ACC003 The Information Content of Cross-Listed Firms' Financial Information during the Convergence Period

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Abstract

This study examines the information content of earnings announcement over time. With the expectation that the use of IFRSs for the preparation of financial statements increases the information content of earnings over time, this study examines the market reactions around the release of earnings information during 2003–2011. This study finds some evidence to support that the use of IFRSs for the preparation of financial statements leads to the increasing information content of earnings information. This result indicates that the increasing use of IFRSs over time is priced by the market. The usefulness of IFRSs financial information has increased. The results inform the SEC's deliberations on the requirement for companies preparing financial reports using IFRSs.

Keywords: Usefulness earnings information, convergence accounting standards, IFRSs, market reaction.

1. Introduction

This study investigates whether the market reaction around the earnings announcement after the adoption of IFRSs is greater than before the adoption of IFRSs. It is motivated by the globalisation of accounting standards, culminating in the IFRSs adoption around the globe. Empirical studies have examined the capital market effect of earnings announcement in home country across countries (e.g., Landsman, Maydew, and Thornock, 2012). While this study documents that market reaction around earnings announcement in home countries vary across countries depending on IFRSs adoption, they do not examine whether such factor also affect to the market reaction to earnings announcement in the context of U.S. market where firms across country dual listed on the U.S. market.

This study expects that the market reaction around earnings announcement is greater for firms from countries that have adopted IFRSs than those from non-IFRSs countries, given that the market reaction to earnings announcement in home countries of non-IFRSs adopters are weaker than those in home countries of IFRSs adopters (e.g., Landsman et al., 2012). To investigate whether the market reaction around earnings announcement is greater for firms from countries that have adopted IFRSs than those from non-IFRSs countries, this study calculates and compares the cross-sectional average of abnormal returns between IFRSs and non-IFRSs adopters.

This study contributes to the academic literature by adding empirical evidence of a link between IFRSs adoption and market reactions to financial accounting information in

the context of U.S. cross-listed firms.⁸ Because this study's sample involves cross-listed firms in the U.S. market that employ IFRSs and non-IFRSs, this study also contributes in providing empirical evidence of the association between IFRSs and non-IFRSs accounting standards and the information content of earnings announcement. Evidence from this study will be helpful in accounting standards setting, corporate financial disclosure decisions, and capital market investment decisions.

The remainder of this study is organized as follows. Section 2 describes the institutional setting. Section 3 presents the theoretical background and hypothesis development. Section 4 demonstrates how the data, sample, and research methodology will be used to investigate the hypothesis. The following section, section 5, presents this study's empirical results. The final section, section 5, present summary, limitation, and suggestions for future research

2. Institutional setting

The globalization of accounting standards is a recent phenomenon.⁹ One important development behind the expanded use of IFRSs took place in 2005, when the European Union (EU) required EU-listed firms to prepare their consolidated financial statements based on IFRSs as endorsed by the European Commission for financial reporting after 2005 (Ernst & Young, 2008). As of 5 August 2008, 85 countries were required to use IFRSs, including 30 EU member countries (Deloitte, 2008a), and about 7,000 listed companies in Europe switched to IFRSs (IASB, 2008a). Another 24 countries permitted the use of IFRSs as alternative standards from national/domestic GAAP. In July 2002, the Australian Financial Reporting Council formalised its support for IFRSs adoption by 1 January 2005.¹ In 2002, Hong Kong and New Zealand also announced their adoption of IFRSs (IASB, 2008a). In addition, since 2006, China has adopted accounting standards that are substantially in line with IFRSs (IASB, 2008a). Some countries, such as Brazil, Canada, Chile, India, Japan, Korea, and Indonesia, have committed and established schedules to adopt or converge toward IFRSs.

Table 1 presents one hundred and forty eight cross-listed firms on the U.S. market classified by the accounting standards used to prepare financial statements. The accounting standards are classified into domestic GAAP, IFRSs as issued by the IASB (including financial statements that are prepared under International Accounting Standards, the predecessor term for IFRSs), and other versions of IFRSs such as IFRSs as adopted by the European Union, Mexican Financial Reporting Standards (FRSs), New

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⁸ The studies of DeFond et al. (2007) and Landsman et al. (2012) use the sample and data of home countries capital market. In contrast, this study contributes to the literature by examining information content of earnings announcements of cross-listed firms in the U.S. market. The bonding hypothesis suggests that U.S. cross-listings must comply with U.S. securities laws and thus their market value increase (e.g., Doidge, Karolyi, and Stulz, 2004; Hail and Leuz, 2009; Reese and Weisbach, 2002).

⁹ The International Accounting Standards Committee (IASC) was established in 1973 to formulate and issue International Accounting Standards to improve financial reporting and for global acceptance (Ernst & Young, 2008). In 1993, the IASC and the International Organization of Securities Commissions (IOSCO) agreed on a minimum body of accounting standards for the financial statements of cross-border offerings and listings firms. The IASC organization structure changed and become the IASB in 1999. IASC's work on the core accounting standards was completed in December 1998, and in March 2000 IOSCO recommended multinational firms use IFRSs for their financial reporting.

Zealand FRSs, and Hong Kong FRSs. There is a steady increase in the number of crosslisted firms using IFRSs (IFRSs as issued by the IASB and other versions of IFRSs) during 2002–2004, followed by a considerable increase during 2005–2007. More than half of this study's sample comprises firms that still used domestic GAAP up to 2007. Their domestic GAAP may have partially converged with IFRSs.¹⁰

Year	20	002	20)03	20)04	20	005	20	006	20	007
Firm	NI.	0/	NI.	0/	NI.	0/	NI.	0/	NI.	0/	NT.	0/
Numbers	INO.	%0	INO.	%0	INO.	%0	INO.	%0	NO.	%0	INO.	%0
Domestic	136	91.8	135	91.2	130	87.8	101	68.2	91	61.4	86	58.1
GAAP		9		2		4		4		9		1
IFRS:	12	8.11	13	8.78	18	12.1	47	31.7	57	38.5	62	41.8
						6		6		1		9
- IFRSs as	4	2.70	4	6.08	5	3.38	17	11.4	20	13.5	21	14.1
issued by the								9		1		9
IASB												
- Other	8	5.41	9	2.70	13	8.78	30	20.2	37	25.0	41	27.7
versions of								7		0		0
<i>IFRSs</i> ^a												
Total firms	148	100	148	100	148	100	148	100	148	100	148	100

Table 1 Accounting standards employed by the sample of cross-listed firms

^aFor example, IFRSs as adopted by the European Union, Mexican FRSs, New Zealand FRSs, and Hong Kong FRSs.

The SEC pledged to support the development of IFRSs as issued by the IASB as global accounting standards. For example, on 2 July 2007, the SEC formalised their commitment by delivering a proposal to accept cross-listed firm's financial statements prepared under IFRSs without the need to reconcile to U.S. GAAP.¹¹ The SEC (2007) notes that the increasing use of IFRSs will lead to the greater consistency and better application of IFRSs in practice. The more IFRSs-compliant financial statements are used in the U.S. capital markets, the more familiar U.S. investors will become with such statements. This promotes and encourages the ongoing convergence process because standards setters can receive more feedback from the application of IFRSs. A further implication is that, in the future, IFRSs-compliant financial statements could be used by U.S. domestic companies as an alternative to U.S. GAAP. A significant step has been made by the SEC in the adoption of IFRSs in the U.S. On 27 August 2008, the SEC proposed a roadmap and specific rule changes that would permit the use of IFRSs for certain U.S. issuers. On 21 November 2008, the SEC (2008d) issued a roadmap for the

¹⁰ For example, Chinese Accounting Standards have somewhat converged with IFRSs since 2006, even though China's standard setters have not officially adopted IFRSs.

¹¹ The final rule was released on 21 December 2007 in the SEC Final Rule Release No. 33-8879. The effective date of this rule was 4 March 2008, applicable to financial statements for financial years ending after 15 November 2007 (SEC, 2007). See SEC (2007), pages 37,963–37,963, for a detailed history of the reconciliation to U.S. GAAP.

potential use of financial statements prepared in accordance with IFRSs by U.S. domestic firms. This roadmap presents a timetable for the adoption of IFRSs (Hail, Leuz, and Wysocki, 2010a, 2010b; Sogoloff, Rowena, and Stephanie, 2008), despite the mandatory use of IFRSs for U.S. domestic remains a controversy.

3. Theoretical background and hypothesis development

The purpose of this study is to examine whether globalisation of accounting standards are valued by investors in United States (U.S.) capital markets. The theoretical background for the information content of earnings is derived from positive accounting literature. In particular, studies on the association between capital market (equity value) and accounting information follow early seminal studies of either association (value relevance) (Barth, 1994) or information content (Ball and Brown, 1968; Beaver, 1968; Fama et al., 1969). Ball and Brown (1968) and Beaver (1968) suggest that the usefulness of information contained in financial reports can be assessed by analyzing the changes in securities prices around earnings announcements. In an efficient market, security prices adjust quickly and correctly to fully reflect new information (Brown and Warner, 1980; Fama, 1965; Fama et al., 1969; Lev, 1989). As a consequence, the release of new information is reflected in changes in the variability of security prices or trading volume¹² over a short time period around the event (Fama et al., 1969; Kothari, 2001). Variability of security prices or volume reactions to new information in the set of financial reporting data is evidence that the information is useful for investors (Ball and Brown, 1968; Beaver, 1968; Kothari, 2001; Lev, 1989).

Prior studies suggest that earnings, as a measure of firm performance, are the premier information item provided in financial statements (Collins, Maydew, and Weiss, 1997; Francis, Schipper, and Vincent, 2002a; Lev, 1989). The release of earnings information conveys useful information and contributes to the determination of stock prices (Ball and Brown, 1968; Beaver, 1968; DeFond et al., 2007; Francis et al., 2002a; Francis, Schipper, and Vincent, 2002b). Both change and levels of earnings convey useful information and therefore affect stock prices (DeFond et al., 2007; Francis et al., 2002a, 2002b; Landsman and Maydew, 2002; Lev, 1989; Lev and Zarowin, 1999).

The level of earnings is the amount of earnings reported in a given year. The change in earnings is the difference between earnings in a given year and the prior year's earnings, proxying for a surprise element in firm's value and performance (Lev and Zarowin, 1999). The information content literature suggests that more informative accounting information is reflected in greater abnormal returns (Ball and Brown, 1968; Beaver, Lambert, and Morse, 1980). The underlying argument is that greater earnings differences supply a greater surprise effect and therefore lead to greater market reactions (Hora, Tondkar, and McEwen, 2003, 2004; Lev and Zarowin, 1999).

A larger market reaction around earnings announcements has also been interpreted as greater earnings usefulness (Francis et al., 2002a; Lev, 1989). Lev (1989) notes that if the usefulness of earnings information is significant to investors, then earnings should

¹² Both abnormal returns and abnormal trading volume are commonly used to assess the information content of financial information (Beaver, 1968; Cready and Hurtt, 2002; Kothari, 2001; Lev, 1989).

exhibit considerable explanatory power with respect to price revisions around earnings announcements. Conversely, if stock price revisions are found to be unrelated to earnings, then the usefulness of earnings information to investors cannot be great.

Prior to the convergence of accounting standards, research classified cross-country accounting standards differences based on differences in legal systems (e.g., Ball, Kothari, and Robin, 2000; Ball, Robin, and Wu, 2003; La Porta et al., 1998). For example, Australia, Canada, and the U.K. are classified as common law countries (Ball et al., 2000; Hung, 2001). Given that the U.S. is also classified as a common law country, one can argue that these countries have greater similarity with U.S. GAAP than code law countries such as France, Germany, Finland, Argentina, and Italy (Durand and Tarca, 2005).¹³ Prior studies also (Hora et al., 2003, 2004), where micro-uniform countries have accounting systems more aligned to the U.S. accounting system than macro-uniform countries (Hora et al., 2003, 2004). The list of micro-uniform countries is similar to that of common law countries¹⁴ and includes Australia, Hong Kong, Ireland, and the U.K. Given the increased convergence of accounting standards since 2002, research began to classify cross-country accounting into IFRSs and non-IFRSs preparers (e.g., Barth, Landsman, and Lang, 2008; Henry, Lin, and Ya-Wen, 2009; Plumlee and Plumlee, 2008).¹⁵

The different time schedules of IFRSs adoption across groups (firms or countries) and time can lead to different inferences on how the market reacts to financial information. Some common law countries, such us the U.K. and Australia, adopted IFRSs earlier than other common law countries, such as Canada. Some code law countries, such as France and Germany, also adopted IFRSs earlier than other code law countries, such as Korea, Argentina, and Brazil.

The issue of differences in accounting standards across groups (firms or countries) and time leads this study to examine the market reaction around the release of cross-listed earnings on the U.S. market. A number of studies find that the quality of financial reporting under IFRSs is likely to result in higher accounting quality compared to firms applying non-U.S. domestic standards (non-IFRSs) (Barth, 2008; Barth et al., 2008; Barth et al., 2008; Barth et al., 2006; Soderstrom and Sun, 2007).¹⁶ A higher quality of IFRSs financial statements leads to lower investor uncertainty and unreliability about a firm's future cash flows (Dechow, 1994; Francis et al., 2005; Francis, Nanda, and Olsson, 2008), and thus higher

¹³ Compared to common law countries, the demand for accounting income under code law is influenced more by government preferences and less by demand for public disclosure. In code law countries, governments establish and enforce national accounting standards. In comparison, the properties of accounting standards in common law countries are determined primarily in the disclosure market (Ball et al., 2000).

¹⁴ Doupnik and Salter (1993) and Hora et al. (2003, 2004) classify cross-country differences in accounting systems as macro- and micro-uniform, where micro-uniform countries are considered to have accounting systems more similar to the U.S. accounting system than macro-uniform countries. The list of macro-uniform countries is similar to that of code law countries and includes France, Germany, Finland, Argentina, and Italy.

¹⁵ Several studies find that the accounting standards of firms from countries that adopt IFRSs are likely to be more similar to U.S. GAAP, as indicated by lower numbers of reconciliation items (Henry et al., 2009; Plumlee and Plumlee, 2008).

¹⁶ Firms adopting IFRSs have less earnings management, timelier loss recognition, and greater value relevance of earnings (Barth et al., 2008).

market reactions around the release of earnings information are expected (Clinch and Lombardi, 2011; Easley and O'Hara, 2004). If firms with national accounting standards have lower market reaction than firms with IFRSs as issued by the IASB or other versions of IFRSs in home country markets, it is expected that cross-country variations in the use of domestic GAAP, IFRSs as issued by the IASB, and other versions of IFRSs are reflected in the market reactions around the release of earnings information in the U.S. market. The variations are expected to follow home country's financial statements. Therefore, this study expects that the market reaction around the release of earnings information is lower for firms with national accounting standards than firms with IFRSs as issued by the IASB or other versions of IFRSs. Thus, the hypothesis investigated is as follows.

Ha: Market reactions around earnings announcement are greater for firms with IFRSs as issued by the IASB or other versions of IFRSs than for those with national/ domestic accounting standards

4. Sample, data, and research methodology

4.1 Sample selection

The period 2003–2011 is appropriate for this study. The year 2003 is the beginning of the convergence of IFRSs and U.S. GAAP.¹⁷ The period of analysis finishes in 2011 because of the data availability. The sample for this study comprises cross-listed firms listed on the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), or National Association of Securities Dealers and Quotation (NASDAQ) during 2003–2011. The sample for investigating H₁ is selected based on the following criteria:

- 1) Firms are listed on the NYSE, AMEX, or NASDAQ and issue level II and III American depository receipts (ADRs);
- 2) Firms' earnings release are available to determine the event date;
- 3) Firms are listed on the NYSE, AMEX, or NASDAQ during 2003–2011;
- 4) The release of earnings information (the event date) by firms is not potentially confounded by other information or events; and
- 5) Security price data are available to determine market reactions around the release of earnings information.

The following databases are used for the source data in this study. The SEC IDEA (EDGAR) database is used to obtain: 1) a list of cross-listed firms from 2003 to 2011;¹⁸ 2) firm fiscal year-end; and 3) CIK numbers. This study also uses the Osiris database as a complementary source of information. The CIK number is used to collect the CUSIP¹⁹ numbers and the securities identifier (PERMNO) from The Center for Research in

¹⁷ A memorandum of understanding between the Financial Accounting Standards Boards (FASB) and the International Accounting Standards Board (IASB) for converging accounting standards was signed in October 2002 in the Norwalk Agreement (IASB, 2008a).

¹⁸ A list of cross-listed firms is available at http://www.sec.gov/divisions/corpfin/internatl/companies.shtml.

¹⁹ While the company name and CUSIP can change, the GVKEY can be used to track a company over time.

Security Prices (CRSP) and the Compustat database from Wharton Research Data Services (WRDS).²⁰ The five digits PERMNO and event dates are used to download return from the CRSP–Daily Extract with Time Window. The risk–free interest rate (RF, the–one month treasury bill rate) are obtained from the CRSP's from the WRDS. The market index and annual report dates are collected from the Bloomberg database.²¹

4.1 Market Reactions to the Release of Earnings Information

The market reaction to earnings information is investigated by using event study methodology. It is common for an event study to extend the window over more than one day. The argument supporting an extended length of time is related to the uncertainty in identifying exactly when the information becomes available to market participants.²² It is unclear whether cross-listed firms file their annual reports electronically or via mail, and therefore there is uncertainty as to which day the information become publicly available. It is also not generally known whether market participants had the information during trading hours on the day the information was released (Peterson, 1989). Thus, the days around the event date are used to capture the market reactions to the release of earnings information. To address this issue, this study uses an event window from two days before the event (t - 2) to two days after the event (t + 2). Three-, five-, and seven-day cumulative abnormal returns (CAR_{N=3,5,7}) are calculated during this event window.²³

The three-day cumulative abnormal returns (CAR_{N3}) are obtained by adding the abnormal returns from one day before to those one day after the release of earnings information (e.g., Foster, 1986). The five-day cumulative abnormal returns (CAR_{N5}) are obtained by adding abnormal returns from two days before to those two days after the release of earnings information. These cumulative abnormal returns are expressed as (Equation 1):

$$CAR_{N3,5,7} = \sum_{t=1}^{3,5,7} AR_{N_t}$$
(1)

where

 $CAR_{N3,5,7}$ = cumulative abnormal returns for N securities for three- and five-day periods;

²⁰ Rather than using Eventus Software, this study directly calculates the abnormal returns manually from the downloaded market index and return data from the CRSP database using CRSP–Daily Extract with Time Window. Abnormal returns are manually calculated because the market indices used in this study (e.g., S&P and BNYM ADRs Index) are not available in the CRSP database.

²¹ The other two market indexes (the equally–weighted market index and the value–weighted market index) are obtained from CRSP-Daily Extract with Time Window.

²² Cross-listed firms are required to file the annual report in electronic format via SEC's EDGAR. Filing in paper is also permitted by sending or delivering the document to the SEC File Desk between 9 a.m. and 5.30 p.m., Eastern Standard Time. When the document is received and stamped by the SEC, the stamp date may not represent the event date because the document may not be put in the Public Reading Room or become available online until the next day.

²³ Three and five days event periods are commonly used in U.S. stock price studies of foreign companies (Johnson, 1995). Rees (1995) states that five days event window is short enough to reduce the potential for confounding events but wide enough to capture the effects of the reconciliation on prices. The use of a shorter window, three days event window, is aimed at minimizing other factors that may have caused a market reaction (e.g., Kothari and Warner, 2004), allowing greater certainty that any abnormal returns are attributable to the release of reconciliation information.

N = number of securities; and

 AR_{Nt} = average daily abnormal returns for N securities for period t.

A firm's abnormal return (AR_{it}) is the difference between the firm's actual return (R_{it}) and its expected return $(E(R_{it}))^{24}$ during the event window. To calculate actual returns, this study uses simple returns, which are defined as the difference between the security price for security i for period t (P_{it}) relative to the security price for security i for period t - 1 (P_{it-1}).

Comparing various models for estimating parameters for the calculation of expected returns, Armitage (1995) recommends that both the market model and CAPM be used in event study tests because these two most widely used models often produce different results.²⁵ In view of this, this study uses the Black (1972) one-factor CAPM and market model for sensitivity analysis (e.g., Armitage, 1995; Bowman, 1983). The CAPM has been used by prior studies employing cross-sectional analyses (e.g., Jain and Rezaee, 2006).

Prior studies also suggest that methodology based on the market model captures abnormal returns well under various conditions, such as small sample size, non-normality, and non-synchronous trading, when using either monthly and daily security returns (Brown and Warner, 1980, 1985). Brown and Warner (1985) note that methodologies based on the OLS market model and using standard parametric tests work better under a variety of conditions. Additionally, compared to the mean-adjusted model, the market model is more widely used in empirical event studies in accounting and finance (Jain, 1982; Leftwich, 1981; MacKinlay, 1997) and always superior in specification and power for estimating abnormal returns (Armitage, 1995; Binder, 1998; Lee and Varela, 1997). Thus, the market model is also used to calculate the expected returns in this study. The equation to calculate abnormal returns, with expected returns calculated using both the CAPM and the market model, is presented below.

With the expected returns, $E(R_{it})$, determined using the CAPM, the abnormal return for an individual security, AR_{it} , is calculated using Equation 2:

$$AR_{it} = R_{it} - \{R_{f} + \hat{\beta}_{i}(R_{mt} - R_{f})\}$$
(2)

where

 AR_{it} = abnormal return on security i for period t;

 R_{it} = actual return on security i for period t;

t = period during the event window;

 $\hat{\beta}_i$ = the estimated beta for security i, that is, the slope of the regression line relating R_{it} and R_{mt} (Black, 1972; Strong, 1992) using daily share price data for a 200-day period (100 days before and 100 days after the event);

 R_{f} = the 30-day risk-free rate of return from U.S. Treasury bills (T-bills); and

²⁴ Some studies refer to the expected return as the normal return or the estimated return.

²⁵ It is argued that the different results are caused by the use of the CAPM, which is a theoretical model and developed based on a set of assumptions. The other models, such as the market, index, average return, and Fama–MacBeth models, usually provide similar results (e.g., Armitage, 1995; Bowman, 1983).

 R_{mt} = the return on the market index for period t.

Using the market model to determine the expected return, $E(R_{it})$, the abnormal return for an individual security, AR_{it} , is calculated using Equation 3:

$$AR_{it} = R_{it} - (\alpha_{i} + \beta_{i} R_{mt})$$
(3)

where

 AR_{it} = abnormal return on security i for period t;

 R_{it} = actual return on security i for period t;

t = period during the event window;

 α_{i} = estimated intercept for security i;

 $\hat{\beta}_i$ = estimated beta for security i, that is, the slope of the regression line relating R_{it} and R_{mt} using daily share price data for a 200-day period (100 days before and 100 days after the event); and

 R_{mt} = return on market index for period t.

The estimates of $\hat{\alpha}_i$ and $\hat{\beta}_i$ are determined using daily share price data for a 200-day period (100 days before and 100 days after the event).

To examine the hypothesis, whether abnormal returns around the release of earnings of IFRSs adopters are higher than national / domestic adopters, a comparison over time of average CAR is performed. Significantly higher of CAR in the earlier year or period (before the adoption of IFRSs) relative to the later one indicate the increasing information content of earnings information. Before this comparison can be made, the cross-sectional average CAR around the release of earnings information must be calculated (Binder, 1998; Campbell, Lo, and MacKinlay, 1997; Kothari and Warner, 2004; MacKinlay, 1997).²⁶ Following the event study literature (e.g., Kothari and Warner, 2004), the average daily abnormal returns for a sample of N securities of cross-listed firms is calculated by using cross-sectional mean cumulative abnormal returns.

Since it may take time for firms to transition to IFRSs, the information content of earnings information may not increase immediately. Therefore, year-by-year comparisons of abnormal returns may not capture the effect of accounting standards implemented by firms on the information content of earnings information. Thus, to test H_1 , this study compares both the cumulative abnormal returns for longer period, that is, 2003–2005, 2006–2008, and 2009–2011. To support the hypothesis, a significant increase in average cumulative abnormal returns from 2003 to 2011 is necessary.

In dealing with bad (good) news, this study's interest is only the surprise effect of information release and not the sign of the surprise effect from the release of earnings

²⁶ If average daily and cumulative abnormal returns exist around the event, this suggests that earnings information is useful for investors (Binder, 1998; Campbell et al., 1997; Kothari and Warner, 2004; MacKinlay, 1997).

information. Therefore, this study uses the absolute value of abnormal returns to examine the significance of market reactions.²⁷

Table 2 summarises all the variables employed in this study and their measurements.

Table 2 Summary of variables and their measurements							
Variable	Measurement						
Panel A: To Test Hypothesis 1							
Firm-Level Measur	Firm-Level Measure of Abnormal Returns						
Abnormal return	A firm's abnormal return (AR_{it}) is the difference between the firm's						
for individual	actual return (R_{it}) and its expected return $(E(R_{it}))$ during the event						
security (AR _{it})	window.						
Firm-Level Measur	re of Cumulative Abnormal Returns						
Cumulative	An arithmetic additive of abnormal returns from one day before to one						
abnormal returns	day after (three-day event window) and two days before to two days						
for individual	after (five-day event window) the release of earnings information.						
security, three-day	Here CAR _{i3,5} = $\sum_{i,j}^{3,5} AR_{ij}$						
and five-day event	t=1						
window (CAR _{i3,5})							
	where AR_{it} = difference between the actual returns (R_{it}) and the						
	expected returns $E(R_{it})$; R_{it} = difference between the security price						
	for security i for period t (P_{it}) relative to the security price for						
	security i for period t - $1(P_{it-1})$; $E(R_{it}) =$ expected return determined						
	using CAPM and market model with the parameter estimates						
	calculated using daily data for 200 days; and $R_{mt} = S\&P ADRs$						
	Index, developed based on all U.S. stocks from firms listed on the						
	NYSE, AMEX, or NASDAQ, offering either a level II or level III						
	ADRs program (S&P, 2007).						

5. Empirical results

Descriptive statistics for variables used in testing the first hypothesis, CARs, are summarised in Table 3. An unbalanced sample is employed to test the first hypothesis, with 4.829 observations representing 828 firms and an eight-year sample period (2003–2011). The mean CAR_{mm3}, CAR_{mm5}, and CAR_{mm7} are 9.35%, 14.19%, and 18.74% respectively. The value range of CAR_{mm3}, CAR_{mm5}, and CAR_{mm7} is 0.10–138.70%, 0.47% – 166.18, and 0.95 – 229.33%. The figures of mean, standard deviation, minimum, and maximum are similar when CAPM is employed to calculate the cumulative abnormal returns.

²⁷ The use of absolute values removes directionality from the return measures and permits the aggregation of returns with negative and positive abnormal returns (e.g., Meek, 1991; Olibe, 2001).

1						
Variable	CARmm	CARcap	CARmm ₅	CARcapm	CARm	CARcapm
	3	m ₃		5	m ₇	7
Ν	4,829	4,829	4,829	4,829	4,829	4,829
Mean	9.35%	9.32%	14.19%	14.14%	18.74%	18.68%
Standard	0 00%	0.01%	12 71%	12 70%	15 88%	15 85%
Deviation	9.0070	9.0170	12.7170	12.7070	15.0070	15.0570
Minimum	0.10%	0.00%	0.47%	0.27%	0.95%	0.65%
Maximum	138.70%	139.15%	166.18%	166.64%	229.33 %	229.31%

 Table 3 Descriptive statistics: abnormal returns around the release of U.S. GAAP

 quarterly earnings information during 2003–2011

Variable descriptions: CARmm₃= three-day firm-level cumulative abnormal returns calculated using market model; CARmm₃= three-day firm-level cumulative abnormal returns calculated using CAPM; CARmm₅= five-day firm-level cumulative abnormal returns calculated using market model; CAR camp₅= five-day firm-level cumulative abnormal returns calculated using CAPM; CARmm₇= seven-day firm-level cumulative abnormal returns calculated using market model; CAR camp₇= seven-day firm-level cumulative abnormal returns calculated using market model; CARcamp₇= seven-day firm-level cumulative abnormal returns calculated using CAPM; CARmm₇= seven-day firm-level cumulative abnormal returns calculated using CAPM; CARcamp₇= seven-day firm-level cumulative abnormal returns calculated using CAPM;

The results of recording and analysing the information content of earnings information over time 2003–2011 appear in Tables 4. Table 4, Panel A reports the comparison of the three, five, and seven day cumulative abnormal returns (column 3–6) between the two periods. The cumulative abnormal returns of 582 firms in four–years (2,330 observations) for each period are used for this comparison. The statistical significance of the difference between the periods' cumulative abnormal returns obtained using *t*–test. The average cumulative abnormal returns of each period are presented.²⁸ The CAR_{mm3}, CAR_{mm5}, and CAR_{mm7} for the period 2003–2006 are 7.98%, 11.97%, and 15.63% respectively. These CARs for 2003–2006 are statistically higher than for 2007–2011 (CAR_{mm3} = 10.63%, CAR_{mm5} = 16.25%, and CAR_{mm7} = 21.52%) at the 1% level of significance. These values of market model CARs are similar to those of CAPM Cars. The results indicate that overall abnormal returns in 2003–2006 are lower than in 2007–2011. This overtime increase in the cumulative abnormal returns supports this study first hypothesis. The result indicates that the increasing use of IFRSs for the preparation of financial statements over time is priced by the market.

While the results of this study mainly rely on comparing 2003–2006 with 2007–2011 (two period comparisons), the three periods²⁹ and yearly basis comparisons are also presented. When three periods (2003–2005, 2006–2008, and 2009–2011) are compared, the highest value of the cumulative abnormal returns appears in the second period with statistically significant results are found for both comparisons with earlier and later period. The results are presented in Table 4, Panel B. It shows that the cumulative

²⁸ The average cumulative abnormal return is the mean of cross–sectional firms' cumulative abnormal returns of 2,330 observations (582 firms in four–years).

²⁹ It compares the average daily and cumulative abnormal returns for 2003–2005 with 2006–2008 and 2009–2011.

abnormal returns are consistently higher in 2006–2008 (CAR_{mm3} = 11.53%, CAR_{mm5} = 17.54%, and CAR_{mm7} = 23.47%) compared to those in 2003–2005 (CAR_{mm3} = 8.11%, CAR_{mm5} = 12.25%, and CAR_{mm7} = 16.05%) and 2009–2011 (CAR_{mm3} = 8.24%, CAR_{mm5} = 12.53%, and CAR_{mm7} = 16.33%). The differences in these CARs are statistically significant at the 1% level. The results are qualitatively similar when CAPM is employed for the calculation of expected return.

during 2000 2007. three period analysis									
Period	Ν	CARmm	CARcap CARm		CARcap	CARm	CARcap		
		3	m ₃	m 5	m 5	m ₇	m ₇		
Panel A: Two	period	comparison							
2003-2006	2,33	7.98%	7.95%	11.97%	11.92%	15.70%	15.63%		
	0								
2007-2011	2,50	10.63%	10.60%	16.25%	16.21%	21.58%	21.52%		
	0								
(<i>t</i> -test)		-	-10.33***	-	-11.90***	-	-13.13***		
		10.34***		11.86***		13.08***			
Panel B: Three period comparison									
2003-2005	1,72	8.11%	8.08%	12.25%	12.19%	16.05%	15.98%		
	6								
2006-2008	1,69	11.53%	11.50%	17.54%	17.49%	23.47%	23.40%		
	6								
(<i>t</i> -test)		-	-10.54***	-	-11.65***	-	-12.99***		
		10.59***		11.63***		12.98***			
2006-2008	1,69	11.53%	11.50%	17.54%	17.49%	23.47%	23.40%		
	6								
2009-2011	1,40	8.24%	8.23%	12.53%	12.50%	16.33%	16.30%		
	7								
(<i>t</i> -test)		9.74***	9.67***	10.47***	10.44***	11.78***	11.74***		

 Table 4 Comparison of market reactions around the release of earnings information during 2003–2007: three-period analysis

Expected returns are calculated using market model and CAPM. The *t*-test is used to compare whether the mean abnormal returns for 2003–2005 are greater than for 2006–2008 or 2009–2011 and so on.

*** Significant at the 1% level, two-tail test.

Further analyses using yearly trend of cumulative abnormal returns around the release of earnings announcement during 2003–2011 are reported in Table 5.³⁰ The average cumulative abnormal returns presented are the yearly mean of cross–sectional firms' cumulative abnormal returns for the firms' sample. Figure 2 shows the trend of three, five, and seven–day cumulative abnormal returns during 2003–2011. Figures 1

³⁰ Since it may take time for firms to transition to IFRSs, the information content of earnings information may not increase immediately. Therefore, year-by-year comparisons of abnormal returns may not capture the effect of accounting standards implemented by firms on the information content of earnings information. Thus, yearly comparison test of significant is not conducted.

shows that CAR_s in 2008 are higher than in any other year. The trend of $CAR_{3,5,7}$ over 2003–2011 provides further empirical evidence that cumulative abnormal returns decreased from 2008 to 2010, with a small change over time from 2003 to 2007. A slight increase in CAR_s appears for CARs from 2006 to 2007 and 2010 to 2011. The results show that yearly trend in market reaction suggests that the impact of IFRSs on the usefulness of earnings information is not evident from one year to the next. Nonetheless, the results of the yearly comparisons of average abnormal returns are presented to inform the overall trend over time from the beginning year (2003) to the ending year (2011) of the analysis.

Period	Ν	CARmm	CARcap	CARm	CARcap	CARm	CARcap
		3	m ₃	m ₅	m ₅	m ₇	\mathbf{m}_7
2003	56	9.08%	9.06%	13.71%	13.64%	17.63%	17.57%
	1						
2004	57	7.61%	7.59%	11.77%	11.74%	15.69%	15.62%
	7						
2005	58	7.67%	7.64%	11.32%	11.24%	14.91%	14.81%
	8						
2006	60	7.60%	7.57%	11.19%	11.16%	14.68%	14.62%
	4						
2007	55	10.04%	10.03%	14.74%	14.72%	19.54%	19.54%
	7						
2008	53	17.51%	17.43%	27.60%	27.48%	37.46%	37.28%
	6						
2009	50	8.28%	8.25%	12.98%	12.91%	17.12%	17.01%
	0						
2010	46	7.75%	7.73%	11.33%	11.31%	14.69%	14.64%
	2						
2011	44	8.71%	8.72%	13.27%	13.28%	17.16%	17.20%
	5						

 Table 5 Comparison of market reactions around the release of earnings information

 during 2003–2011: yearly analysis

Expected returns are calculated using market model and CAPM. The *t*-test is used to compare whether the mean abnormal returns for 2003-2004 are greater than for 2004-2005 or 2006-2007 and so on.





A plausible interpretation for these results is that the information content of earnings announcement is not solely affected by the use of IFRSs for the preparation of financial statements. U.S. investors may not be familiar with new IFRSs accounting standards adopted by firms in IFRSs-compliant financial statements. As reported in Table 2, the number of firms using IFRSs increased significantly, from 8% in 2003 to 34% in 2005. This significant increase in the number of foreign registrants applying IFRSs may have increased investor uncertainty because of U.S. investors' unfamiliarity with the new financial statements under IFRSs (e.g., Hopkins, 2008). The literature suggests that uncertainty can cause investors to hold securities. If U.S. investors are unfamiliar with accounting practices, then it is difficult for them to analyse financial statements (Barth, 2008; Barth, Clinch, and Shibano, 1999; Bradshaw, Bushee, and Miller, 2004; Covrig, DeFond, and Hung, 2007; Sunder, 2002). Consequently, investors unfamiliar with IFRSscompliant financial statements face greater uncertainty and therefore may be reluctant to trade. Unfamiliar investors would implement price protection by setting a lower bid price if they wanted to buy securities or by setting a higher ask price if they wanted to sell securities, thereby widening the bid-ask spread (e.g., Kim and Verrecchia, 1994; Krinsky and Jason, 1996). Hence the securities of firms applying IFRSs accounting standards can have a lower stock price reaction around the release of earnings information.

As their familiarity with IFRSs increases (e.g., in 2006–2007), investors trade more based on the IFRSs financial information provided in the financial information. The literature suggests that greater conformity with accounting practices familiar to investors allows for better analyses of financial statements (Barth, 2008; Barth et al., 1999; Bradshaw et al., 2004; Covrig et al., 2007; Sunder, 2002). Additionally, the more IFRSscompliant financial statements are used in U.S. capital markets, the more familiar U.S. investors will become with such statements. Investors are more likely to use information with which they are familiar (Bradshaw et al., 2004; Covrig et al., 2007). In the context of this study, this increase in the familiarity of U.S. investors with IFRSs-compliant financial statements leads to lower uncertainty and encourages them to trade based on their analyses of financial information, therefore leading to higher stock prices reactions around the release of earnings information in 2006–2008.

The results can also be explained from the perspective of the quality of financial statements under IFRSs accounting standards. Prior studies suggest that the quality of financial information after adopting IFRSs accounting standards is higher than that before adopting IFRSs (Barth et al., 2008; Barth et al., 2006).³¹ These prior studies support the argument that the higher quality of financial information may be the cause for the greater market reactions around the release of earnings information during 2006–2008 compared to 2003–2005. If the use of IFRSs accounting standards for financial report preparation leads to higher-quality financial reports in the later period than before adopting IFRSs, this higher quality of financial information is expected to translate to higher-quality earnings information, thereby increasing U.S. investors' reliance on the earnings information as a basis for trading decisions (Dechow, 1994; Francis et al., 2005; Francis et al., 2008). A high quality of earnings information reduces investor uncertainty, leading to greater market reactions (Francis et al., 2008), because investors demand higher returns to hold stocks with greater private information (e.g., Daske, 2006; Daske et al., 2008; Easley and O'Hara, 2004). The more IFRSs-compliant financial statements are used in U.S. capital markets, the higher the average quality of the financial statements of foreign registrants, and hence the greater the average market reactions around the release of earnings information. The issues of investor protection and quality of financial information, and other attributes that potentially affect the usefulness of earnings information are examined in the future study.

To check the robustness of this study's findings, sensitivity analyses are performed. They include: 1) the use of quarterly data instead of annual data; 2) Abnormal returns calculated using an alternative market index, namely the CRSP value-weighted index; and 3) the use of Fama-French three factor model in addition to the CAPM and market model for the calculation of expected return. The results of sensitivity analyses are consistently well supporting this study's primary results.

³¹ It is noted that the increasing quality of financial statements after the adoption IFRSs is driven by the higher quality of IFRSs accountings standards relative to domestic accounting standards.

6. Summary, Limitation, and Future Research

This study provides some evidence that the market reaction around the release of earnings increases slightly over time during 2003–2011. This result can be explained by certain studies that address the earnings quality (Barth, 2008; Barth et al., 2008; Barth et al., 2006; Soderstrom and Sun, 2007) and investors' familiarity with the financial statements under IFRSs (e.g., Hopkins, 2008). It is noted that earnings quality increases significantly during 2007-2009. Global economic crisis may explain this result. This factor and other variables that have been documented by prior studies to be associated with market reactions to the release of earnings information have not been addressed in this study. They include earnings change, book value of equity change, firm size, exchange rates, analyst following (e.g., Hora et al., 2004), the market-to-book ratio (e.g., Fama and French, 1993), credit risk, liquidity risk and business risk (e.g., Danckaert, Gaeremynck, and Huyghebaert, 2010). Using multivariate analyses, future research can examine them as control variables to avoid potentially omitted correlated variables and allow for simultaneous testing of the explanations hypothesized.

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