 2.250 | 3.638 | 0.211 |
| US GAAP | | | | | | | | | | | | | | |
| Ave. | -0.008 | 0.091 | 0.100 | 0.112 | 0.069 | 0.411 | 7.897 | 0.036 | 0.165 | 1.634 | 0.077 | 7.818 | 0.602 | 0.086 |
| Med. | -0.006 | 0.083 | 0.089 | 0.096 | 0.036 | 0.285 | 7.858 | 0.023 | 0.069 | 1.713 | 0.000 | 7.753 | 0.587 | 0.074 |
| St.Dev. | 0.075 | 0.079 | 0.093 | 0.115 | 0.208 | 0.414 | 1.616 | 0.045 | 2.701 | 0.410 | 0.222 | 1.645 | 0.259 | 0.186 |
| AU-IFRS | | | | | | | | | | | | | | |
| Ave. | -0.094 | -0.132 | -0.177 | -0.252 | 0.088 | 0.475 | 3.753 | 0.550 | 0.191 | 2.024 | 0.584 | 3.750 | 0.431 | -0.325 |
| Med. | -0.029 | -0.021 | -0.023 | -0.021 | 0.003 | 0.276 | 3.384 | 0.059 | 0.068 | 1.895 | 0.667 | 3.360 | 0.299 | -0.050 |
| St.Dev. | 0.469 | 0.723 | 1.829 | 3.937 | 0.974 | 1.104 | 2.302 | 11.95 | 0.579 | 0.762 | 0.452 | 2.244 | 1.422 | 2.268 |
| CA-IFRS | | | | | | | | | | | | | | |
| Ave. | -0.050 | 0.058 | 0.065 | 0.066 | 0.103 | 0.627 | 5.988 | 0.108 | 0.157 | 1.665 | 0.386 | 5.791 | 0.509 | -0.078 |
| Med. | -0.028 | 0.075 | 0.079 | 0.081 | 0.027 | 0.530 | 6.047 | 0.034 | 0.076 | 1.721 | 0.000 | 5.794 | 0.432 | 0.035 |
| St.Dev. | 0.547 | 0.271 | 0.335 | 0.610 | 0.807 | 1.634 | 2.015 | 0.441 | 0.473 | 0.449 | 0.436 | 1.910 | 1.661 | 1.022 |
| FR-IFRS | | | | | | | | | | | | | | |
| Ave. | -0.009 | 0.054 | 0.057 | 0.061 | 0.049 | 0.242 | 6.107 | 0.043 | 0.124 | 2.005 | 0.167 | 5.510 | 0.605 | 0.031 |
| Med. | -0.007 | 0.061 | 0.065 | 0.067 | 0.032 | 0.146 | 5.785 | 0.028 | 0.065 | 1.993 | 0.000 | 5.146 | 0.596 | 0.050 |
| St.Dev. | 0.076 | 0.096 | 0.104 | 0.116 | 0.149 | 0.332 | 2.289 | 0.049 | 0.816 | 0.324 | 0.323 | 2.292 | 0.321 | 0.135 |
| GE-IFRS | | | | | | | | | | | | | | |
| Ave. | -0.007 | 0.041 | 0.044 | 0.059 | 0.097 | 0.254 | 5.816 | 0.073 | 0.353 | 1.766 | 0.180 | 5.376 | 0.591 | 0.035 |
| Med. | -0.012 | 0.068 | 0.071 | 0.076 | 0.044 | 0.210 | 5.447 | 0.035 | 0.098 | 1.790 | 0.000 | 5.089 | 0.592 | 0.055 |
| St.Dev. | 0.203 | 0.219 | 0.315 | 0.234 | 0.542 | 0.323 | 2.416 | 0.210 | 6.308 | 0.356 | 0.319 | 2.477 | 0.329 | 0.228 |
| JP-IFRS | | | | | | | | | | | | | | |
| Ave. | -0.018 | 0.049 | 0.052 | 0.052 | -0.000 | 0.200 | 14.193 | 0.014 | 0.080 | 1.990 | 0.075 | 13.219 | 0.600 | 0.034 |
| Med. | -0.017 | 0.047 | 0.049 | 0.052 | 0.003 | 0.186 | 14.547 | 0.014 | 0.050 | 1.984 | 0.000 | 13.805 | 0.635 | 0.030 |
| St.Dev. | 0.029 | 0.030 | 0.030 | 0.028 | 0.047 | 0.119 | 1.964 | 0.007 | 0.114 | 0.262 | 0.139 | 1.805 | 0.176 | 0.031 |
| UK-IFRS | | | | | | | | | | | | | | |
| Ave. | 0.000 | 0.090 | 0.097 | 0.106 | 0.058 | 0.319 | 6.662 | 0.120 | 6.209 | 2.463 | 0.088 | 6.351 | 1.364 | 0.079 |
| Med. | 0.002 | 0.083 | 0.088 | 0.093 | 0.036 | 0.221 | 6.600 | 0.117 | 6.253 | 1.980 | 0.078 | 6.393 | 0.564 | 0.077 |
| St.Dev. | 0.062 | 0.086 | 0.093 | 0.105 | 0.143 | 0.337 | 1.826 | 0.618 | 1.981 | 12.216 | 0.089 | 1.946 | 48.328 | 0.414 |
| JP-US GAAP | | | | | | | | | | | | | | |
| Ave. | -0.011 | 0.046 | 0.045 | 0.046 | 0.013 | 0.192 | 14.904 | 0.014 | 0.044 | 1.927 | 0.064 | 13.912 | 0.604 | 0.032 |
| Med. | -0.013 | 0.048 | 0.049 | 0.051 | 0.022 | 0.169 | 15.475 | 0.010 | 0.044 | 1.935 | 0.000 | 14.219 | 0.684 | 0.032 |
| St.Dev. | 0.021 | 0.020 | 0.024 | 0.022 | 0.045 | 0.094 | 1.402 | 0.013 | 0.026 | 0.270 | 0.140 | 1.080 | 0.220 | 0.022 |
| CA-US GAAP | | | | | | | | | | | | | | |
| Ave. | -0.031 | 0.000 | -0.006 | 0.000 | 0.081 | 0.418 | 6.696 | 0.212 | 0.182 | 1.750 | 0.356 | 7.440 | 0.538 | -0.188 |
| Med. | -0.016 | 0.074 | 0.077 | 0.087 | 0.032 | 0.310 | 6.815 | 0.041 | 0.101 | 1.749 | 0.000 | 7.379 | 0.541 | 0.036 |
| St.Dev. | 0.148 | 0.328 | 0.397 | 0.436 | 0.278 | 0.366 | 3.080 | 0.562 | 0.209 | 0.350 | 0.451 | 2.240 | 0.501 | 0.782 |

Equation (4) adds a country dummy in place to accounting standards dummy in (3). This model analyzed the effects of several factors on earnings quality individually using pooled data of local GAAP firms and IFRS firms. This analysis

complements the results of the tests performed by country in (3). If the coefficient of the country dummy is statistically significant, then earnings quality is influenced by country differences.

$$EQ_t = \delta_0 + \delta_1 LnMV_t + \delta_2 Lev_t + \delta_3 ROA_t + \delta_4 DummyInd + \delta_5 DummyCountry \quad (4)$$

DummyCountry : country dummies.

IV. SAMPLES AND DESCRIPTIVE STATISTICS

The initial sample consists of all publicly listed firms incorporated in the years 1997-2017 in seven developed countries: Australia, Canada, France, Germany, Japan, the UK, and the US. In the EU, member countries mandate the adoption of IFRS by listed firms. The Financial Service Agency (FSA) of Japan permits specific listed firms to prepare their consolidated financial statements in accordance with the IFRS. The SEC of the US allows applying IFRS for foreign firms listed on the US securities market, however, prohibits doing it for listed domestic firms. The SEC emphasizes that the US GAAP

represent the most comprehensive and high-quality set of accounting standards in the world when compared to other individual countries' GAAP [22]. In this paper, the US firms are included for analysis in order to examine whether applying the US GAAP will provide higher quality financial information than applying the IFRS or other countries' accounting standards.

Table I reports the distribution of sample firms across countries and accounting standards. Financial institutions (GICS codes 4010-4030) are dropped from the samples. Financial data is from the Capital IQ database of Standard and Poor's. Total samples size is 69,055 firm-year observations, including 20,181 IFRS observations. They are divided to 21 industry categories.

Table II presents the descriptive statistics for estimating total accruals and evaluating earnings quality according to country and accounting standards. Most accruals have a negative average and median, except for UK-IFRS. CFO variables are positive in many countries; however, they are negative in Australia.

TABLE III
ESTIMATION FOR ACCRUALS

| Country | Australia | | IFRS | | Canada | | US | | IFRS | |
|--------------------|---------------|--------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|
| AcStand. | AU GAAP | | | | CA GAAP | | | | | |
| Var. | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value |
| <i>Const.</i> | | -3.504 ** | | -13.757 ** | | -4.170 ** | | -4.852 ** | | 24.610 ** |
| <i>CFOt-1</i> | -0.126 | -6.494 ** | 0.102 | 6.796 ** | 0.266 | 18.316 ** | 0.553 | 6.009 ** | 0.150 | 9.443 ** |
| <i>CFOt</i> | 0.093 | 4.158 ** | -0.280 | -6.583 ** | -0.477 | -25.911 ** | -0.605 | -6.372 ** | -0.263 | -12.627 ** |
| <i>CFOt+1</i> | 0.132 | 6.425 ** | 0.532 | 13.769 ** | 0.597 | 36.141 ** | 0.244 | 3.197 ** | 0.136 | 8.060 ** |
| <i>dSales</i> | 0.107 | 6.776 ** | 0.008 | 0.685 | 0.124 | 8.300 ** | 0.303 | 5.388 ** | -0.074 | -6.817 ** |
| <i>PPE</i> | -0.021 | -1.320 | -0.007 | -0.613 | -0.419 | -33.448 ** | 0.095 | 1.721 | -0.857 | -80.072 ** |
| adj.R ² | | 0.036 | | 0.104 | | 0.763 | | 0.219 | | 0.784 |
| Country | France | | IFRS | | Germany | | IFRS | | | |
| AcStand. | FR GAAP | | | | GE GAAP | | | | | |
| Var. | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value |
| <i>Const.</i> | | -2.861 ** | | -7.666 ** | | -0.033 | | 0.558 | | |
| <i>CFOt-1</i> | 0.436 | 12.403 ** | 0.409 | 22.767 ** | 0.192 | 4.260 ** | 0.409 | 17.083 ** | | |
| <i>CFOt</i> | -0.655 | -18.334 ** | -0.833 | -43.507 ** | -0.325 | -6.035 ** | -0.642 | -23.564 ** | | |
| <i>CFOt+1</i> | 0.185 | 5.543 ** | 0.306 | 16.958 ** | 0.100 | 1.885 | 0.220 | 9.150 ** | | |
| <i>dSales</i> | 0.176 | 5.960 ** | 0.219 | 16.920 ** | 0.195 | 4.736 ** | 0.097 | 5.308 ** | | |
| <i>PPE</i> | -0.003 | -0.111 | 0.008 | 0.628 | -0.089 | -2.112 | -0.056 | -3.067 ** | | |
| adj.R ² | | 0.305 | | 0.331 | | 0.116 | | 0.218 | | |
| Country | Japan | | US | | IFRS | | UK | | IFRS | |
| AcStand. | JP GAAP | | | | | | UK GAAP | | | |
| Var. | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value |
| <i>Const.</i> | | 35.707 ** | | 0.957 | | -0.149 | | 2.641 ** | | 5.521 ** |
| <i>CFOt-1</i> | 0.285 | 57.575 ** | 0.103 | 1.179 | 0.552 | 4.130 ** | 0.298 | 7.378 ** | 0.371 | 17.516 ** |
| <i>CFOt</i> | -0.742 | -145.757 ** | -0.584 | -6.255 ** | -0.772 | -5.376 ** | -0.783 | -17.200 ** | -0.845 | -35.884 ** |
| <i>CFOt+1</i> | 0.215 | 42.648 ** | -0.133 | -1.505 | 0.094 | 0.682 | 0.195 | 4.705 ** | 0.282 | 13.133 ** |
| <i>dSales</i> | 0.294 | 66.016 ** | 0.311 | 3.739 ** | 0.192 | 2.019 * | 0.235 | 8.288 ** | 0.191 | 12.849 ** |
| <i>PPE</i> | -0.174 | -39.750 ** | 0.097 | 1.197 | -0.215 | -2.189 * | -0.082 | -2.979 ** | -0.006 | -0.410 |
| adj.R ² | | 0.491 | | 0.377 | | 0.421 | | 0.279 | | 0.255 |
| Country | US | | | | | | | | | |
| AcStand. | US GAAP | | | | | | | | | |
| Var. | Coeff. | t-value | | | | | | | | |
| <i>Const.</i> | | 3.469 ** | | | | | | | | |
| <i>CFOt-1</i> | 0.329 | 29.392 ** | | | | | | | | |
| <i>CFOt</i> | -0.543 | -41.664 ** | | | | | | | | |
| <i>CFOt+1</i> | 0.193 | 16.464 ** | | | | | | | | |
| <i>dSales</i> | 0.157 | 19.119 ** | * : 5% | | | | | | | |
| <i>PPE</i> | -0.189 | -23.806 ** | ** : 1% | | | | | | | |
| adj.R ² | | 0.166 | | | | | | | | |

TABLE IV
ESTIMATION FOR ACCRUALS QUALITY

| Country | Australia | | | | Canada | | | | US GAAP | | | | IFRS | | |
|--------------------|---------------|----------------|---------|---------------|----------------|---------------|---------------|----------------|------------|---------------|---------------|---------------|---------------|---------------|----|
| AcStand. | Local GAAP | | IFRS | | Local GAAP | | US GAAP | | IFRS | | IFRS | | | | |
| Var. | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | | | |
| <i>Const.</i> | | 5.951 | ** | 11.503 | ** | 5.352 | ** | 0.266 | | | | 7.149 | ** | | |
| <i>LnAssets</i> | -0.142 | -5.268 | ** | -0.205 | -10.942 | ** | -0.150 | -6.082 | ** | -0.080 | -0.899 | -0.052 | -2.088 | * | |
| <i>SDCFO</i> | 0.047 | 1.206 | | 0.140 | 8.869 | ** | 0.522 | 18.511 | ** | 0.254 | 2.915 | ** | 0.482 | 18.464 | ** |
| <i>SDRev</i> | -0.040 | -1.048 | | -0.005 | -0.289 | | -0.361 | -12.867 | ** | 0.147 | 1.884 | | -0.130 | -5.161 | ** |
| <i>LnOpCycle</i> | 0.040 | 1.925 | | 0.020 | 1.226 | | -0.003 | -0.154 | | 0.055 | 0.717 | | -0.088 | -3.759 | ** |
| <i>NegEarn</i> | 0.007 | 0.247 | | -0.010 | -0.524 | | 0.048 | 1.920 | | 0.150 | 1.617 | | 0.050 | 2.062 | * |
| adj.R ² | | 0.025 | | 0.066 | | | 0.190 | | | 0.280 | | | 0.208 | | |
| Country | France | | | | Germany | | | | US GAAP | | | | IFRS | | |
| AcStand. | Local GAAP | | IFRS | | Local GAAP | | IFRS | | Local GAAP | | IFRS | | | | |
| Var. | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | | | |
| <i>Const.</i> | | -0.631 | | 4.195 | ** | -0.272 | | 5.602 | ** | | | | | | |
| <i>LnAssets</i> | -0.118 | -2.240 | * | -0.097 | -5.261 | ** | -0.113 | -2.085 | * | -0.157 | -6.794 | ** | | | |
| <i>SDCFO</i> | 0.255 | 5.221 | ** | 0.247 | 13.088 | ** | 0.463 | 8.238 | ** | 0.095 | 4.048 | ** | | | |
| <i>SDRev</i> | 0.102 | 2.213 | * | -0.028 | -1.608 | | 0.047 | 0.912 | | 0.134 | 5.684 | ** | | | |
| <i>LnOpCycle</i> | 0.126 | 2.945 | ** | 0.042 | 2.543 | * | 0.141 | 2.992 | ** | 0.043 | 2.038 | * | | | |
| <i>NegEarn</i> | 0.219 | 4.538 | ** | 0.157 | 8.657 | ** | 0.085 | 1.611 | | 0.224 | 9.552 | ** | | | |
| adj.R ² | | 0.251 | | 0.158 | | | 0.356 | | | 0.182 | | | | | |
| Country | Japan | | | | US GAAP | | | | Local GAAP | | | | IFRS | | |
| AcStand. | Local GAAP | | US GAAP | | Local GAAP | | Local GAAP | | Local GAAP | | IFRS | | | | |
| Var. | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value | | | |
| <i>Const.</i> | | 28.080 | ** | 0.914 | | 0.350 | | 3.379 | ** | | | 8.472 | ** | | |
| <i>LnAssets</i> | -0.082 | -12.848 | ** | -0.075 | -0.477 | | 0.207 | 0.822 | | 0.015 | 0.336 | | -0.020 | -1.157 | |
| <i>SDCFO</i> | 0.243 | 36.740 | ** | -0.205 | -1.312 | | -0.098 | -0.412 | | 0.174 | 3.295 | ** | 0.218 | 11.803 | ** |
| <i>SDRev</i> | 0.063 | 9.718 | ** | -0.136 | -1.003 | | -0.248 | -0.933 | | -0.086 | -1.654 | | 0.040 | 2.287 | * |
| <i>LnOpCycle</i> | -0.090 | -14.808 | ** | 0.154 | 1.015 | | -0.082 | -0.290 | | -0.031 | -0.716 | | -0.036 | -2.169 | * |
| <i>NegEarn</i> | 0.114 | 18.415 | ** | 0.354 | 2.398 | * | 0.484 | 1.869 | | 0.210 | 4.599 | ** | 0.265 | 15.144 | ** |
| adj.R ² | | 0.126 | | 0.025 | | | 0.086 | | | 0.065 | | | 0.161 | | |
| Country | US | | | | | | | | | | | | | | |
| AcStand. | Local GAAP | | | | | | | | | | | | | | |
| Var. | Coeff. | t-value | | | | | | | | | | | | | |
| <i>Const.</i> | | 14.105 | ** | | | | | | | | | | | | |
| <i>LnAssets</i> | -0.059 | -6.747 | ** | | | | | | | | | | | | |
| <i>SDCFO</i> | 0.315 | 32.528 | ** | | | | | | | | | | | | |
| <i>SDRev</i> | -0.010 | -1.118 | | | | | | | | | | | | | |
| <i>LnOpCycle</i> | -0.016 | -1.971 | * | | | | | | | | | | | | |
| <i>NegEarn</i> | 0.280 | 32.088 | ** | | | | | | | | | | | | |
| adj.R ² | | 0.241 | | | | | | | | | | | | | |

V. RESULTS

Table III shows the results of estimating the accruals for each country and accounting standards by (1). Most of the CFO variables used to estimate the accruals are statistically significant.

Equation (2) estimates the accruals quality by using the residuals ε as dependent variables and some financial performance indicators as independent variables. The results of the regression analysis based on (2) are presented in Table IV.

PANEL A in Table V presents the absolute values of residuals ζ resulting from the evaluation of accruals quality according to country and accounting standards, the differences of absolute values of residuals between local GAAP and IFRS firms, along with the results of testing the difference in the population mean of the absolute values of residuals between local GAAP and IFRS firms. The absolute values of residuals

ζ resulting from the evaluation of accruals quality show earnings quality. Smaller absolute values of the residual ζ indicate higher earnings quality. Differences in the absolute values of residuals between local GAAP and IFRS firms represent differences in earnings quality. A positive difference means that the earnings quality of IFRS firms is higher than that of local GAAP firms and a negative difference means that the earnings quality of IFRS firms is lower than that of local GAAP firms. The test of the difference in the population mean of absolute values of residuals between local GAAP and IFRS firms provides evidence of differences in earnings quality.

Except for the average in the UK and the median in Canada, the absolute values of residuals calculated for IFRS are smaller than those for local GAAP. This result means that the earnings quality of IFRS firms is higher than that of local GAAP firms in many countries. The standard deviation of the absolute values

of residuals shows variance of earnings quality in each country. In all countries except the UK, the standard deviation of IFRS firms is smaller than that of local GAAP firms. This indicates

that application of the IFRS diminishes differences in earnings quality in each country.

TABLE V
EARNINGS QUALITY

| PANEL A: ABSOLUTE VALUES OF RESIDUALS | | | | | | | | | | | | |
|---------------------------------------|------------|-------|-------|------------|---------|-------|-------------|-------------|------------|-------|--------|------------|
| Country | Australia | | | Canada | | | France | | | US | | |
| AcStand. | Local GAAP | IFRS | Diff. | Local GAAP | US GAAP | IFRS | Diff. (L-I) | Diff. (U-I) | Local GAAP | IFRS | Diff. | Local GAAP |
| Ave. | 0.159 | 0.131 | 0.028 | 0.083 | 0.045 | 0.077 | 0.006 | -0.031 | 0.033 | 0.026 | 0.008 | 0.026 |
| t-test | | | ** | | | | ** | * | | | ** | |
| Med. | 0.110 | 0.088 | 0.022 | 0.048 | 0.024 | 0.058 | -0.009 | -0.034 | 0.023 | 0.018 | 0.005 | 0.018 |
| St.Dev. | 0.400 | 0.296 | 0.104 | 0.289 | 0.082 | 0.138 | 0.151 | -0.056 | 0.038 | 0.031 | 0.007 | 0.031 |
| Country | Germany | | | Japan | | | UK | | | US | | |
| AcStand. | Local GAAP | IFRS | Diff. | Local GAAP | US GAAP | IFRS | Diff. (L-I) | Diff. (U-I) | Local GAAP | IFRS | Diff. | Local GAAP |
| Ave. | 0.046 | 0.034 | 0.012 | 0.016 | 0.008 | 0.005 | 0.011 | 0.002 | 0.023 | 0.023 | -0.000 | 0.026 |
| t-test | | | ** | | | | ** | ** | | | --- | |
| Med. | 0.034 | 0.023 | 0.011 | 0.013 | 0.006 | 0.004 | 0.009 | 0.002 | 0.018 | 0.017 | 0.000 | 0.018 |
| St.Dev. | 0.055 | 0.049 | 0.006 | 0.017 | 0.006 | 0.004 | 0.013 | 0.002 | 0.024 | 0.025 | -0.001 | 0.033 |

* : 5%
** : 1%

Diff.: Positive values indicate that earnings quality of IFRS firms is higher than that of local GAAP firms.
Diff. (L-I): differences between residuals of Local GAAP firms and IFRS firms
Diff. (U-I): differences between residuals of US GAAP firms and IFRS firms

PANEL B: RANKING OF EARNINGS QUALITY

| Country/AcStand. | Local GAAP | Country/AcStand. | IFRS | Country/AcStand. | US GAAP |
|------------------|------------|------------------|-------|------------------|---------|
| Japan | 0.016 | Japan | 0.005 | Japan | 0.008 |
| UK | 0.023 | UK | 0.023 | US | 0.026 |
| US | 0.026 | France | 0.026 | Canada | 0.045 |
| France | 0.033 | Germany | 0.034 | | |
| Germany | 0.046 | Canada | 0.077 | | |
| Canada | 0.083 | Australia | 0.131 | | |
| Australia | 0.159 | | | | |

*) Smaller values is higher quality of earnings.

PANEL B in Table V is a ranking of the earnings quality, in ascending order of residuals, for each set of accounting standards. Differences of average values among countries are confirmed by the test of the difference of population mean. As shown in PANEL B, the earnings quality in Japanese firms is the highest in all categories of accounting standards. The residuals increase in the order of the UK, France or the US, Germany, Canada, and Australia. The earnings quality of local GAAP firms and IFRS firms is relatively low in both Australia and Canada. In the US GAAP firms, the earnings quality of Japanese firms is the highest and that of Canadian firms is the lowest.

Table VI presents only the differences between residuals for local GAAP and IFRS firms by industry. Both positive and negative differences of residuals exist. In the industries 2010: Capital Goods, 2520: Consumer Durables & Apparel, 2550: Retailing, 4510: Software & Services, and 4520: Technology Hardware & Equipment etc., the differences in residuals are positive in each country. In other words, the earnings quality for IFRS firms is higher than that for local GAAP firms in those industries. On the other hand, there are some specific industries in all countries for which a difference of accounting standards does not always result in an increase or decrease of earnings quality.

From the two countries which use both IFRS and US GAAP, it can be seen that the absolute values of residuals of IFRS firms are larger than those of US GAAP firms in Canada, but the

reverse is true in Japan. That is, in Canada, the earnings quality of IFRS firms is lower than that of US GAAP firms, while the earnings quality of IFRS firms is higher than that of US GAAP firms in Japan. The standard deviation of the absolute values of residuals shows that application of the IFRS diminishes the differences in earnings quality in Japan and expands the differences in Canada.

Equation (3) analyzes the influence of a firm's financial situation, industry type, and accounting standards on earnings quality. PANEL A in Table VII shows the results of tests of whether earnings quality depends on differences in industry and accounting standards within each country. Many industry dummies are significant except Canada and Germany, but the signs of them are negative. However, most of accounting standards dummies are statistically insignificant and the signs of them are negative.

PANEL B summarizes the results of tests examining earnings quality by using pooled data of different accounting standards in (4). In the local GAAP firms, earnings quality is influenced by each factor: the industry and the country. In the local GAAP firms, many industry factors are significant; however, some industry factors change to be statistically insignificant in the IFRS firms. The country dummies are also insignificant. The result of analysis using pooled data shows that various environmental factors of different countries have effects on earnings quality. These results mean that if IFRS were adopted throughout the world, earnings quality would

differ by industry and country, and would not be comparable.

TABLE VI
DIFFERENCES IN EARNINGS QUALITY

| Code | Industry | Country | Australia | Canada | France | Germany | Japan | UK | + | - |
|------|--|---------|-----------|--------|--------|---------|-------|--------|---|---|
| 1010 | Energy | Ave. | 0.094 | -0.001 | -0.010 | 0.020 | --- | -0.020 | 2 | 3 |
| | | Med. | 0.033 | -0.013 | -0.006 | 0.012 | --- | -0.011 | 2 | 3 |
| | | St.Dev. | 0.790 | -0.001 | -0.005 | 0.029 | --- | -0.029 | | |
| 1510 | Materials | Ave. | 0.029 | 0.023 | 0.012 | -0.014 | --- | -0.008 | 3 | 2 |
| | | Med. | 0.028 | -0.014 | 0.012 | -0.010 | --- | -0.007 | 2 | 3 |
| | | St.Dev. | -0.048 | 0.238 | 0.001 | -0.044 | --- | -0.011 | | |
| 2010 | Capital Goods | Ave. | 0.039 | 0.050 | 0.012 | 0.012 | 0.009 | -0.003 | 5 | 1 |
| | | Med. | 0.036 | 0.005 | 0.006 | 0.008 | 0.008 | -0.002 | 5 | 1 |
| | | St.Dev. | 0.065 | 0.594 | 0.029 | 0.004 | 0.009 | -0.006 | | |
| 2020 | Commercial & Professional Services | Ave. | 0.012 | 0.005 | 0.002 | -0.014 | --- | -0.003 | 3 | 2 |
| | | Med. | 0.030 | 0.014 | 0.006 | -0.013 | --- | -0.005 | 3 | 2 |
| | | St.Dev. | -0.102 | -0.010 | -0.020 | -0.013 | --- | -0.003 | | |
| 2030 | Transportation | Ave. | 0.034 | -0.029 | 0.010 | -0.008 | --- | -0.004 | 2 | 3 |
| | | Med. | 0.036 | -0.025 | 0.004 | -0.001 | --- | -0.002 | 2 | 3 |
| | | St.Dev. | 0.019 | -0.015 | 0.009 | -0.030 | --- | -0.008 | | |
| 2510 | Automobiles & Components | Ave. | 0.037 | -0.030 | -0.003 | 0.010 | --- | -0.017 | 2 | 3 |
| | | Med. | 0.018 | -0.038 | 0.001 | 0.004 | --- | 0.007 | 4 | 1 |
| | | St.Dev. | 0.047 | 0.015 | -0.004 | 0.009 | --- | -0.035 | | |
| 2520 | Consumer Durables & Apparel | Ave. | 0.013 | 0.016 | 0.004 | 0.001 | --- | 0.058 | 5 | 0 |
| | | Med. | 0.001 | -0.012 | 0.006 | 0.009 | --- | 0.065 | 4 | 1 |
| | | St.Dev. | 0.033 | 0.032 | 0.001 | -0.020 | --- | 0.020 | | |
| 2530 | Consumer Services | Ave. | 0.031 | 0.031 | 0.002 | -0.059 | --- | -0.004 | 3 | 2 |
| | | Med. | 0.021 | 0.028 | 0.001 | -0.015 | --- | 0.000 | 4 | 1 |
| | | St.Dev. | 0.032 | 0.033 | 0.006 | -0.109 | --- | -0.010 | | |
| 2540 | Media | Ave. | 0.019 | -0.007 | -0.002 | 0.016 | --- | 0.001 | 3 | 2 |
| | | Med. | 0.027 | 0.002 | 0.002 | 0.017 | --- | -0.003 | 4 | 1 |
| | | St.Dev. | -0.072 | -0.017 | -0.010 | -0.003 | --- | 0.001 | | |
| 2550 | Retailing | Ave. | 0.025 | -0.007 | 0.016 | -0.003 | 0.016 | 0.006 | 4 | 2 |
| | | Med. | 0.007 | 0.001 | 0.002 | 0.025 | 0.012 | 0.005 | 6 | 0 |
| | | St.Dev. | 0.063 | -0.014 | 0.012 | -0.066 | 0.018 | -0.002 | | |
| 3010 | Food & Staples Retailing | Ave. | -0.070 | -0.017 | -0.003 | --- | --- | 0.002 | 1 | 3 |
| | | Med. | -0.085 | -0.032 | -0.003 | --- | --- | 0.003 | 1 | 3 |
| | | St.Dev. | 0.005 | 0.006 | -0.003 | --- | --- | 0.001 | | |
| 3020 | Food, Beverage & Tobacco | Ave. | 0.032 | 0.004 | 0.005 | 0.036 | --- | -0.002 | 4 | 1 |
| | | Med. | 0.038 | -0.012 | -0.006 | 0.020 | --- | -0.002 | 2 | 3 |
| | | St.Dev. | 0.031 | 0.031 | 0.009 | 0.041 | --- | -0.003 | | |
| 3030 | Household & Personal Products | Ave. | -0.011 | -0.019 | 0.006 | --- | --- | 0.007 | 2 | 2 |
| | | Med. | 0.021 | 0.039 | 0.009 | --- | --- | 0.012 | 4 | 0 |
| | | St.Dev. | -0.028 | 0.028 | -0.022 | --- | --- | 0.003 | | |
| 3510 | Health Care Equipment & Services | Ave. | 0.043 | 0.016 | 0.015 | -0.011 | --- | 0.018 | 4 | 1 |
| | | Med. | 0.004 | 0.055 | 0.017 | -0.013 | --- | -0.011 | 3 | 2 |
| | | St.Dev. | 0.182 | -0.066 | 0.010 | -0.007 | --- | 0.043 | | |
| 3520 | Pharmaceuticals, Biotechnology & Life Sciences | Ave. | -0.029 | -0.045 | 0.021 | -0.008 | --- | -0.000 | 1 | 4 |
| | | Med. | 0.030 | 0.008 | 0.034 | 0.009 | --- | 0.004 | 5 | 0 |
| | | St.Dev. | -0.239 | -0.098 | 0.012 | -0.032 | --- | -0.010 | | |
| 4510 | Software & Services | Ave. | 0.032 | 0.057 | 0.024 | 0.030 | --- | -0.007 | 4 | 1 |
| | | Med. | 0.044 | 0.029 | 0.024 | 0.039 | --- | -0.004 | 4 | 1 |
| | | St.Dev. | 0.022 | 0.104 | 0.014 | -0.013 | --- | -0.013 | | |
| 4520 | Technology Hardware & Equipment | Ave. | 0.026 | 0.068 | 0.014 | 0.029 | 0.012 | -0.000 | 5 | 1 |
| | | Med. | 0.043 | 0.028 | 0.007 | 0.011 | 0.009 | -0.003 | 5 | 1 |
| | | St.Dev. | -0.069 | 0.245 | 0.022 | 0.064 | 0.012 | -0.002 | | |
| 4530 | Semiconductors & Semiconductor Equipment | Ave. | 0.095 | --- | -0.015 | -0.015 | --- | -0.039 | 1 | 3 |
| | | Med. | 0.089 | --- | -0.009 | 0.006 | --- | -0.028 | 2 | 2 |
| | | St.Dev. | 0.020 | --- | -0.017 | -0.044 | --- | -0.045 | | |
| 5010 | Telecommunication Services | Ave. | -0.080 | 0.031 | -0.010 | 0.001 | --- | -0.013 | 2 | 3 |
| | | Med. | -0.010 | 0.039 | -0.010 | 0.008 | --- | -0.016 | 2 | 3 |
| | | St.Dev. | -0.234 | 0.007 | -0.010 | -0.058 | --- | -0.003 | | |
| 5510 | Utilities | Ave. | 0.036 | -0.002 | -0.004 | 0.014 | --- | 0.002 | 3 | 2 |
| | | Med. | 0.069 | 0.002 | -0.009 | 0.019 | --- | 0.004 | 4 | 1 |
| | | St.Dev. | -0.507 | -0.006 | -0.002 | 0.007 | --- | -0.013 | | |
| 6010 | Real Estate | Ave. | 0.076 | -0.060 | 0.002 | 0.014 | --- | 0.001 | 4 | 1 |
| | | Med. | 0.037 | -0.047 | 0.005 | 0.010 | --- | -0.003 | 3 | 2 |
| | | St.Dev. | 0.097 | -0.073 | -0.004 | 0.019 | --- | 0.000 | | |

Positive values indicate that earnings quality of IFRS firms is higher than that of local GAAP firms.

TABLE VII
RESULTS OF TESTS FOR INFLUENCING FACTORS TO EARNINGS QUALITY

| PANEL A: BY COUNTRY | | | | | | | | | | | | |
|----------------------|-----------|---------|----|--------|---------|----|--------|---------|----|--------|---------|----|
| Country | Australia | | | Canada | | | France | | | | | |
| Var. | Coeff. | t-value | | Coeff. | t-value | | Coeff. | t-value | | | | |
| <i>Const.</i> | | 17.371 | ** | | 14.366 | ** | | 8.940 | ** | | | |
| <i>LnMV</i> | -0.123 | -9.813 | ** | -0.039 | -2.445 | * | -0.163 | -9.293 | ** | | | |
| <i>Lev</i> | 0.007 | 0.461 | | -0.741 | -22.298 | ** | 0.203 | 12.723 | ** | | | |
| <i>ROA</i> | -0.067 | -4.421 | ** | -1.111 | -32.955 | ** | -0.116 | -6.901 | ** | | | |
| <i>DummyInd1</i> | -0.005 | -0.281 | | -0.016 | -0.970 | | -0.074 | -2.355 | * | | | |
| <i>DummyInd2</i> | -0.052 | -3.585 | ** | -0.004 | -0.278 | | -0.120 | -3.241 | ** | | | |
| <i>DummyInd3</i> | -0.025 | -1.847 | | -0.003 | -0.207 | | -0.084 | -2.821 | ** | | | |
| <i>DummyInd4</i> | -0.027 | -2.171 | * | 0.011 | 0.751 | | -0.084 | -3.364 | ** | | | |
| <i>DummyInd5</i> | -0.018 | -1.484 | | -0.002 | -0.112 | | -0.099 | -4.217 | ** | | | |
| <i>DummyInd6</i> | -0.035 | -2.751 | ** | -0.016 | -1.143 | | -0.067 | -2.032 | * | | | |
| <i>DummyInd7</i> | -0.029 | -2.216 | * | 0.000 | 0.007 | | -0.096 | -3.939 | ** | | | |
| <i>DummyInd8</i> | -0.025 | -2.008 | * | -0.003 | -0.216 | | 0.041 | 1.275 | | | | |
| <i>DummyInd9</i> | -0.028 | -2.093 | * | 0.006 | 0.396 | | -0.064 | -2.611 | ** | | | |
| <i>DummyInd10</i> | 0.003 | 0.220 | | 0.004 | 0.301 | | -0.102 | -5.102 | ** | | | |
| <i>DummyInd11</i> | -0.031 | -2.399 | * | 0.003 | 0.204 | | -0.098 | -3.304 | ** | | | |
| <i>DummyInd12</i> | -0.013 | -1.098 | | -0.011 | -0.768 | | -0.010 | -0.516 | | | | |
| <i>DummyInd13</i> | -0.018 | -1.306 | | -0.045 | -3.165 | ** | -0.067 | -2.421 | * | | | |
| <i>DummyInd14</i> | -0.007 | -0.535 | | -0.101 | -6.575 | ** | 0.015 | 0.568 | | | | |
| <i>DummyInd15</i> | -0.021 | -1.531 | | 0.008 | 0.534 | | -0.041 | -1.022 | | | | |
| <i>DummyInd16</i> | -0.014 | -1.081 | | -0.021 | -1.442 | | -0.048 | -1.603 | | | | |
| <i>DummyInd17</i> | -0.008 | -0.683 | | --- | --- | | -0.030 | -1.565 | | | | |
| <i>DummyInd18</i> | -0.005 | -0.445 | | 0.010 | 0.696 | | 0.036 | 1.899 | | | | |
| <i>DummyInd19</i> | 0.016 | 1.339 | | 0.003 | 0.176 | | -0.091 | -3.865 | ** | | | |
| <i>DummyInd20</i> | -0.024 | -1.760 | | 0.029 | 1.837 | | -0.135 | -3.774 | ** | | | |
| <i>DummyAcStand1</i> | -0.049 | -4.107 | ** | 0.002 | 0.166 | | -0.050 | -3.265 | ** | | | |
| <i>DummyAcStand2</i> | --- | --- | | -0.031 | -2.043 | * | --- | --- | | | | |
| adj.R ² | | 0.032 | | | 0.299 | | | 0.141 | | | | |
| Country | Germany | | | Japan | | | the UK | | | the US | | |
| Var. | Coeff. | t-value | | Coeff. | t-value | | Coeff. | t-value | | Coeff. | t-value | |
| <i>Const.</i> | | 3.412 | ** | | 24.547 | ** | | 14.599 | ** | | 28.534 | ** |
| <i>LnMV</i> | -0.173 | -7.176 | ** | -0.107 | -14.450 | ** | -0.093 | -5.063 | ** | -0.113 | -11.265 | ** |
| <i>Lev</i> | 0.204 | 9.646 | ** | -0.007 | -0.968 | | 0.043 | 2.396 | * | 0.086 | 8.908 | ** |
| <i>ROA</i> | -0.289 | -12.919 | ** | 0.146 | 19.779 | ** | -0.060 | -3.340 | ** | -0.131 | -12.904 | ** |
| <i>DummyInd1</i> | 0.007 | 0.118 | | -0.300 | -12.097 | ** | -0.138 | -4.947 | ** | -0.132 | -10.382 | ** |
| <i>DummyInd2</i> | -0.091 | -0.834 | | -0.334 | -10.650 | ** | -0.212 | -5.981 | ** | -0.194 | -13.736 | ** |
| <i>DummyInd3</i> | -0.045 | -0.906 | | -0.165 | -9.668 | ** | -0.177 | -6.504 | ** | -0.120 | -10.775 | ** |
| <i>DummyInd4</i> | -0.024 | -0.565 | | -0.191 | -11.785 | ** | -0.108 | -4.879 | ** | -0.053 | -5.226 | ** |
| <i>DummyInd5</i> | -0.030 | -0.500 | | -0.180 | -10.333 | ** | -0.028 | -1.576 | | -0.058 | -5.752 | ** |
| <i>DummyInd6</i> | -0.017 | -0.243 | | -0.169 | -8.930 | ** | 0.028 | 1.190 | | -0.012 | -1.076 | |
| <i>DummyInd7</i> | -0.002 | -0.051 | | -0.128 | -7.992 | ** | -0.149 | -5.681 | ** | -0.070 | -6.219 | ** |
| <i>DummyInd8</i> | -0.017 | -0.354 | | -0.101 | -9.133 | ** | -0.121 | -4.666 | ** | -0.099 | -9.596 | ** |
| <i>DummyInd9</i> | 0.035 | 0.611 | | -0.132 | -7.387 | ** | -0.091 | -3.290 | ** | -0.068 | -5.888 | ** |
| <i>DummyInd10</i> | -0.035 | -1.030 | | -0.135 | -9.465 | ** | -0.069 | -3.782 | ** | -0.067 | -6.851 | ** |
| <i>DummyInd11</i> | -0.042 | -0.792 | | -0.197 | -11.440 | ** | -0.131 | -5.754 | ** | -0.063 | -5.854 | ** |
| <i>DummyInd12</i> | --- | --- | | -0.068 | -6.534 | ** | -0.083 | -4.289 | ** | -0.042 | -4.124 | ** |
| <i>DummyInd13</i> | -0.032 | -0.494 | | -0.083 | -6.432 | ** | -0.072 | -3.851 | ** | -0.117 | -10.255 | ** |
| <i>DummyInd14</i> | -0.029 | -0.558 | | -0.052 | -4.450 | ** | -0.013 | -0.615 | | -0.030 | -2.901 | ** |
| <i>DummyInd15</i> | 0.018 | 0.243 | | -0.082 | -4.372 | ** | -0.043 | -1.914 | | 0.018 | 1.582 | |
| <i>DummyInd16</i> | 0.006 | 0.095 | | -0.183 | -8.781 | ** | -0.111 | -5.071 | ** | -0.082 | -7.556 | ** |
| <i>DummyInd17</i> | 0.061 | 1.667 | | -0.019 | -1.670 | | 0.086 | 4.745 | ** | 0.023 | 2.454 | * |
| <i>DummyInd18</i> | 0.091 | 2.416 | * | 0.021 | 2.894 | ** | -0.052 | -2.728 | ** | -0.020 | -2.004 | * |
| <i>DummyInd19</i> | -0.076 | -1.337 | | -0.083 | -7.582 | ** | -0.092 | -4.351 | ** | -0.204 | -17.261 | ** |
| <i>DummyInd20</i> | -0.026 | -0.425 | | -0.087 | -5.951 | ** | -0.265 | -8.593 | ** | -0.248 | -18.580 | ** |
| <i>DummyAcStand1</i> | -0.018 | -0.874 | | -0.011 | -1.633 | | 0.010 | 0.606 | | | | |
| <i>DummyAcStand2</i> | --- | --- | | -0.012 | -1.754 | | --- | --- | | | | |

| PANEL A: BY COUNTRY | | | | | | |
|----------------------------------|-----------|---------|--------|---------|---------|---------|
| Country | Australia | | Canada | | France | |
| Var. | Coeff. | t-value | Coeff. | t-value | Coeff. | t-value |
| adj.R ² | | 0.232 | | 0.069 | | 0.082 |
| | | | | | | 0.099 |
| PANEL B: BY ACCOUNTING STANDARDS | | | | | | |
| AcStand. | Local | | IFRS | | | |
| Var. | Coeff. | t-value | Coeff. | t-value | | |
| <i>Const.</i> | | 16.563 | ** | 3.135 | ** | |
| <i>LnMV</i> | -0.092 | -11.625 | ** | -0.106 | -11.551 | ** |
| <i>Lev</i> | 0.010 | 1.528 | | -0.004 | -0.403 | |
| <i>ROA</i> | -0.169 | -25.632 | ** | -0.129 | -12.544 | ** |
| <i>DummyInd1</i> | -0.047 | -5.292 | ** | 0.024 | 1.768 | |
| <i>DummyInd2</i> | -0.076 | -7.555 | ** | -0.045 | -3.603 | ** |
| <i>DummyInd3</i> | -0.042 | -6.240 | ** | -0.022 | -2.141 | * |
| <i>DummyInd4</i> | -0.037 | -5.719 | ** | -0.020 | -2.196 | * |
| <i>DummyInd5</i> | -0.033 | -5.047 | ** | -0.013 | -1.461 | |
| <i>DummyInd6</i> | -0.037 | -5.211 | ** | -0.023 | -2.228 | * |
| <i>DummyInd7</i> | -0.034 | -5.152 | ** | -0.027 | -2.851 | ** |
| <i>DummyInd8</i> | -0.032 | -5.504 | ** | -0.020 | -1.955 | |
| <i>DummyInd9</i> | -0.034 | -4.857 | ** | -0.021 | -2.099 | * |
| <i>DummyInd10</i> | -0.030 | -5.018 | ** | -0.006 | -0.726 | |
| <i>DummyInd11</i> | -0.039 | -5.793 | ** | -0.026 | -2.638 | ** |
| <i>DummyInd12</i> | -0.014 | -2.463 | * | -0.007 | -0.831 | |
| <i>DummyInd13</i> | -0.029 | -4.565 | ** | -0.020 | -2.056 | * |
| <i>DummyInd14</i> | -0.021 | -3.577 | ** | 0.016 | 1.674 | |
| <i>DummyInd15</i> | -0.021 | -2.940 | ** | -0.021 | -1.898 | |
| <i>DummyInd16</i> | -0.039 | -5.381 | ** | -0.022 | -2.249 | * |
| <i>DummyInd17</i> | -0.010 | -1.811 | | -0.006 | -0.725 | |
| <i>DummyInd18</i> | -0.012 | -2.376 | * | 0.007 | 0.835 | |
| <i>DummyInd19</i> | -0.035 | -5.644 | ** | -0.002 | -0.248 | |
| <i>DummyInd20</i> | -0.053 | -7.290 | ** | -0.029 | -2.625 | ** |
| <i>DummyCountry1</i> | 0.061 | 10.015 | ** | 0.007 | 0.106 | |
| <i>DummyCountry2</i> | -0.009 | -1.788 | | -0.085 | -0.943 | |
| <i>DummyCountry3</i> | -0.007 | -1.271 | | -0.099 | -1.067 | |
| <i>DummyCountry4</i> | 0.185 | 25.882 | ** | 0.075 | 0.722 | |
| <i>DummyCountry5</i> | -0.004 | -0.811 | | -0.064 | -0.871 | |
| <i>DummyCountry6</i> | -0.004 | -0.549 | | | | |
| adj.R ² | | 0.117 | | 0.099 | | |

VI. CONCLUSION

This paper examined whether IFRS adoption results in an increase in earnings quality and provides comparable earnings information by using firm data covering different accounting standards, industries and countries. As a whole, the results of tests show that the earnings quality of IFRS firms is higher than that of local GAAP firms. The differences in earnings quality are decreased by applying IFRS in each country. However, in the UK, earnings quality is not very different for firms using local GAAP and for those using IFRS and, in Canada, the earnings qualities of US GAAP firms are generally higher than those of local GAAP and IFRS firms.

Among IFRS firms, the earnings quality of Japanese firms is the highest. The ranking then decreases in the order of the UK, France or the US, Germany, Canada, and Australia. In fact, Japanese firms are ranked at the top of earnings quality in all accounting standards. In particular, the earnings quality of Japanese firms is higher than that of both IFRS firms in other countries and US GAAP application firms in all countries.

Analysis of the results also shows that earnings quality is influenced by differences in accounting standards in some countries, but not in others. These results suggest that it is necessary to consider several factors that affect earnings quality and not only accounting standards.

According to the analysis by industry, earnings quality in some industries is increased by IFRS adoption; however, no trends common to all countries is found. This is explained by national differences in industrial structure, firm size, financial position, and other factors.

This research found that, overall, the earnings quality of IFRS firms is higher than that of local GAAP firms and IFRS application diminishes the differences in earnings quality of firms in each country; however, the effect is different in each country and industry category. The implications of these findings are that various circumstances surrounding firms, industries, and countries etc., will influence business operations and affect the differences in earnings quality, even if a single set of global accounting standards is used for all listed firms in the world. Thus, it is difficult to establish global comparability

of financial information among global firms.

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