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ERASMUS SCHOOL OF ECONOMICS

Market reaction to IFRS standard for financial instruments: an event study

Master Thesis in MSc Accounting, Auditing and Control

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Date: 30/04/2020

Abstract

This paper examines stock market reactions in Europe to eight events related to the issuance of International Financial Reporting Standard (IFRS) 9: Financial Instruments, in order to assess investors perception of the adoption of IFRS 9. I find a negative mean of stock market reactions in Europe to events related to IFRS 9 issuance, and stock market reaction is more negative for firms with higher quality information prior to IFRS 9 adoption, and for firms with higher information asymmetry prior to IFRS 9 issuance. The findings suggest that investors do not anticipate net benefits from the adoption of IFRS 9. The results also reveal that the stock market reacts more negatively for firms which located in countries with a higher rule of law, consistent with investors expect a stricter application of IFRS 9 in countries with greater enforcement environment. However, the findings do not support that stock market for financial firms reacts to IFRS 9 issuance differently from the stock market for non-financial firms. While standard-setters publish accounting standards with a goal to facilitate investors with financial information for their investment decisions, investors' negative reaction to the issuance of new accounting standard indicates that standard setters should consider investor perceptions when they evaluate the issuance of accounting standard, additional guidance and explanations regarding new accounting standard might be needed.

Keywords: Financial instruments; IFRS 9; Investors; Impairment model

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1. Introduction

On July 24, 2014, the International Accounting Standards Board (IASB) announced the publication of the final version of IFRS 9: Financial Instruments. The publication of IFRS 9 anticipated by the parties to address concerns and problems that exposed for the accounting of financial instruments under IAS 39 Financial Instruments: Recognition and Measurement. The IAS 39 has caused a lot of controversies since it was issued in 1998, even though it has been revised for several times. One of the main controversies arising out of IAS 39 is the application of fair value accounting to financial instruments. During the period of the global financial crisis, fair value accounting experienced uncertainty and subjectivity because assets/liabilities could not be measured reliably in inactive markets. Moreover, fair value accounting is widely criticised for making pro-cyclicality of the financial market worse during the crisis. When the European Commission (EC) was on the process to endorse IFRS regime in Europe, due to the concerns on the application of fair value accounting on financial instruments, the EC decided to endorse IAS 39 in Europe with fair value option carve-out. Furthermore, the leaders of Group of 20 (G20) recommended standard-setting bodies to improve accounting standards for financial instruments by addressing all the concerns on the fair value accounting application and reducing the complexity of accounting standards for practice. Responding to the controversy around the accounting standard for financial instruments and recommendations from G20, after making significant changes on the requirements for accounting of financial instruments, the IASB issued the final version of IFRS 9.

According to the IASB, there are significant changes in IFRS 9 regarding requirements on the accounting of financial instruments. Such as requirements on the classification and measurement of financial assets are less complex and more practical, new impairment model (the expected credit loss model) was introduced for impairment measurement, 'own credit' problem for financial liability was addressed. Since the IASB began the project to issue a new accounting standard for financial instruments, there were intensive discussions from standard-setting bodies, regulatory institutions and auditing firms about the measurements and rules in the new accounting standard for financial instruments. However, I find very limited academic research on IFRS 9. The application of IFRS 9 is less than one year, there is no available data to research the realised effect of IFRS 9 adoption on accounting, but the developed theory and

methodology in prior literature provide a ground to make a research on the adoption of IFRS 9 from investors' perspective.

The main research question will be addressed in this study is:

How would investors perceive the adoption of IFRS 9: Financial Instruments?

In order to gain inferences for this research question, the following sub-question has been investigated:

Do investors in financial institutions have a different perception of IFRS 9 adoption from investors in non-financial firms?

Do specific characteristics affect investors' perception of IFRS 9 adoption?

Prior literature made intensive research on the mandatory adoption of IFRS as an entire set in 2005 (e.g., Barth, Landsman and Lang 2008; Daske, Hail, Leuz and Verdi 2008; Armstrong, Barth, Jagolinzer and Riedl 2010; Horton, G. Serafeim and I. Serafeim 2012), but there is limited research on the adoption of individual IFRS standards. Furthermore, although a few prior research has studied the adoption of IFRS 9 (e.g., Onali and Ginesti 2014; and Onali, Ginesti, and Ballestra 2017), they did not identify the significant changes on IFRS 9 for the accounting of financial instruments, and no analyses for empirical evidence on the effects of IFRS 9 adoption in prior studies. This study identifies the significant changes in IFRS 9 on accounting for financial instruments and analyses the expected impacts of IFRS 9 adoption. I also provide analyses for empirical evidence on prior research regarding the actual effects of new requirements under IFRS 9 on accounting for financial instruments. This study also extends prior literature regarding assessing investor perceptions by examining the stock market reactions to related events.

Additionally, prior studies find net benefits from mandatory adoption of IFRS as an entire set (e.g., Barth et al. 2008; and Daske et al. 2008) or expected net benefits for mandatory adoption of IFRS as an entire set from investors' view (Armstrong et al. 2010; and Joos &

Leung 2013), but findings in my study indicate that investors do not expect IFRS 9 adoption is beneficial, which suggest that inferences from research on IFRS adoption as an entire set might not be applicable for the adoption of individual IFRS standard. This study is also relevant with the literature for the effects of changes of accounting standards on the accounting of financial industry (e.g., Perez and Saurina 2008; and Gebhardt & Novotny Farkas 2011), from investors' perspective, this study reveals that investors in the financial industry do not perceive differently from investors in the non-financial industry regarding the adoption of IFRS 9.

Given the empirical results and findings revealed in this paper, I believe my findings are applicable for policymakers, specifically, the standard-setting bodies. If accounting standards aim to bring comparable and high quality of financial information to investors in order to enable them to identify opportunities and risks for making good investment decisions, the standard-setting bodies should consider how investors perceive the effects of the adoption of accounting standards on their investment, prior to the issuance of the final version of accounting standards. The findings also suggesting investors continuously assess the impacts of issuance of accounting standards during the entire adoption process, the standard-setting bodies could consider whether additional guidance or explanations for the issuance of accounting standards should be provided. Furthermore, the standard-setting bodies could take investors' perception into account when they evaluate the practicality and implementation of accounting standards.

This study attempts to provide empirical evidence on how investors perceive the adoption of IFRS 9: Financial Instruments, in Europe. Following the manner of prior research (Armstrong et al. 2010; Joos & Leung 2013; Onali et al. 2017), I examine stock market reactions in Europe to events associated with the likelihood of IFRS 9 issuance. Stock market reaction to events related to issuance of new accounting standard relies on how investors perceive the adoption of new accounting standard (Leftwich 1981).

If investors perceive the adoption of IFRS 9 as costly (beneficial), stock market reaction to events that increasing (decreasing) the likelihood of IFRS 9 issuance anticipated to be negative. This study includes an analysis of variances in the stock market reactions for which I make two hypotheses. I predict in one of the hypotheses that stock market for financial institutions reacts stronger than the stock market for non-financial firms. The other hypothesis is specific characteristics are expected to affect the stock market reactions to events that affect the likelihood of IFRS 9 issuance, specific characteristics related to information quality preceding IFRS 9 issuance, information asymmetry preceding IFRS 9 issuance and enforcement environment.

I identify eight events within the time window between November 12, 2009, and July 24, 2014, that affect the probability of IFRS 9 issuance. The market-adjusted value-weighted returns ($MAAR_e$) for each event conducted to measure stock market reactions to these events, the sample includes all EU firms that adopt IFRS regime within 18 EU country. I examine whether specific characteristics affect the stock market reaction to related events by analyzing cross-sectional variances. The three-day cumulative abnormal return (CAR_{ie}) conducted to measure the stock market reaction to IFRS 9 issuance events. Specific characteristics related to information quality preceding IFRS 9 issuance are estimated by whether firm cross-listed on the U.S., whether firm lists on several exchanges and the size of firm. A dummy variable based on two-digit SIC code used to identify financial institutions. Specific factors relating to information asymmetry preceding IFRS 9 issuance are estimated by turnover rates of the firm, closely-held shares of the firm and bid-ask spreads of the firm. Rule of law index applied to measure enforcement environment of the country where firm located.

The results reveal that the stock market in Europe reacts negatively to events associated with the probability of IFRS 9 issuance, which is consistent with investors do not expect net benefits from the adoption of IFRS 9. I also find that the European stock market reacts more negatively for firms with higher quality information prior to IFRS 9 issuance, and for firms with higher information asymmetry prior to IFRS 9 issuance. The empirical results also show a more negative stock market reaction to IFRS 9 issuance events for firms which located on the country with higher rule of law, which suggesting investors do not anticipate the IFRS 9 adoption as beneficial. The findings support the hypothesis that specific characteristics

relating to pre-adoption information quality, pre-adoption information asymmetry and enforcement could affect stock market reactions to events that affect the likelihood of IFRS 9 issuance. However, the findings do not show a more negative or more positive stock market reaction in financial institutions, indicating that the stock market for financial institutions does not react stronger than the stock market for non-financial firms to events related to the likelihood of IFRS 9 issuance.

The remainder of this paper is structured as follows. Section 2 elaborates the theory of capital market efficiency and related concepts of fair value accounting. Section 3 discusses the background, key issues related to fair value accounting and key issues related to IFRS 9. Section 4 elaborates event selection process and assessments for identified events. Section 5 summarizes related theory and empirical literature for hypotheses developments. Section 6 presents the sample selection and research design. Descriptive statistics and empirical results are presented in Section 7. Finally, I draw conclusions according to results and findings in Section 8.

2. Theoretical Framework

This paper tests the stock market reactions to events that lead to IFRS 9 issuance in order to gain insights into investors' perceptions of IFRS 9 issuance. It follows by an elaborate discussion of academic theories and application of this methodology by prior researches. The following section will be indicated in two main theoretical fields. Firstly, developments in the theory of capital market efficiency provide justifications for assessing investor perceptions by examining stock market reactions. Secondly, in order to understand the developments of IFRSs for financial instruments, it is necessary to discuss the concept of fair value accounting.

2.1 Capital market efficiency

The methodology being used in this study is grounded on the capital market efficiency theory. Under efficient market hypothesis, when market is "perfect", assets are priced based on an equilibrium of expected rate of returns over a certain time period. Therefore, when market is efficient, asset price returns to equilibrium quickly after new information becomes available

(Ball, 1972). In a prior research, Ball and Brown (1968) also pointed out that when capital market is efficient, capital market adjusts the asset price fully on all available information, thus, instantaneous and unbiased market prices respond to new information when they become publicly available.

In accordance to how capital market adjusts prices efficiently to publicly available information investors have formed their expectations for the introduction of the potential accounting standard. Furthermore, Cornett, Rezaee, & Tehranian (1996) suggest that when new information, which relates to criticisms of newly introduced accounting standard and responses to criticisms from standard-setting board, becomes publicly available, investors will estimate potential net benefits or costs associated with adoption of new accounting standard and revise their expectations. They will adjust the share prices when they revise their expectations. Therefore, if events leading to new accounting standard adoption convey such new information to investors, significant share-price adjustments could be observed in association with new information that becomes publicly available. Hence, the observed share-price adjustments associated with events leading to adoption of new accounting standard could be applied to assess investor perceptions for the adoption of new accounting standard.

This methodology has been applied in prior researches to study the investor perceptions of new accounting standards adoption. Armstrong et al. (2010) assessed how investors react to mandatory adoption of IFRS in Europe by examining stock market reactions to events leading to mandatory adoption of IFRS in Europe. Their research observed that stock markets react positively to mandatory IFRS adoption only for firms with lower pre-adoption quality and higher pre-adoption information asymmetry.

Aside from assessing investor perceptions regarding the adoption of entire setting of accounting standards, the methodology has also been used to assess how investors perceive the adoption of a single accounting standard. Cornett et al. (1996) applied this methodology to evaluate investor perceptions of issuance of fair value accounting (FVA) rules, with a focus on financial institutions in the US, where the newly issued FVA rules by the US FASB are SFAS No. 105, SFAS No. 107, and SFAS No. 115. The study showed that stock price

reactions to events that increasing (decreasing) likelihood of issuing new FVA rules are negative (positive), which are interpreted as investors perceive the costs for new FVA rules issuance outweigh benefits.

By using the same methodology, Onali and Ginesti (2014) studied how stock markets react to IFRS 9 adoption events in EU to capture investor perceptions of IFRS 9 adoption, and potential impacts of national characteristics on stock market reactions. They observed positive and significant market reactions to events that increase the likelihood of IFRS 9 issuance, which suggests that investors perceive the adoption of IFRS 9 is beneficial. In another research, Onali et al. (2017) assessed the effects of firm-specific factors on investor perceptions of IFRS 9 adoption by examining the association between stock market reactions to IFRS 9 adoption events and firm-specific factors. Firm-specific factors in the study refer to information quality before adoption and information asymmetry before adoption. The research showed negative stock market reactions to events associated with IFRS 9 adoption, for firms with lower pre-adoption information quality and higher pre-adoption information asymmetry. The findings suggest that investors for such firms perceive the costs for IFRS 9 adoption outweigh benefits.

In summary, the theory of capital market efficiency provides sufficient justification for studying investor perceptions of accounting standard adoption by examining stock price reactions. Additionally, this methodology has been applied extensively in prior researches for the issuance of new accounting standards, which provide the foundation for this study to examine stock price reactions to the issuance of IFRS 9.

2.2 **Fair value accounting (FVA)**

This section will elaborately discuss the concepts of fair value accounting and connection between fair value accounting and accounting standard for financial instruments. Before the issuance of IFRS 9, accounting standard applied for financial instruments was IAS 39. The heavy criticisms from interested parties on IAS 39 enabled the IASB to publish IFRS 9 for the accounting for financial instruments. One of the most serious criticisms is about applications

of FVA for financial instruments, especially since the beginning of the financial crisis in 2008 (Menicucci, 2015a). In order to understand the issues addressed in accounting for financial instruments under IAS 39, it is necessary to discuss related concepts of FVA.

Fair value accounting is an accounting measurement approach broadly applied by both the IASB (IAS and IFRS) and FASB (U.S. GAAP). Both sets of accounting standards require firms to systematically apply for FVA to measure various assets and liabilities, especially for financial instruments. However, fair value is not a new concept. After the 1980s, fair value measurement started to be used more commonly since issues of historical cost measurement were found in the savings and loans crisis in the US. After SEC requested an accounting standard to recognise several debt securities at market value, FVA has developed to be the main measurement for financial instruments, then gradually been used to measure non-financial assets/liabilities (Menicucci, 2015a).

Since the middle of the 1980s, both the IASB and FASB worked together to broadly extend the use of fair value measurement in the accounting standards with the intention to replace the use of historical cost measurement. Even though the IASB began to implement fair value measurement in different accounting standards, there were no definition and framework for fair value until the issuance of IFRS 13: Fair Value Measurement by the IASB in 2011 (Menicucci, 2015a). Under IFRS 13, fair value was defined as an exit price from a seller perspective, which refers to "a price that would be received to sell an asset or paid to transfer a liability, between market participants in an orderly transaction at the measurement date" (IFRS 13). This definition authorizes that fair value of an asset to be determined by the market price if such an asset could be traded in an open market transaction.

3. Background

This following chapter discusses the background related to the research question. First, it briefly introduces IFRS standards due process. The literature then moves to explanations for key issues related to FVA, followed by detailed information of fair value hierarchy, inactive markets during financial crisis and pro-cyclicality of FVA. EC carve-out fair value option and

recommendations from G20 are discussed elaborately. Finally, the focus moves to key issues related to IFRS 9, which refer to classification and measurement of financial assets, impairment measurement for financial instruments, and the hedge accounting.

3.1   IFRS standards due process

The IASB has a general due process to set a new standard. The issuances of both IAS 39 and IFRS 9 follow this general due process. Therefore, the events related to the due process of IFRS 9 are the most important for the issuance of IFRS 9. International Financial Reporting Standard (IFRS) is a single setting of accounting standards which are globally accepted, understandable, enforceable and high-quality. The setting of IFRS Standards is accomplished by the International Accounting Standards Board (IASB). The IASB is constituted of experts who are major in accounting, such as specialists in auditing, financial reports and accounting education. The board works as an independent group and takes responsibilities of developing and issuing IFRS Standards (IFRS Foundation, 2019a). Under the general due process, the board has a completed review and consultation every five years to develop its work project plan which sets the schedule of developing global accounting standard.

The board could add topics to the work plan when there are urgent issues have to be concerned, or when there are issues addressed in the Post-implementation Reviews of standards (IFRS Foundation, 2019b). Accordingly, the board begins a standard-setting project with research on a related issue, it would publish the research results in a discussion paper including the identified issues, alternative solutions and recommended decisions. Following up, the board collects feedback from other institutions and individuals for the published discussion paper. Once the board collects sufficient evidence which shows the materiality of the accounting issues, and practical solutions, they would decide to either amend the existing accounting standard or issue a new one. Afterwards, the board would publish an exposure draft for the decided document to the public after having a comprehensive review for the research program. Finally, the board consults this exposure draft on a broad range with global stakeholders, after taking all the comments and concerns into account, it publishes the refined exposure draft as an amendment or as a new accounting standard (IFRS Foundation, 2019b).

The IASB needs to maintain the existing accounting standard and provide the entities with guidelines to exercise the new accounting standard. The board needs to consult with the public for the implementation of newly issuing accounting standards, subsequently, they consider whether further amendments or guidelines are needed to solve the implementation problem. The board would make a Post-Implementation Review after implementing the accounting standard for years, the board would decide whether to start a new research project on related issue based on the assessment from Post-implementation Review (IFRS Foundation, 2019b).

3.2   Key issues related to fair value accounting (FVA)

This section will elaborately discuss the measurement of fair value under IFRSs, due to IFRS 13 provides a single definition and framework for fair value while definitions and frameworks for fair value under IFRSs are various before the issuance of IFRS 13, the discussion for fair value measurement is based on IFRS 13. The issues about fair value measurement which are exposed in the global financial crisis are addressed in this section as well.

3.2.1   Fair value hierarchy

IFRS 13 introduces a 'fair value hierarchy' approach which classifies inputs into three levels to be used in the valuation of fair value. Level 1 inputs are the quoted prices for identical assets/liabilities in an active market at the measurement date (IFRS 13). Such quoted prices are the most reliable valuation for fair value, they are used to measure fair value only if available. Level 1 inputs are fully observable inputs because all market participants could observe quoted price directly (Menicucci, 2015a).

Level 1 inputs are not available if the asset/liability is not traded in an active market. Then the fair value is measured based on level 2 inputs which are other observable inputs that not included in level 1, either directly or indirectly. Level 2 inputs encompass quoted prices for similar items in active markets, quoted prices for identical or similar items that are observable in inactive markets. Level 2 also includes other observable inputs other than quoted prices, such as credit spreads (IFRS 13).

When there is only an inactive market or even no market to trade the item, neither level 1 inputs nor level 2 inputs are available. Then level 3 inputs, refer to unobservable inputs, would be used to measure fair value. Normally, level 3 inputs developed by the firms by implementing the model which consider the most relevant information that is available under the circumstance. The model could include firms' internal data. Hence, taking into account the unobservable inputs are not observable in the market, and firms' internal data, level 3 inputs provide more opportunity for management discretion than other two levels (Menicucci, 2015a).

Consider the fair value hierarchy approach under the occasion of the financial crisis, liquidity of market activities for assets/liabilities in many second markets decreases substantially, liquidity even dries up under some circumstances. The initial inputs that are used to measure the fair value of instruments might not be available due to the declining liquidity. The inputs available under financial crisis to measure fair value might move from level 1 to level 2 or even to level 3. The fair value measurement for a significant number of instruments is determined by the level 3 inputs. However, instruments are measured at fair value with level 3 inputs, which still could be an inappropriate measurement under the financial crisis due to no market participants is willing to pay such amount (Menicucci, 2005).

Consequently, the fair value hierarchy approach under IFRSs provides a reliable and relevant fair value measurement for instruments when markets work as normal. If markets are in distress or disorder, such as financial crisis, it would be doubtful to measure fair value with fair value hierarchy approach, specifically taking into account the management discretion for unobservable inputs or assumptions in level 3.

3.2.2   Inactive markets during financial crisis

During the period of the financial crisis, transaction volumes decrease significantly in the markets, or there are no real market activities for certain complex financial instruments (Menicucci, 2015a). It is difficult to measure assets/liabilities at fair value reliably due to

market prices for certain assets/liabilities are not observable. Therefore, the measurement of assets/liabilities which are measured at fair value depends on the estimated fair value which determined by applying valuation model by firms when markets are inactive during the crisis.

As previously mentioned, when firms use valuation models to estimate fair value, distressed market condition limits the availability of observable market data, unobservable market data or even internal data widely used in the valuation model. Thus, fair value measurement based on the valuation model, which requires significant judgements and managerial discretion by firms. Moreover, firms need to make many assumptions to implement the valuation model for fair value. All these possible impacts could introduce uncertainty and subjectivity into fair value measurement for assets/liabilities when markets are inactive, which would make unreliable fair value measurement in distressed market (Menicucci 2015a).

3.2.3 Pro-cyclicality of fair value accounting (FVA)

Another main criticism of FVA is that it could exacerbate pro-cyclicality of the financial market. Pro-cyclicality refers to an exacerbation of normal fluctuations in the financial market, it could appear on both boom and bust period, and it could result in much more volatility for the financial system or even instability for the financial market (Menicucci, 2015b).

When the firms apply FVA to measure their assets/liabilities, book values of assets/liabilities reflect the market price of these items, assets are priced based on their fair values which are unreliable measurement during the crisis. In the boom period, firms' profits are overstated, assets are overpriced due to biased fair value in the markets. Therefore, firms would write-up their assets and are motivated to raise their leverage, they are reluctant to raise capital reserves which are prepared for burst time. In the burst period, the fair value of assets declines significantly which leads to a huge write-down of assets for firms. Firms are forced to sell their assets at a lower price or even at fire-sale prices in illiquid markets in order to raise capital to meet regulatory capital requirement. These fire-sale prices push the market prices for assets declining further which would be used by other firms to measure their assets.

Consequently, these forced transactions add more volatility to the market and drain liquidity for the market, which, later on, lead to the further declining of prices, reduction of investors' confidence on the market, and deduction of financial stability. Therefore, the application of FVA for financial instruments is considered as pro-cyclical because it exacerbates volatility or even results in instability in financial markets (Menicucci, 2015b).

In summary, the application of FVA after the beginning of the financial crisis in 2008 shows the consequences of implementing FVA in distressed markets, concerns focus on FVA in inactive markets and potential pro-cyclical effects of FVA. Many interested parties call for improvement for accounting standards for financial instruments.

3.3   EC carve-out fair value option

Since the FASB and IASB led the reform on fair value measurement in the accounting system, the accounting standards which are newly set by or amended by them extend the use of fair value to measure assets and liabilities, especially for financial instruments (Menicucci, 2015a). when IAS 39 was reissued in December 2003, the IASB provided firms with full fair value option which allowed firms to designate to measure any financial instruments at fair value, with changes in fair value recognized through profit or loss (FVPL). The amendment of fair value option permits broader use of FVA to measure financial instruments (IAS 39).

However, as previously mentioned, the application of FVA for financial instruments are severely criticized. Besides, the European Commission (EC) was on the process to endorse IFRS standards in Europe since the European Parliament announced to adopt IFRS Standards for all listed firms in Europe in 2002. Main arguments about endorsing IFRSs in Europe are on IAS 39 and IAS 32. The European Central Bank and Basel Committee also addressed the concerns on FVA for financial institutions. Under such pressure, the IASB responded with the issuance of the revised IAS 39 in December 2003. But the concerns related to fair value option and hedge accounting under IAS 39 remained unsolved in the revision of IAS 39. The EC decided to endorse IFRSs in September 2003 with the exception of IAS 32 and IAS 39 (EC 2004).

In response to the controversy about IAS 39 during IFRSs endorsement in Europe, in April 2004, the IASB proposed to limit the use of fair value option for the financial instrument by amending IAS 39. Accordingly, requirements on fair value option in IAS 39 are uncertain during that time. Consider the endorsement process of IFRSs in Europe, on November 2004, the EC announced to endorse IAS 39 but with fair value option carve-out and the hedge accounting carve-out (EC 2005). The endorsement of IAS 39 by the EC with these two carve-outs, which imposed huge pressure on the IASB regarding the development of IFRSs for financial instruments.

3.4   **Recommendations from G20**

The financial crisis in 2008 generated severe disruptions to global financial markets and slow down the growth of the world economy. To come up with solutions for challenges followed the global financial crisis, the leaders of Group of 20 (G20) held a meeting in November 2008. G20 leaders came to an agreement on five common principles and set up a work plan for implementations. Under one out of the five common principles, G20 leaders called for accounting standards-setting bodies to take actions by March 2009 to enhance transparency and accountability of financial information (White House News, 2008). Later, G20 leaders held another meeting on April 2009 in London in order to review and supervise the implementation of recommendations which they made on the mentioned meeting. They also provided more details on recommendations for the enhancement of transparency and accountability on financial information (G20, 2009).

The accounting standards setting bodies are recommended by the G20 leaders to revise the framework for FVA, to consider fair value measurement of financial instruments in illiquid markets, and valuation of financial instruments by taking into account time horizon that investors intend to hold. Accounting setting bodies should improve accounting standards for the financial instruments by addressing the above-mentioned concerns. Additionally, since financial reporting preparers complained about the complexity of IAS 39 implementation, G20 called for accounting standards-setting bodies to reduce such complexity (IASB, 2008).

In addition, accounting standards regarding requirements on recognition of loan loss provision for banks should also be improved, more information regarding credit risks of financial institutions should be included when recognizing loan loss provision. More disclosures about provisions, off-balance sheet items and uncertainty related to valuation should be provided in the accounting information. G20 leaders also called for progress towards convergence with global accounting standards which aimed to develop a single set of global accounting standards with high quality (IASB, 2008). G20 recommendations regarding transparency and accountability enable the IASB to accelerate the development of IFRSs for financial instruments.

3.5   Key issues related to IFRS 9

As previously mentioned, criticisms on IAS 39 are more severe after the financial crisis in 2008, even though the IASB has amended IAS 39 for times when issues emerged from the implementation, the issues addressed in IAS 39 are not resolved by the amendments. In addition, G20 leaders, FCAG (Financial Crisis Advisory Group) and other interest parties all called for accounting standard setters to improve the accounting standards for financial instruments. Moreover, progress towards convergence for global accounting standards was addressed by the parties as well.

Responding to these recommendations, the IASB immediately worked jointly with the U.S. FASB and other accounting standard-setting bodies with an attempt to develop a single set of the global accounting standard for financial instruments, which also aimed to address the issues in accounting standard for the financial instrument. However, the IASB found significant divergences for requirements on impairments for financial instruments between IFRSs and US GAAP. The IASB needed to make fundamental and complex changes to the IAS 39 in order to meet convergence with US GAAP. Hence, in order to improve accounting standards for financial instruments rapidly, and to achieve the convergence with US GAAP for accounting for financial instruments, the IASB decided to set up a comprehensive project which would issue IFRS 9 to replace IAS 39 for financial instruments (IASB, 2009a).

The IASB divided the project of publishing IFRS 9 to replace IAS 39 into three phases. Phase 1 refers to the classification and measurement for financial assets, phase 2 concerns with the

impairment measurement for financial instruments; and phase 3 deal with the issues addressed in hedge accounting for financial instruments (IASB, 2009b).

3.5.1   Classification and measurement for financial assets

As part of the project to replace IAS 39 with IFRS 9, the IASB published IFRS 9: Financial Instruments, which introduced new requirements on classification and measurement for financial assets on November 12, 2009. This initial version takes measures to reduce the complexities of classification and measurement for financial assets (IASB, 2009b).

Based on the new standard, after the initial recognition of financial assets, all financial assets are classified into either amortised cost measurement or fair value measurement. Classifications of assets determine the measurements of assets. When financial assets are classified into fair value measurement, they are measured at fair value, with changes of fair value recognized through profit or loss (FVPL), or with changes of fair value recognized through other comprehensive income (FVOCI) (PWC, 2017). The classification and measurements for financial assets depend on two criteria: a firm's business model and contractual cash flow characteristics of related financial assets. Firm's business model refers to whether firms hold such financial asset to either collect contractual cash flows from the financial asset or selling the financial asset, or both. Contractual cash flow characteristics of financial assets refer to whether only solely payments of principal and interest (SPPI) are contained in contractual cash flows (IASB, 2014).

Under the requirements of IAS 39, subsequent to initial recognition of financial assets, financial assets are classified into four different groups: FVPL, available-for-sale financial asset, loans and receivables, and held-to-maturity investments. The IAS 39 requires different criteria and measurements for each group, each criterion is based on the nature of financial assets, the use of financial assets, and choice of management (IAS 39).Therefore, taking into account rules of classification and measurement for financial assets under IAS 39, new requirements under IFRS 9 regarding classification and measurement for financial assets are expected to result in less complexity for understanding and implementation.

3.5.2   Financial liabilities: 'own credit' changes

As previously mentioned, one of the main controversies on IAS 39 is requirements of fair value option. However, the IFRS 9 does not make fundamental changes on requirements for fair value option. The new standard allows firms to use fair value option to measure financial assets and liabilities if the application of fair value option could substantially reduce or remove accounting mismatch (IFRS 9).

Nevertheless, when firms select to apply fair value option for financial liabilities, 'own credit' problem emerges from requirements of IAS 39. 'Own credit' problem refers to volatility in profit and loss which resulted from recognition of gains/losses in profit and loss due to changes in of firms' own credit risk. When firms measure their debts at fair value, the increase of their own credit risk (own credit) would result in declining of fair value for the debts, which lead to the recognition of gains in profit and loss (IASB, 2014). The recognitions of such gains are substantial in profit and loss during the global financial crisis. Many financial information users and others criticize this measurement as counterintuitive and confusing (McConnell, 2014).

To address the issues in accounting for 'own credit' problem, the IASB reissued IFRS 9 with additional amendments which accounting for financial liabilities, on October 28, 2010. Regarding classification and measurement for financial instruments, phase 1 of the project to replace IAS 39 with IFRS 9 is completed by this reissuance. Amendment does not remove fair value option for financial liabilities because financial information users report that changes in fair value of financial liabilities can signal changes in firms' own credit risk in advance (IASB, 2014). On the other hand, changes in the fair value of debt resulted from changes in firms' own credit risk would be recognized through other comprehensive income (OCI) under IFRS 9. Thus, volatility in profit and loss due to changes in firms' own credit could be removed under IFRS 9 (McConnell, 2014).

3.5.3   Impairment model: expected loss model

Since the beginning of the financial crisis, another critical issue emerged from the implementation of IAS 39, that is impairment loss recognition of financial instruments. The impairment model under IAS 39 called the incurred loss model (ILM). Impairment losses are recognized through loss allowance (provision) account in the income statement and loss reserve account on the balance sheet. Under ILM, impairment losses are only recognized if there is objective evidence that the probability of impairment loss of financial instrument is at least 70% (IAS 39). In practice, firms always recognize impairment loss until the default occurs. When firms measure impairment losses, ILM only permits the use of historical and current information, forward-looking information of future events are not allowed. As a result, ILM was criticized for delay the recognition of credit losses on financial instruments, and insufficient recognition of loss provisions and loss reserves, especially for banks' loans during the financial crisis (Gomaa, Kanagaretnam, Mestelman, & Shehata, 2019). Additionally, ILM for impairment loss recognition considered as pro-cyclical because it results in a lower level of loss reserves being recognized in good times that are insufficient to absorb losses in bad times (Hashim, Li, & O'Hanlon, 2016).

There is also criticism on ILM with earnings management, in which management uses ILM to postpone the losses recognition. Moreover, investors strongly stated their confusion on that IAS 39 requires impairment measurement differentiates based on the classification of financial instruments. When financial instruments are equally credit-impaired which should make equal impairment recognition, but under IAS 39 requirements, different impairment recognition with different impairment models because financial instruments are classified into different groups. (Lloyd, 2014).

In response to the issues addressed in impairment measurement under IAS 39, the IASB made fundamental changes in accounting for impairment of financial instruments in IFRS 9. On March 07, 2013, the IASB published an exposure draft which proposed a new impairment model to account impairment recognition for financial instruments. When the IASB issued the final version of IFRS 9 in July 2014, it includes that amendment of the new impairment model, which called the expected loss model (ELM) (IASB, 2014).

Under ELM, credit loss refers to the present value of cash shortfalls under all the default occasions. Under this model, when firm purchases or originates the financial instrument initially, a firm is required to recognize 12-month expected credit losses immediately in profit and loss and to set up loss allowance as well. The 12-month expected credit losses are based on possible default occasions on the financial instrument within the time period of 12 months after the reporting date. After initial recognition of expected credit losses, a firm would be required to measure loss allowance based on full lifetime expected credit losses only if credit risk of the financial instrument increases significantly. The full lifetime expected credit losses are based on all possible default occasions throughout the whole life of financial instrument (IASB, 2014). Consequently, ELM attempts to recognize more timely loss allowances and more adequate loss reserves.

Under ELM, regarding how to assess credit risks of financial instruments increase significantly, IFRS 9 does not define which probability of default on a financial instrument as a significant increase in default risk. Firms make such judgment by making use of different methods (IASB, 2014). When firms measure expected credit losses under ELM, IFRS 9 requires firms to include not only historical information and current information but also information about the forecast of future events. As a result, ELM is considered as a forward-looking model (Lloyd, 2014). However, the IASB does not provide firms with explicit methods to measure expected credit losses. Firms can use data from different sources which might even be internal data (IASB, 2014).

ELM allows firms to include forward-looking information of expected future events in expected credit losses measurement, which intends to develop timely loss allowance recognition and more adequate loss reserve recognition. However, IFRS 9 does not provide explicit requirements for firms to measure credit risks and expected credit losses for financial instruments under ELM. Firms make many judgments and assessments for credit risks and expected credit losses measurement with the forward-looking information and internal data. Thus, there are concerns that ELM provides more flexibility for firms to exercise management discretions, which could result in management opportunistic behavior (Gomaa et al., 2019). Furthermore, IFRS 9 does not require impairment measurement of financial instrument based on the classification of that financial instrument. The new impairment model (ELM) provides

financial instruments with the same approach to measure impairment loss, which disregards the type of financial instruments (IASB, 2014).

3.5.4 The hedge accounting

The hedge accounting requirements under IAS 39 are criticized to be impractical for European banks regarding how banks manage their assets/liabilities. The restrictions imposed by IAS 39 on hedges and hedge effectiveness limit firms to apply hedge accounting (IASB, 2014). The last phase to complete the project to replace IAS 39 with IFRS 9 dealt with requirements on hedge accounting. The IASB introduced new hedge accounting requirements in IFRS 9 by reissuing IFRS 9 with the amendment on hedge accounting in November 2013. The requirements on hedge accounting remain the same as the amendment, when the IASB published the final version of IFRS 9 in July 2014 (IFRS 9).

Firms are always exposed to various risks in their business, such as interest rate risk or foreign exchange risk so that hedging is used by firms to manage these risks (PWC, 2016). When firms hedging by making use of financial instruments, and those risks which hedged by firms could have impacts on profit or loss, or OCI. Firms could reflect the effects of their hedging (risk management) activities on the financial statements by applying hedge accounting (IASB, 2014). Thus, if firms do not apply hedge accounting or apply hedge accounting inappropriately due to requirements on accounting standards, financial information users could not obtain sufficient information to assess firms' risk management activities.

IFRS 9 introduces a new hedge accounting model so that more firms could be qualified to apply hedge accounting. This section provides an example of the requirements of hedge accounting for risk components in the new hedge accounting model. If firms could identify and reliably measure risk components, either in financial items or in non-financial items, IFRS 9 permits firms to apply hedge accounting for such risk components. Different to the requirements of IFRS 9, only risk components in financial items are allowed to apply hedge accounting in IAS 39. In practice, many firms need to hedge risk components of non-financial

items (IASB, 2014). Thus, the new hedge accounting model in IFRS 9 could benefit firms by aligning hedge accounting with actual risk management (hedging) activities better (McConnell, 2014). The new hedge accounting model also permits firms to use internal information, which used in their risk management activities, for their hedge accounting. More disclosures about hedge accounting are required under IFRS 9 (IASB, 2014).

Yet, IFRS 9 does not mandate hedge accounting for firms. It implies that firms could choose to not apply hedge accounting even they have hedging activities by using financial instruments. Moreover, when the IASB issued IFRS 9, issues about hedge accounting for firms' exposures on interest rate risks of a portfolio of financial assets/liabilities ('macro hedge accounting') remain unsolved. Therefore, the IASB set up a separate project for macro hedge accounting due to the critical complexities. Firms are now allowed to continue to apply requirements on macro hedge accounting under IAS 39 even when they apply IFRS 9 for hedge accounting (PWC, 2016).

To sum up, the adoption of IFRS 9 could bring positive effects and negative effects. Possible positive effects of IFRS 9 adoption are: reducing complexities of requirements on classification and measurement of financial assets, of impairment measurement on financial instruments, and of hedge accounting applications; removing artificial volatility on profit and loss which resulted from changes in firms' own credit risk for debt; timely recognition of credit loss allowance and more adequate recognition of credit loss reserves, with the implementation of ELM. Potential negative effects of IFRS 9 adoption are: more flexibility for management to exercise discretion on impairment measurement under ELM; hedge accounting does not mandate for firms; issues related to macro hedge accounting are not solved in IFRS 9.

4. Event Selection:

In order to assess investor perceptions of IFRS 9 issuance, this research examines stock market reactions to events leading to IFRS 9 introduction. It is of great importance to identify relevant events which affect the likelihood of IFRS 9 issuance. This section will indicate how

to select these relevant events and how to assess the effect of each event on the likelihood of IFRS 9 issuance.

The issuance of IFRS 9 followed the general due process of IFRSs by the IASB. IAS 39 users called for accounting standard for financial instruments with less complexity, other interested parties requested an improvement for accounting standard of financial instruments, the IASB set up a work plan in the agenda to develop a new accounting standard, the issuance of discussion paper and consulting broadly for comments, the issuance of exposure draft and consult with global stakeholders, and issuance of new accounting standard. Several pieces of new information about IFRS 9 introduction are distributed to the market through announcements associated with IFRS 9 issuance. Investors revise their initial expectations according to receipts of these pieces of information.

In order to select relevant events associated with IFRS 9 issuance, I first research the event selection process which applied by prior studies. Onali and Ginesti (2014) selected key events related to IFRS 9 issuance in their study. They chose events in the period from July 15, 2009, to December 31, 2012. Initially, they had selected 20 events with the main focus on official announcements by IASB and European Financial Reporting Advisory Group (EFRAG) as of the strong influence of these announcements on debates in the media about IFRS 9 issuance. By searching for the selected events in major accounting and business media news, the authors cut down the selection to 13 events which were covered by media substantially. 11 out of these 13 events were assessed as increasing the likelihood of IFRS 9 adoption, while the remaining two were assessed as decreasing the likelihood of IFRS 9 adoption.

Onali et al. (2017) made another event selection related to IFRS 9 issuance. The event period is between November 15, 2009, and July 24, 2014. In the early stage of the event selection process, the researchers identified events based on IASB and EFRAG recent public announcements. Thereafter, they searched for these identified events in the LEXIS/NEXIS database, which narrowed down the selection to 22 events after controlling for confounding news. Afterwards, to assess the relevance of these 22 events to investors, they examined the degree of Google Search Volume Index (SVI) for the keyword "IFRS 9" in weeks around

these announcements, by applying a two-sample t-test. In the end, 22 events were selected in their study, in which 19 events are classified as increasing the likelihood of IFRS 9 adoption while three events are classified as decreasing the likelihood of IFRS 9 adoption.

By following the event selection manner on prior studies, for this study, I selected the event window as between 14 July 2009 and 24 July 2014. The selection of event window is in accordance with the first exposure draft of IFRS 9 Financial Instruments introduced by the IASB on 14 July 2009 and the final version of IFRS 9 issued by the IASB on 24 July 2014. There were numerous announcements about IFRS 9 introduction within this event window. In order to select events that significantly associated with IFRS 9 issuance, I selected relevant events by focusing on two elements: 1. When IFRS 9 would be effective (refers to the delay of IFRS 9), and 2. How IFRS 9 would be implemented. On the first step, I selected events related to announcements of the issuance of the exposure draft, proposals of IFRS 9 implementation, delay of the effective date, and publication of the final version. Afterwards, I eliminated events related to announcements of numerous discussions about IFRS 9 implementation and issuance, discussions of prior released announcements, and announcements from parties and individuals not associated with accounting standard-setting bodies. Accounting standard-setting bodies here refer to IASB, FASB and EFRAG. Announcements of accounting standard-setting bodies are expected to be covered by media news substantially, which suggest new information in announcements could be disseminated to the public considerably. So far, the event selection process results in 22 events which are same as research of Onali et al. (2017).

In order to control the effects of concurrent news within the event window, I continue event selection by searching those 22 events identified above in the Lexis/Nexis database with the keywords "IFRS 9" "IAS 39" and "financial instruments". This step resulted in the identification of 25 news related to IFRS 9 issuance from the database. Among the 25 related news, there is some news simply confirm previous news in timing and content, such replicated news is eliminated. Moreover, several of 22 initially identified events could not be found in the database. The events that could not be found in the database potentially imply no substantial media coverage, which suggests new information in those events might not be disseminated to the public substantially. Therefore, I eliminated those events that could not be

found in the database. By considering the media coverage of the events, I selected eight events associated with IFRS 9 issuance for this study after filtered, which are covered by media news substantially (See Table 1). The following paragraphs specify the mentioned eight events in chronological order.

The first event occurred on 12 November 2009, when the IASB issued IFRS 9 Financial Instruments: Measurement and Classification, it represented the publish of new requirements for financial assets. It required the new requirements under IFRS 9 must be applied from 1 January 2013. Even though many announcements from individuals and other parties discuss the introduction of IFRS 9, this event is the first official announcement to confirm the introduction of IFRS 9 to replace IAS 39. The event signals an increased probability of publication of IFRS 9. Therefore, this first event is classified as increasing the likelihood of issuance of IFRS 9.

The second event took place on 28 October 2010, when the IASB republished IFRS 9 with new requirements on financial liabilities. It completed the first phase of the project to replace IAS 39 with IFRS 9. The issuance of requirements for financial liabilities postponed until 2010 due to the unsolved 'own credit' problem for financial liabilities. The republish of IFRS 9 introduces a new approach to eliminate the 'own credit' problem for financial liabilities. The mandatory effective date is consistent with the previous version, that is 1 January 2013. It indicates that delay in setting up requirements for financial liabilities are solved, and the project to issue IFRS 9 is on track. It signals the increased probability of IFRS 9 issuance. Therefore, this study classifies this event as increasing the likelihood of issuance of IFRS 9.

On 4 August 2011, the IASB proposed to delay the mandatory effective date of IFRS 9 from 1 January 2013 to 1 January 2015. For the reason of the other phases of the project were not yet completed, relate to impairment measurement and hedge accounting for financial instruments, as well as delay in other projects related to financial instruments, such as insurance and lease (IASB, 2011a). On 16 December 2011, the IASB amended IFRS 7 to require transition disclosures for the entities that transit from IAS 39 to IFRS 9. It resolved the implementation issues for the entities that selected to earlier adopt IFRS 9. However, the board officially confirmed in this amendment to postpone the mandatory effective date of IFRS 9. The IFRS 9

TABLE 1

Summary of Events and Assessed Effects on Probability of IFRS 9 Issuance

No.	Event Date	Description	Assessed Effects on Probability of IFRS 9 Issuance	Expected Market Reaction if Benefits > Costs (Benefits < Costs)
1	November 12, 2009	IASB published IFRS 9 Financial Instruments: Classification and Measurement (completed the first phase of publishing IFRS 9)	Increasing	+(-)
2	October 28, 2010	IASB reissued IFRS 9 with additional amendments of requirements on financial liabilities	Increasing	+(-)
3	August 4, 2011	IASB proposed to defer the mandatory effective date of IFRS 9 from January 2013 to January 2015	Decreasing	-(+)
4	December 16, 2011	IASB issued amendments for IFRS 9 to defer the mandatory effective date of IFRS 9 to January 2015, it also amended IFRS 7 to require transition disclosures	Decreasing	-(+)
5	November 28, 2012	IASB proposed to make limited amendments to previous version of IFRS 9, accounting for the interactions between IFRS 9 and IFRS standard for insurance	Increasing	+(-)
6	March 07, 2013	IASB issued an exposure draft that propose to introduce a new impairment model for financial assets	Increasing	+(-)

TABLE 1 (continued)

7	November 19, 2013	IASB reissued IFRS 9 with amendments on hedge accounting, removed the January 2015 effective date that previously set	Decreasing	-(+)
8	July 24, 2014	IASB issued final version of IFRS 9, bring previous versions together with introduction of new requirements on impairment. Setting the effective date is January 2018	Increasing	+(-)

This table presents the eight events selected in the section of Event Selection. The column of Assessed Effects on Probability of IFRS 9 Issuance shows that the event is assessed as increasing the probability of IFRS 9 issuance or decreasing the probability of IFRS 9 issuance, which is a summary of event classification under the section of Event Selection. The last column shows the expected stock market reaction to events associated with the probability of IFRS 9 issuance. Benefits > Costs refers to the expected stock market reaction if investors perceive that the benefits of IFRS 9 adoption is higher than the costs of IFRS 9 adoption, +/- indicates positive stock market reaction or negative stock market reaction. Benefits < Costs (in the bracket) refers to the expected stock market reaction if investors perceive that the benefits of IFRS 9 adoption is less than the costs of IFRS 9 adoption, +/- (in the bracket) indicates positive stock market reaction or negative stock market reaction.

IASB is International Accounting Standards Board, which is an independent group and takes responsibilities of developing and issuing IFRS Standards.

would be mandated since 1 January 2015 which as stated on the proposal. These two events signal a delay in process for IFRS 9 issuance, and a delay in the mandatory adoption of IFRS 9. They indicate a decreased probability of IFRS 9 issuance. Therefore, these two events are assessed as decreasing the likelihood of issuance of IFRS 9 (IASB, 2011b).

On 28 November 2012, the IASB issued an exposure draft that proposed a few amendments to IFRS 9 regarding the measurement and classification of financial assets. The proposal addressed implementation issues raised by other parties. It also concerned the interaction between financial assets and insurance contracts, insurance contracts are carried on in another separate project by the IASB. This event indicates proposed amendments to addressed implementation issues are on process. It signals the increased probability of IFRS 9 issuance.

The sixth event took place on 07 March 2013. It was about an exposure draft published by the IASB that introduced an expected loss model to recognize the impairment losses of financial assets. This proposed new impairment model resulted from the joint cooperation between the IASB and the U.S. FASB. The IASB has started to develop a new impairment model since 2009, the first proposal regarding the expected loss model published in 2009 was criticized as being too impractical to exercise. Therefore, this exposure draft proposed the impairment model that has been long-awaited by the interested parties. It indicates that IASB has come up with a practical solution to account for impairment loss for financial instruments, signals the increased probability of IFRS 9 issuance. Hence, these two events are classified as increasing the likelihood of issuance of IFRS 9.

Next event happened on 19 November 2013, when the IASB issued an amendment to the IFRS 9 with the introduction of a new general hedge accounting model. However, the amendment removed the mandatory effective date of IFRS 9, that is January 1, 2015, due to the process of the impairment measurement of financial assets was slow. The mandatory effective date of IFRS 9 was left undecided and was depending on the completion of other phases of IFRS 9. It indicated that the mandatory adoption of IFRS 9 has deferred to an uncertain date, addresses a significant delay for the IFRS 9 issuance project, therefore, signals the decreased probability of IFRS 9 issuance. This event is classified as decreasing the likelihood of issuance of IFRS 9.

The last event occurred on 24 July 2014, when the IASB published the completed version of IFRS 9. It brought the previous publications together with the new expected loss model of impairment recognition for financial assets. It also finalised the mandatory effective date of IFRS 9 is 1 January 2018. It represented that the major phases of the project to replace IAS 39 with IFRS 9 were completed, IFRS 9 would be adopted on a specific date. Consequently, this event is assessed as increasing the likelihood of issuance of IFRS 9.

In this study, five out of eight events are assessed as increasing the likelihood of IFRS 9 issuance, while the remaining three are assessed as decreasing the likelihood of IFRS 9 issuance. Each of the eight selected events related to IFRS 9 issuance disseminates new information about IFRS 9 issuance to investors. Investors are informed that how the proposals and amendments in the announcements would affect the probability of issuing and implementing the IFRS 9.

5. Empirical Literature Review and Hypotheses Development

This chapter introduces the theory underlying the connection between stock market reactions and potential benefits/costs of the newly issued accounting standard. Previous studies on impairment measurement under IFRS 9 and financial reporting convergence are also discussed, in order to motivate the arguments about potential benefits/costs of IFRS 9 adoption. Empirical literatures about IFRS 9 issuance also reviewed to develop hypotheses for the research question.

According to Leftwich (1981), if investors form their expectation at time T, and expect the forthcoming new accounting standard will bring benefits (costs) to firms, they will revise their expectations when new information is released at time T+1. If the released information confirms that the new accounting standard is forthcoming, investors will expect the value of the firm to increase (decrease) because of the previously perceived benefits (costs). A new accounting standard is forthcoming could refer to the increasing likelihood of accounting standard issuance. In contrast, if the newly released information at time T+1 confirms no upcoming new accounting standard, investors will expect the value of the firm to

decrease(increase) because of no previously perceived benefits (costs). No upcoming new accounting standard could refer to the decreasing likelihood of accounting standard issuance.

Therefore, how the stock market reacts to events associated with the new accounting standard introduction relies on how investors perceive the introduction of the new accounting standard. If they perceive new accounting standard adoption as beneficial and firm's value is increasing, the stock market will have positive reactions. If they perceive it as costly, and firm's value is decreasing, the stock market will have negative reactions. Referring this theory to IFRS 9 issuance, if investors expect the IFRS 9 adoption is beneficial, stock market reactions to events that increasing(decreasing) the likelihood of IFRS 9 issuance expected to be positive (negative). In contrast, if the investors perceive IFRS 9 adoption is costly, stock market reactions to events that are increasing(decreasing) likelihood of IFRS 9 issuance expected to be negative (positive).

How the stock market reacts to the issuance of IFRS 9 depends on whether investors of European firms perceive IFRS 9 adoption is beneficial. As previously mentioned, IFRS 9 introduces ELM to replace ILM in IAS 39 to account impairment loss recognition for financial instruments. Gomaa et al. (2019) attempt to assess the consequences of such a replacement for the impairment model by constructing a controlled laboratory environment in their study. The main focus of their study lies on whether ELM in IFRS 9 results in higher recognition of credit loss reserves that are adequate to absorb losses in bad times. Their findings show that ELM leads to higher recognition of credit loss reserves, regardless of concerns on more flexibilities for management to exercise discretion for impairment measurement under ELM. The concerns on management discretion result from that ELM requires firms to make more judgments and assessments for expected loss measurement in IFRS 9. To sum up, if investors perceive that newly introduced ELM in IFRS 9 would result in more adequate recognition of impairment loss rather than the negative effects of management discretions, investors will perceive IFRS 9 adoption as beneficial.

On the other hand, this study expects negative market reactions to the adoption of IFRS 9 if investors perceive that IFRS 9 adoption is costly. Regarding the ELM introduced by IFRS 9

for impairment measurement, other research shows contrary evidence. Gebhardt (2016) shows significant evidence that the recognition of loan loss provision (allowance) has increased under ELM in IFRS 9. However, the recognition of loan loss provision (allowance) under ELM is still 'too little', compared with the fair value of financial instruments which are much lower. The study shows the delay in the recognition of impairment loss because the ELM provides management with the flexibility to assess the significant increase in credit risk. The IASB does not define the probability of a significant increase in credit risk under ELM explicitly. These findings indicate the alarm that ELM delivers more flexibility for management to exercise their discretion in credit loss assessment, which could result in opportunistic behaviour.

Furthermore, there are some researches show that ILM in IAS 39 constrains managers using the recognition of loss provisions to manage earnings (Hashim et al., 2016). Income smoothing in the banking industry has decreased significantly due to restrictions on recognition of impairment loss under ILM in IAS 39 (Gebhardt & Novotny-Farkas, 2011). Hence, if investors perceive that ELM introduced by IFRS 9 could lead to more opportunistic management behaviour and earnings management, they would view IFRS 9 introduction as costly.

The international bodies, such as G20 and FCAG, call for global convergence of accounting standards. To achieve convergence between U.S. GAAP and IFRS, the IASB and FASB have worked jointly to make accounting standards more similar (Joos & Leung, 2013). Prior researches have shown evidence that convergence of accounting standard is beneficial to investors, refers to the reduction of costs to process information and the improvement of comparability between financial reporting. Chi (2009) suggests that less presence of multiple domestic GAAPs improves the decision-making of investors and market efficiency, which suggests that convergence bring benefits to the capital market.

Joos and Leung (2013) studied how investors perceive US domestic firms adopt IFRSs. They examined the stock market reactions to events that affect the likelihood of IFRS adoption in the US. They observed overall significant positive stock market reactions to events that

increase the probability of IFRS adoption in the US. They suggest that investors expect the adoption of IFRS for domestic firms in the US leads to net convergence benefits. Despite the expectations from parties and individuals of the convergence between IFRS and US GAAP, the IASB and FASB had failed to make convergence on accounting standard for financial instruments in the end. It might disappoint interest parties and investors. Thus, if investors perceive that no convergence benefits could arise on IFRS 9 adoption, they would perceive IFRS 9 as not beneficial.

Onali and Ginesti (2014) attempted to research how the country characteristics affect the stock market reactions to the events leading to IFRS 9 adoption. They observed that overall, the stock market reacts positively to the IFRS 9 introduction, which suggests that investors perceive IFRS 9 adoption will bring in positive effects. Hence, taking into account potential benefits and costs that associated with IFRS 9 introduction, which just discussed above, the first hypothesis is formulated as follow:

H1: The Stock markets will either positively or negatively react to events associated with the likelihood of IFRS 9 issuance.

Reform on accounting standard for financial instruments is fundamentally influential for financial institutions, due to a large number of financial instruments owned by financial institutions. Moreover, IFRS 9 introduced ELM to replace ILM regarding accounting for impairment loss, which would significantly affect recognition of loan loss provision and loan loss reserve for financial institutions. If investors in financial institutions perceive benefits (costs) arise on IFRS 9 adoption, they would react more positively (negatively), compared with investors in other non-financial firms.

Onali et al. (2017) examined the association between firm characteristics and stock market reactions to events leading to IFRS 9 adoption. They addressed stock market reactions of investors in financial firms with lower pre-adoption quality. The study showed that stock markets for financial institutions react more negatively to IFRS 9 issuance than the stock market for non-financial institutions. This finding is consistent across firms with various pre-adoption information quality. The evidence indicates that investors for financial institutions

perceive IFRS 9 introduction as significantly costly. Therefore, concerning the stock market reactions for financial firms, the second hypothesis is formulated as follow:

H2: Stock markets for financial firms will react stronger to events associated with the likelihood of IFRS 9 issuance than stock markets for non-financial firms.

To analyse whether firm-specific characteristics could affect the stock market reactions to events leading to IFRS 9 adoption, Onali et al. (2017) studied the effects of pre-adoption information quality and pre-adoption information asymmetry on stock market reactions. They observed stock markets react to IFRS 9 adoption negatively for all firms which have lower pre-adoption information quality and higher pre-adoption information asymmetry. The evidence suggests that firm-specific factors, which are pre-adoption information quality and pre-adoption information asymmetry, could affect equity market reactions to IFRS 9 adoption. Onali and Ginesti (2014) analysed the effect of country characteristics on stock market reactions to IFRS 9 introduction. They observed positive stock market reactions are stronger in countries that the rule of law is weaker. The findings indicate country characteristic, the rule of law, could affect stock market reactions to IFRS 9 adoption. The rule of law is used to reflect the enforcement environment of country where firms domicile.

Therefore, concerning the effects of pre-adoption information quality, pre-adoption information asymmetry and enforcement environment on stock market reactions, the third hypothesis is formulated as follow:

H3: Pre-adoption information quality, pre-adoption information asymmetry and enforcement environment will affect stock market reactions to events associated with the likelihood of IFRS 9 issuance.

6. Data and Research Design

This study attempts to examine investor perceptions of IFRS 9 issuance by testing the stock returns respond to the eight selected events. Firstly, this chapter presents the methodology used to measure the stock market returns respond to the eight events, including the elaborations of the market index that used to adjust the stock returns. Furthermore, the cross-sectional analysis used to test the association between specific characteristics and cross-

sectional variations is described, including a description of regression formula and variables. Moreover, data sources, sample selections and robustness analyses are discussed under this chapter.

6.1   The mean of European stock market reaction

6.1.1   Sample

This study performs the research on EU countries because the EU has mandated the adoption of IFRS regime for all the European public listed companies since 2005, and the focus of this study is the adoption of IFRS 9. The initial sample under this study covers 18 EU countries that have adopted IFRS regime. The daily share prices and quarterly market values to obtain stock returns for European firms are downloaded from the database of Datastream. The prices of market indices are downloaded from Datastream as well. The data of accounting standard adoption for each firm retrieved from Compustat Global. The time frame is between 2009 and 2014, which covers the time period for all eight events that presented in Table 1. This study requires each firm to have available data for stock returns for all eight events. As Panel A in Table 2 presents, the initial sample composed by 6,018 European firms and 48,144 firm-event observations for testing the mean of stock market reactions. Afterwards, the firm with a missing stock return for one of eight events, and firm with zero stock return for more than 4 events are deleted. Lastly, after deleting firms that quarterly market values are missing for one of the eight events, the final sample to examine the mean of stock market returns includes 3,573 firms and 28,584 firm-event observations. Panel B in Table 2 shows the final sample composed by each country.

6.1.2   Methodology

In order to refer investor perceptions of IFRS 9 issuance to stock market reactions to the identified eight events, this study follows the event study methodology in prior research (Armstrong et al. 2010; Joos & Leung, 2013; Onali et al. 2017). Besides the effects of the news that release new information about IFRS 9 issuance on the stock market reactions, within event dates that selected under this research, there is other concurrent global news that

Table 2
Sample Selection

Panel A: Sample Selection Process

	Firms	Obs.
Total number of firms (obs.) with stock returns for 18 EU countries	6,018	48,144
Less: number of firms (obs.) with missing returns for one of eight events	1,802	14,416
Less: number of firms (obs.) with more than 4 event returns are zero	643	5,144
Final sample for the mean of stock market reactions	3,573	28,584
Less: number of firms(obs.) with missing values for regression variables	1,552	12,416
Final sample for cross-sectional analyses	2,021	16,168

Panel B: Sample Distribution by Country

Country	Firms	Total Observations
Austria	59	472
Belgium	100	800
Denmark	112	896
Finland	110	880
France	419	3,352
Germany	462	3,696
Greece	146	1,168
Ireland	43	344
Italy	214	1,712
Luxembourg	28	224
Netherlands	93	744
Norway	123	984
Poland	269	2,152
Portugal	29	232
Spain	96	768
Sweden	272	2,176
Switzerland	143	1,144
United Kingdom	855	6,840
Total	3,573	28,584

could affect stock market reactions. In order to mitigate the effects of concurrent news other than news associated with IFRS 9 issuance on stock market reactions, two approaches are applied to capture the effects of news associated with IFRS 9 issuance on stock market reactions within this event study.

One of the approaches is using value-weighted portfolio event returns associated with each event, rather than simple cumulative stock returns for each event, to capture stock market reactions. The firms in the initial sample of the test of the mean of stock market reactions are treated as a portfolio, each firm's stock return derived from the natural logarithm of daily stock prices. Afterwards, within this portfolio, each firm's stock return is value weighted by the weights of each firm's quarterly market value most recently before the event date, which results in a value-weighted stock return for each firm. Furthermore, this study cumulates three-day value-weighted stock returns for each firm and each event, the time window for three-day is [-1, +1], which indicating the prior-event date, the event date, and the post-event date. In the end, the three-day value-weighted stock returns are cumulated for all the firms within the portfolio for each event, the further market index adjustments are based on these cumulative three-day value-weighted portfolio returns for each event.

The cumulative three-day value-weighted portfolio returns ($CVWR_e$) for each event (e) measured by the following formula:

$$CVWR_e = \sum_{i=1}^{i=n} \sum_{t-1}^{t+1} VWR_{it}$$

where [t-1, t+1] is the time window to cumulate the value-weighted stock returns, t is the event date, t-1 is the date prior to the event date, t+1 is the date after the event date. i represents each firm within the initial sample.

After the initial approach to obtain cumulative three-day value-weighted portfolio returns for each event, the next approach is using the market index to adjust these portfolio event returns, which result in market-adjusted value-weighted event returns. The market index return calculated by cumulating the natural logarithm of daily market index price for three-day time window [-1, +1] for each event. However, this study applies to 18 EU countries, it is not that apparent to ensure the use of an appropriate market index that could represent stock markets for all 18 EU countries. Following prior research (Armstrong et al. 2010; Onali et al. 2017), which applied their event studies for a large set of EU countries, the market index used to adjust three-day cumulative stock returns is DJ STOXX 1800 ex Europe, that is Dow Jones STOXX Global 1800 excluding the largest 600 European firms within the index. This study aims to examine stock returns for EU firms associated with the selected events, adjusting stock returns with a market index including European firms would mitigate some effects that this study attempts to explore, thus, applying a market index excluding European firms to adjust portfolio event returns. Furthermore, to assess whether the inferences of this study are robust regarding the use of the market index, the full DJ STOXX 1800 Index applied to adjust portfolio event returns in the robustness analyses.

The market-adjusted value-weighted return for each event (e) measured by the following formula:

$$MAAR_e = CVWR_e - RM_e$$

where $CVWR_e$ are the cumulative three-day value-weighted portfolio returns for each event, which derived with the initial approach. The RM_e is the return on the market index for each event which derived by conducting the same approach as obtaining $CVWR_e$ above. The $MAAR_e$ applied to the analysis of the mean of stock market reactions.

Additionally, in order to provide statistic evidence for the mean of stock market reactions, this study conducts a t-test to test whether the mean of market-adjusted value-weighted returns for eight events is significantly different from zero, which could examine whether the market-adjusted value-weighted returns for eight events are significant. The null hypothesis under t-test assumes the expected event return with market index adjustment is zero. Moreover, as

previously stated, the eight events are classified as events increasing the probability of IFRS 9 issuance and events decreasing the probability of IFRS 9 issuance, in order to provide greater interpretation for statistic results of all eight event returns, the $MAAR_e$ of events that decreasing the probability of IFRS 9 issuance are multiplied by -1 (Armstrong et al. 2010; Onali et al. 2017).

6.2 Cross-sectional analysis

6.2.1 Sample

The main focus of this research is the correlation between cross-sectional variations in stock market reactions and specific characteristics, it is necessary to have additional data for cross-sectional analysis. On the condition that each firm has available stock returns for all eight events, this analysis also requires each firm to have available data for all the corresponding variables in the regression for all eight events. To obtain data for firms that cross-list in the U.S. stock market, the data of ADR indicator retrieved from Datastream. The data of closely held shares, bid price, ask price, and yearly market value for each firm are downloaded from Datastream as well. Database of Compustat Global used to retrieve identification and annual report data, such as daily shares traded, shares outstanding of the year, net sales, standard industry classification code and auditing firm. The stock exchanges which each firm listed are obtained from the database of Orbis. The dataset for rule of law index retrieved from the worldwide governance indicators project in the database of World Bank. The period of this sample is from 2009 to 2014 which encompasses all eight events. After merging all the retrieved data together, only matched data retained for this study. As Table 2 presents, firms with missing event returns for one of the eight events are deleted, and firms with missing data for one of the corresponding variables in the regression are deleted, the final sample for cross-sectional analysis includes 2,021 firms and 16,168 firm-event observations.

6.2.2 Methodology

As previously mentioned, this study attempts to explore whether specific characteristics could affect stock market reactions to the eight events, such as financial institutions, pre-adoption

information quality, pre-adoption information asymmetry, and enforcement environment. Thus, this research will examine such correlations with the following regression models:

$$CAR_{it} = \beta_0 + \beta_1 Quality_{it} + \beta_2 Financials_{it} + \beta_3 Financials_{it} \times Quality_{it} + \beta_4 TO_{it}$$
$$+ \beta_5 Insiders_{it} + \beta_6 Spreads_{it} + \beta_7 Enforcement_{it} + \beta_8 Big4_{it} + \beta_9 Size_{it}$$
$$+ \epsilon_{it}$$

The estimated coefficients for each corresponding variable in the regression and statistic results will provide inferences for this study.

6.2.3 Variable Descriptions

The following paragraphs provide explanations for the corresponding variables in the regression model. Furthermore, Table 3 tabulates measurement and data source for each corresponding variable.

(1) Dependent Variable

Unlike the cumulative market-adjusted value-weighted event returns ($MAAR_e$) used to test the mean of stock market reactions, which is a value-weighted portfolio return with market adjustment to mitigate concurrent news effects. The dependent variable used in the regression model is (CAR_{ie}), Which applied to capture the stock market reactions to the IFRS 9 issuance events in the cross-sectional analyses. CAR_{ie} is the cumulative abnormal return for each firm (i) at each event (e). It measured by subtracting three-day cumulative natural logarithm return for market index from three-day cumulative natural logarithm return for each firm that computing with the daily stock price. The time window for three-day is [-1, +1] of each event date. The market index applied to the regression model is DJ STOXX 1800 ex Europe Index. CAR_{ie} is multiplied by -1 if the stock returns related to the events that identified as decreasing the likelihood of IFRS 9 issuance, which aims to greater interpretation.

(2) Independent variables

2.1) Information quality prior to IFRS 9 issuance (Quality)

Pre-adoption information quality refers to information quality prior to IFRS 9 issuance, is challenging to capture, this study measures it with information quality proxy which applied in the prior papers (Armstrong et al. 2010; Onali et al. 2017). Quality is estimated with the first principal component from a PCA (Principal Component Analysis) of three variables without rotation. One of three variables is ADRs (American Depository Receipts), a dummy variable which equals to 1 if a European firm cross-listed as ADRs on the U.S. at the year of the event, otherwise, ADRs equals to 0. Another variable is Exchanges, which measured as to how many stock exchanges on which a firm listed in total at the year of the event. The last variable used in PCA is MV, which equals to the natural logarithm of yearly market value at the prior year of each event. The European firms which cross-listed as ADRs in the U.S are required to disclose more financial information under SEC regulation, they are overall larger, are stricter supervised by the U.S. regulation and have a larger number of analyst following.

Therefore, the firms which cross-listed as ADRs in the U.S., firms which listed on more stock exchanges, and firms which have larger size are expected to have higher information quality preceding IFRS 9 issuance. This study multiplies estimated scores of Quality with -1 for interpretation reason, thus, the information quality prior to IFRS 9 issuance is higher when the Quality score is lower. If investors anticipate that IFRS 9 adoption is not beneficial or is costly, they might expect firms with lower Quality score (higher information quality prior to IFRS 9 issuance) to occur more costs for IFRS 9 adoption. Thus, stock market for firms with lower Quality score would react more negatively, the coefficient of β_1 is predicted as positive.

2.2) Financial institutions (Financials)

IFRS 9 issuance could affect financial institutions to a larger extent, in order to test whether the investors in financial institutions have different perceptions of IFRS 9 issuance, this study adds a variable for financial institutions (Financials) in the regression model. Financials

Table 3 Variable definitions and sources

Variables	Descriptions	Sources
Dependent Variable		
CAR	Cumulative abnormal return calculated with the sum of natural logarithm return with firm's daily stock prices at t-1, t, t+1, minus the sum of natural logarithm return for the market index at t-1, t, t+1. t is each event date.	Datastream
Test Variables		
ADRs	A dummy variable which equals to 1 if a firm cross-list as ADRs (American Depository Receipts) in the U.S. at the year of each event, otherwise, ADRs equals to 0.	Datastream
Exchanges	Total number of Exchanges on which each firm listed of the year of each event	Orbis
MV	The natural logarithm of a firm's yearly market value of equity at the year prior to each event date.	Datastream
Financials	A dummy variable which equals to 1 when a firm's two-digit SIC code (standard industry classification code) is 60 or 61, otherwise, Financials equals to 0.	Compustat Global
TO	A dummy variable which equals to 1 if a firm's turnover rate larger than the median of all firms, and 0 otherwise. Turnover rate calculated as mean of daily shares traded for the year divided by the mean of shares outstanding for the year.	Compustat Global
Insiders	The percentage of shares held by a small group of shareholders.	Datastream
Spreads	Bid-ask spreads measured as the mean of bid-ask spreads at time t-1, t, t+1, t is each event date. Bid-ask spreads calculated with formula: (ask - bid) / [(ask + bid)/2] by using daily closing ask and bid price.	Datastream
Enforcement	Rule of law index measures the rule of law of each country, which captures the country's order, government power, and enforcement, obtained from the WJP (World Justice Project) on the World Bank.	the World Bank
Control Variables		
Big 4	A dummy variable which equals to 1 when a firm audited by one of the four largest accounting firms for the fiscal year of each event, and 0 otherwise.	Compustat Global
Size	The natural logarithm of a firm's yearly market value of equity at the year prior to each event date.	Datastream

Table 3 presents definitions and data sources of variables in the regression model excluding variable of Quality, variable of Quality is estimated with the first principal component from a PCA (Principal Component Analysis) on ADRs, Exchanges and MV without rotation.

measured with two-digit sic code (standard industry classification code). When a firm's two-digit sic code is 60 or 61, indicating depository institutions and non-depository credit institutions, Financials equals to 1 as a dummy variable, while equals to 0 otherwise. As previously mentioned, this study expects that the stock markets for financial institutions react stronger than stock markets for non-financial institutions. However, it is unclear whether the investors in financial institutions perceive IFRS 9 issuance as beneficial or costly, therefore, the coefficient of β_2 is predicted as either positive or negative.

2.3)   Interaction variable (Financials * Quality)

This study adds the interaction term of Financials * Quality to the regression model, with an emphasis to explore the stock market reactions of financial institutions with lower information quality prior to the IFRS 9 issuance. The information quality prior to IFRS 9 issuance captured by the variable of Quality. The coefficient of β_3 is predicted as either positive or negative, for the same reason as the prediction for β_2.

2.4)   Turnover (TO)

This study adds Turnover (TO) to the regression as an indicator variable. The rate measured as the mean of daily shares traded of the year divided by the mean of shares outstanding for the year. TO equals to 1 if the firm's rate is larger than the median for all firms within the sample, and 0 otherwise. Turnover applied as a proxy for firm's information asymmetry because the firm is more liquid if firm's turnover is higher, which suggests less information asymmetry of the firm (Armstrong et al., 2010; Joos & Leung, 2013). Therefore, if investors anticipate that IFRS 9 adoption is not beneficial because it could not decrease the information asymmetry, the stock market for firms with less information asymmetry prior to IFRS 9 issuance, which firms with TO equals to 1, would react less negatively. Thus, the coefficient of β_4 is predicted as positive.

2.5)   Closely held shares (Insiders)

Closely-held shares represent the percentage of shares held by a small group of stockholders. When the Insiders is higher, the more shares of a firm held by a small group of stockholders, fewer shares could be traded in the market, and trading volume is lower. Thus, the firm is less liquid and has more information asymmetry. If investors do not expect net benefits from IFRS 9 adoption because it could not result in less information asymmetry, the stock market for firms with less closely-held shares (Insiders), which have less information asymmetry prior IFRS 9 issuance, would react less negatively. Therefore, the predicted sign for the coefficient of β_5 is negative.

2.6)   Bid-ask spread (Spreads)

Bid-ask spreads measured as the mean of daily bid-ask spreads of three-day around each event, the time window for three-day is [-1, +1]. Daily bid-ask spread calculated as the difference between the daily ask price and daily bid price divided by the average of daily ask price and daily bid price. Bid-ask spreads could reflect the information asymmetry between informed investors and uninformed investors. The firm's bid-ask spreads are larger, then the information asymmetry is higher. If investors anticipate that IFRS 9 adoption is not beneficial or is costly because it could not reduce information asymmetry, a more negative stock market reactions could be observed for firms with larger bid-ask spreads (higher pre-adoption information asymmetry). Thus, the predicted sign for coefficient of β_6 is negative.

2.7)   Enforcement (Rule of law index)

The rule of law indicates the law and enforcement are regulated legally, which implies the legal and enforcement environment of the country. The rule of law index from WJP (World Justice Project) is a comprehensive measurement for the rule of law of each country. This index captures the country's order, government power, and enforcement. The data of the rule of law index obtained from the World Bank. This study multiplies the rule of law index with -1, which indicates the value of enforcement variable is higher for the country with poorer enforcement. Investors may perceive that countries which have ineffective enforcement would enforce the application of new accounting standard less strictly. Thus, stock markets may react weaker for the firms which domiciled in countries with poorer enforcement

environment. If investors anticipate that IFRS 9 adoption is not beneficial, the stock market would react less negatively for firms which domiciled in countries with poorer rule of law, the predicted sign for the coefficient of β_7 is positive.

(3)   Control variables

3.1)   Independent auditor (Big4)

Independent auditor is a dummy variable, which equals to 1 if the firm is audited by one of the four biggest auditing firms during the year of the event, otherwise, independent auditor equals to 0. The auditing firm for each company retrieved from Compustat. Companies which audited by large audit firm are valued by investors, they anticipate those companies with better financial reporting quality and better monitor. According to Armstrong et al. (2010), investors may perceive firms which audited by large audit firms are more beneficial during the transition of IFRS standard because those firms are perceived to be more equipped to transit to new IFRS standard. Therefore, the stock market reactions could differ for companies with different audit firms, which should be controlled in the regression.

3.2)   Size

Size measured with the natural logarithm of the yearly market value of equity at the year prior to each event, which is the same measurement as MV in the variable of Quality. Large firms have a higher trading volume of shares and stricter followed by media and analysts so that the information asymmetry differs between large firms and small firms (Yoon, Zo, & Ciganek, 2011). Thus, the Firm's size could be associated with pre-adoption information asymmetry as well, which would be controlled in the regression.

(4)   Statistics

This study performs a linear regression to examine the correlation between cross-sectional differences and several specific characteristics. When accounting for cross-sectional variations, it is reasonable to assume potential correlations between errors within clusters of

the sample (Armstrong et al. 2010; Onali et al. 2017). The clusters under this cross-sectional analysis might be firms grouped by countries or industries. If no treatment for such potential correlations between errors within clusters, inferences from the cross-sectional analysis could be biased. Thus, the regression conducted with standard errors clustered by country and two-digit sic code (industry).

7. Results and Analysis

Following the elaborations of data selection and methodology, this chapter presents the empirical results from statistic tests. It starts with the statistics of stock returns to the eight events associated with the likelihood of IFRS 9 issuance, including the mean of market reactions in the European stock market. Furthermore, the results for cross-sectional analysis start with the descriptive statistics and Pearson correlations of variables in the regression model, afterwards, the empirical results for regression are presented

7.1 The mean of European stock market reaction

This study firstly assesses the mean of stock market reactions to the eight events that associated with the probability of IFRS 9 issuance in Europe, which could reflect whether investors perceive the benefits of IFRS 9 issuance outweigh the costs. Table 4 presents statistics of stock returns in the European stock market that related to the eight events. The column of value-weighted event return presents value-weighted portfolio returns that accumulated for three days for each event. The column of DJ STOXX 1800 ex Europe Index Return presents three-day cumulative returns on the market index of DJ STOXX 1800 ex Europe for each event. The column of Market-Adjusted Event Return shows the results of subtracting DJ STOXX 1800 ex Europe Index Return from value-weighted event return. Furthermore, event dates, event descriptions and predicted signs for stock returns are presented in Table 4.

As previously mentioned, when calculating the mean of stock returns for the eight events, which also presented on the Table 4, the stock returns to events that identified as decreasing

Table 4
Stock returns to events associated with the probabilities of IFRS 9 issuance

Event Date	Description	Predicted Sign	Value-Weighted Event Return	DJ STOXX 1800 ex Europe Index Return	Market-Adjusted Event Return
November 12, 2009	IASB published IFRS 9 Financial Instruments: Classification and Measurement	+	0.0071	0.0052	0.0019
October 28, 2010	IASB reissued IFRS 9 with additional amendments of requirements on financial liabilities	+	-0.0035	-0.0038	0.0003
August 04, 2011	IASB proposed to defer the mandatory effective date of IFRS 9 from January 2013 to January 2015	-	-0.0766	-0.0543	-0.0223
December 16, 2011	IASB issued amendments for IFRS 9 to defer the mandatory effective date of IFRS 9 to January 2015	-	0.0007	-0.0144	0.0151
November 28, 2012	IASB proposed to make limited amendments to previous version of IFRS 9	+	0.0126	0.0050	0.0076
March 07, 2013	IASB issued an exposure draft that propose to introduce a new impairment model for financial assets	+	0.0039	0.0168	-0.0128
November 19, 2013	IASB reissued IFRS 9 with amendments on hedge accounting, removed the effective date that previously set	-	-0.0017	-0.0074	0.0057

Table 4 (continued)

Event Date	Description	Predicted Sign	Value-Weighted Event Return	DJ STOXX 1800 ex Europe Index Return	Market-Adjusted Event Return
July 24, 2014	IASB issued final version of IFRS 9 and set the effective date is January 2018	+	0	0.0024	-0.0024
	Mean Return of eight events		0.0122	0.0127	-0.0005
	t-statistic				-7.7651

Table 4 presents statistics of stock returns for each of the eight events that related to the probabilities of IFRS 9 issuance. The column of value-weighted event return ($CVWR_e$) presents value-weighted portfolio returns that accumulated for three days for each event. The column of DJ STOXX 1800 ex Europe Index Return presents three-day cumulative returns on the market index of DJ STOXX 1800 ex Europe for each event. The column of Market-Adjusted Event Return shows the results of subtracting DJ STOXX 1800 ex Europe Index Return from value-weighted event return. Predicted sign indicates the prediction for the sign of Market-Adjusted Event Return. Mean Return of eight events calculated by the mean of Market-Adjusted Event Return for the eight events, the stock returns to events that identified as decreasing the likelihood of IFRS 9 issuance are multiplied with -1. t-statistic examines whether Mean Return of eight events is significantly different from zero.

the likelihood of IFRS 9 issuance are multiplied with -1. Thus, if the mean of stock returns across the eight events is positive, which would imply an average positive stock market reaction to the IFRS 9 issuance, vice versa. Table x. presents that the mean of value-weighted event return is 0.0122, the mean of DJ STOXX 1800 ex Europe Index Return is 0.0127, and the mean of market-adjusted event return is -0.0005. Moreover, the mean of market-adjusted event return is negative and significantly different from zero (t-statistic = -7.60; two-tailed p-value = 0.00).

The statistics in Table 4 show the mean of market-adjusted event return is significantly negative, which indicates a negative market reaction to the IFRS 9 issuance events. Thus, the statistic results provide evidence to Hypothesis 1 (H1), the stock market in Europe react negatively to the events that increase the likelihood of IFRS 9 issuance. The results also support the argument that investors in Europe stock market perceive the IFRS 9 adoption is not beneficial. However, comparing with the significantly negative mean of market-adjusted event return, the mean of value-weighted event return is positive in the table, which is the return without market adjustment. This positive mean indicates whether the return is adjusted by the market index could affect the findings of the stock market reaction to IFRS 9 issuance events. Moreover, as previously mentioned, it is crucial but not apparent to find an appropriate market index to adjust the event return under this research. Thus, in order to examine whether the inference of the market reaction to IFRS 9 issuance events is sensitive to the choice of the market index, this study applies another market index for market-adjusted event return in the robustness test.

7.2   Cross-sectional analysis

7.2.1   Descriptive statistics

Table 5 presents descriptive statistics for all variables in the regression formula and for additional variables in the robustness test. The descriptive statistics are analyzed with a sample consisting of 2,021 firms and 16,168 firm-event observations. Table 5 shows the mean of cumulated abnormal return is 0.21 per cent, which is positive. Table 5 also shows that 3.6 per cent of firms are financial institutions in the sample, and 62.3 per cent of firms have a high turnover which might have less information asymmetry (TO = 0.6227). Furthermore, table 5

Table 5 Descriptive Statistics

Variables	Mean	25%	Median	75%	Std.
Dependent Variable					
CAR	0.0021	-0.0179	-0.0024	0.0183	0.0478
Independent Variables					
Quality	0.0000	-0.6434	0.2979	0.9866	1.3863
Financials	0.0356	0.0000	0.0000	0.0000	0.1854
Financials*Quality	-0.0377	0.0000	0.0000	0.0000	0.4020
TO	0.6227	0.0000	1.0000	1.0000	0.4847
Insiders	0.3989	0.1659	0.3998	0.6035	0.2611
Spreads	0.0221	0.0032	0.0102	0.0266	0.0360
Enforcement	-1.5554	-1.8221	-1.7050	-1.4470	0.4240
Big4	0.7089	0.0000	1.0000	1.0000	0.4543
Size/MV	5.8512	4.2508	5.7717	7.3614	2.2654
Robustness Variables					
ADRs	0.1133	0.0000	0.0000	0.0000	0.3170
Exchanges	4.8011	2.0000	4.0000	7.0000	3.3465

Table 5 presents the descriptive statistics for all variables in the cross-sectional analyses and for additional variables in the robustness test. The descriptive statistics are analysed with a sample consisting of 2,021 firms and 16,168 firm-event observations. CAR measured by three-day cumulative natural logarithm return for each firm minus three-day cumulative natural logarithm return on DJ STOXX 1800 ex Europe Index. The time window for three-day is [-1, +1] of each event date. Other variables are as defined in Table 3.

reveals that 39.9 per cent of shares on average are held by a small group of stockholders of the firm, which is relatively high for firms in the sample. Table 5 also presents an average bid-ask spreads is 2.2 per cent. An average rule of law score is 1.6 per cent, which is negative due to multiply with -1 in this study (Enforcement= -1.5554), a higher rule of law score indicates a weaker enforcement environment. Moreover, table 5 shows 70.9 per cent of firms are audited by Big 4 accounting firms, and 11.3 per cent of firms are cross-listed as ADRs on the U.S.

Table 5 also reveals an average of five exchanges which firms have listed on, which supports a large portion of firms within this sample have listed their shares on more than one exchange.

7.2.2   Pearson correlations

Table 6 presents the Pearson correlations between the variables of the regression formula. The correlation between cumulative abnormal return (CAR), which used to reflect stock market reactions, and turnover (TO) is positive and significant at the $P < 0.05$ level, which supports the expected sign for the variable of Turnover. The positive correlation indicates that if investors perceive that IFRS 9 issuance is not beneficial, stock market for firms with a higher turnover rate (less information asymmetry preceding IFRS 9 issuance) would react less negatively.

Moreover, the correlation between cumulative abnormal return (CAR) and Insiders (closely-held shares of firm) is significantly negative, which in line with the expected sign for the variable of Insiders. The negative correlation supports that if investors do not anticipate net benefits from IFRS 9 adoption, stock market for firms with lower closely-held shares (less information asymmetry) would react less negatively to the IFRS 9 issuance events. The correlation between CAR and Enforcement (Rule of law) is positive which in line with the expected sign of Enforcement, however, the positive correlation is not significant. Furthermore, the correlation between dependent variable CAR and Quality (a proxy for information quality prior IFRS 9 issuance) is not significantly different from zero, which cannot provide any preliminary evidence for the cross-sectional analyses. Correlations between CAR and other independent variables are also insignificant. Although correlations between the variables of regression formula could provide preliminary evidence for cross-sectional analyses, there might be other variables potentially affect the results. Therefore, inferences for cross-sectional analyses rely on below empirical results from regression analyses.

Table 6   Correlations between variables

Variables	CAR	Quality	Financials	Financials * Quality	TO	Insiders	Spreads	Enforcement	Big4	Size
CAR	1									
Quality	0.003	1								
Financials	0.003	-0.147*	1							
Financials * Quality	-0.005	0.293*	-0.488*	1						
TO	0.039*	-0.284*	-0.012	-0.083*	1					
Insiders	-0.040*	0.203*	0.001	0.057*	-0.445*	1				
Spreads	-0.006	0.416*	-0.033*	0.077*	-0.093*	0.128*	1			
Enforcement	0.012	0.028*	0.100*	-0.047*	-0.058*	0.252*	-0.043*	1		
Big4	0.005	-0.268*	0.072*	-0.034*	0.083*	-0.159*	-0.271*	-0.200*	1	
Size	-0.004	-0.820*	0.165*	-0.216*	0.156*	-0.135*	-0.538*	0.005	0.353*	1

Table 6 presents the Pearson correlations between the variables of regression model in cross-sectional analyses. The correlations are estimated with a sample consisting of 2,021 firms and 16,168 firm-event observations. CAR measured by three-day cumulative natural logarithm return for each firm minus three-day cumulative natural logarithm return on DJ STOXX 1800 ex Europe Index. The time window for three-day is [-1, +1] of each event date. Other variables are as defined in Table 3. *, **, *** indicating significant at the 10%, 5%, and 1% confidence level, respectively.

7.2.3   Summary statistics of regression analyses

Table 7 presents summary statistics from running regression formula with the sample consisting of 2,021 firms and 16,168 firm-event observations. Considering the results presented in Table 7, the coefficient of Quality (β_1) is positive and statistically significant (coefficient = 0.0008, t-statistic = 2.15). This is consistent with the expected sign which indicating stock markets for firms with a lower Quality score (higher information quality preceding IFRS 9 adoption) would have a more negative reaction to IFRS 9 issuance events. This significant positive correlation provides evidence to Hypothesis 3 (H3) that pre-adoption information quality factors could affect the stock market reactions to the event associated with the likelihood of IFRS 9 issuance.

Table 7 reveals that the coefficient of Financials (β_2) is not statistically significant (Coefficient = 0.0006, t-statistic = 0.23), this result indicating stock markets for financial institutions do not react stronger than stock markets for non-financial firms. Moreover, the coefficient on the Financials * Quality (interaction term) is also insignificant (Coefficient = -0.0005, t-statistic = -0.47), this supports that stock markets do not react differently for financial institutions with various pre-adoption information quality. Overall, the findings are inconsistent with stock markets for financial institutions would react to IFRS 9 issuance stronger than the stock markets for non-financial companies, which reject Hypothesis 2 (H2). The findings support the idea that investors for financial institutions do not anticipate financial institutions would occur more costs than other firms regarding IFRS 9 adoption.

The significant positive coefficient (Coefficient = 0.0029, t-statistic = 2.85) on TO suggests that stock markets for firms with the lower turnover rate (higher information asymmetry preceding IFRS 9 issuance) respond more negatively to IFRS 9 issuance events. This supports the idea that investors for firms with higher information asymmetry anticipate more costs associated with IFRS 9 adoption because they do not expect less information asymmetry result from adopting IFRS 9. Furthermore, the coefficient of Insiders is negative and significant (coefficient = -0.0066, t-statistic = -3.70), thus indicating that firms with higher

percentage of closely held shares (higher pre-adoption information asymmetry) experience more negative stock market reactions to IFRS 9 issuance events.

The negative coefficient for Spreads is in line with the expected sign, which is consistent with stock markets for firms with larger bid-ask spreads (higher information asymmetry prior IFRS 9 issuance) react more negatively to IFRS 9 issuance events. However, this coefficient (β_6) is insignificant (coefficient = -0.0080, t-statistic = -0.25), which cannot provide evidence to the inferences. Collectively, TO, Insiders and Spreads are three alternative proxies to capture pre-adoption information asymmetry, these findings support Hypothesis 3 (H3) that the factor relating pre-adoption information asymmetry could affect the stock market reactions to the events related to IFRS 9 issuance.

Table 7 further reveals that the coefficient of Enforcement is positive and significant (coefficient = 0.0026, t-statistic = 2.28). This result indicating if investors do not perceive IFRS 9 adoption is beneficial, firms that domiciled in countries with a higher rule of law scores experience the more negative stock market reactions to IFRS 9 issuance events. This result supports that investors expect the more efficient and stricter application of IFRS 9 for firms which domiciled in counties with greater enforcement environment (higher rule of law scores). The finding for the variable of Enforcement provides evidence to accept Hypothesis 3 (H3), that is the factor of enforcement could affect the stock market reactions to events associated with the likelihood of IFRS 9 issuance. However, the coefficients on Big4 (t-statistic = 0.65) and Size (t-statistic = -0.07) are insignificant, which do not support the idea that control variables have significant impacts on stock market reactions.

To shortly summarize the empirical results, under the analyses for the mean of European stock market reaction, the statistics of stock returns for the eight events that associated with the likelihood of IFRS 9 issuance provide evidence for Hypothesis 1, the evidence support that European stock markets react negatively to the IFRS 9 issuance events. Statistic results in cross-sectional analyses further support the above finding. Additionally, summary statistics in cross-sectional analyses provide evidence to reject Hypothesis 2, therefore, stock markets in

Table 7

Table 7   Cross-Sectional Analyses

$$CAR_{it} = \beta_0 + \beta_1 Quality_{it} + \beta_2 Financials_{it} + \beta_3 Financials_{it} \times Quality_{it} + \beta_4 TO_{it}$$
$$+ \beta_5 Insiders_{it} + \beta_6 Spreads_{it} + \beta_7 Enforcement_{it} + \beta_8 Big4_{it} + \beta_9 Size_{it}$$
$$+ \epsilon_{it}$$

Variables	Predicted Sign	Coefficient (t-statistic)
Intercept	?	0.0068**
		(2.15)
Quality	+	0.0008*
		(1.68)
Financials	+/-	0.0006
		(0.23)
Quality * Financials	+/-	-0.0005
		(-0.47)
TO	+	0.0029***
		(2.85)
Insiders	-	-0.0066***
		(-3.70)
Spreads	-	-0.0080
		(-0.25)
Enforcement	+	0.0026**
		(2.28)
Big 4	?	0.0007
		(0.65)
Size	?	-0.0000
		(-0.07)
R-squared		0.0030
Number of Observations		16,168

Table 7 presents the empirical results from cross-sectional analyses that examine whether specific characteristics could affect stock market reactions to the eight events. The analyses are conducted by running the above regression models. CAR_{ie} indicates the cumulative abnormal return for each firm (i) at each event date (e). It measured by three-day cumulative natural logarithm return for each firm that computing with the daily stock price minus three-day cumulative natural logarithm return on DJ STOXX 1800 ex Europe Index. The time window for three-day is [-1, +1] of each event date. CAR_{ie} is multiplied by -1 if the stock returns related to the events that identified as decreasing the likelihood of IFRS 9 issuance. Predicted sign indicates the prediction for the sign of each variable. The regression conducted with standard errors clustered by country and two-digit sic code (industry). T-statistics are presented in parentheses below the corresponding coefficient. *, **, *** indicating significant at the 10%, 5%, and 1% confidence level, respectively. Variables are as defined in Table 3.

financial institutions do not react to IFRS 9 issuance events differently from the stock market in other companies. Statistic results in cross-sectional analyses further support the acceptance of Hypothesis 3, which indicate factors related to pre-adoption information quality, pre-adoption information asymmetry and enforcement environment could affect the stock market reactions to IFRS 9 issuance events.

7.3   Robustness Analyses

This section including analyses to assess whether the findings in the mean of stock market reactions are robust to the choice of the market index that applied to market-adjusted stock returns. Furthermore, this section includes an additional test to examine whether the findings. in respect of pre-adoption information quality are sensitive to a different estimation of pre-adoption information quality.

7.3.1   Alternative market adjustment to stock returns

Although this study finds negative stock market reactions in Europe to the eight events associated with IFRS 9 issuance, there is evidence suggesting that the inference is sensitive to the choices of the market index which used to adjust event returns. Moreover, as previously mentioned, it is crucial but not obvious to find an appropriate market index for this research. Therefore, in order to assess the robustness of the inference in the analyses of the mean of stock market reactions, another market index is applied to adjust stock returns for each of the eight events.

Table 8 presents the statistics of stock returns related to the eight events associated with IFRS 9 issuance. The sample and methodology for this robustness analysis are the same as which applied to analysis for the mean of European stock market reaction. The column of Value-Weighted Event Return shows the value-weighted portfolio returns that accumulated for three days for each event. Rather than applying DJ STOXX 1800 ex Europe Index for market adjustment, the full DJ STOXX 1800 Index is applied for market adjustment under this robustness test. Therefore, the column of DJ STOXX 1800 Index Return presents three-day

Table 8 Alternative market adjustment to stock returns

Event Date	Description	Predicted Sign	Value-Weighted Event Return	DJ STOXX 1800 Index Return	Market-Adjusted Event Return
November 12, 2009	IASB published IFRS 9 Financial Instruments: Classification and Measurement	+	0.0071	0.0068	0.0002
October 28, 2010	IASB reissued IFRS 9 with additional amendments of requirements on financial liabilities	+	-0.0035	-0.0037	0.0002
August 04, 2011	IASB proposed to defer the mandatory effective date of IFRS 9 from January 2013 to January 2015	-	-0.0766	-0.0598	-0.0168
December 16, 2011	IASB issued amendments for IFRS 9 to defer the mandatory effective date of IFRS 9 to January 2015	-	0.0007	-0.0089	0.0097
November 28, 2012	IASB proposed to make limited amendments to previous version of IFRS 9	+	0.0126	0.0080	0.0046
March 07, 2013	IASB issued an exposure draft that propose to introduce a new impairment model for financial assets	+	0.0039	0.0184	-0.0145
November 19, 2013	IASB reissued IFRS 9 with amendments on hedge accounting, removed the effective date that previously set	-	-0.0017	-0.0054	0.0037

Table 8 (continued)

Event Date	Description	Predicted Sign	Value-Weighted Event Return	DJ STOXX 1800 Index Return	Market-Adjusted Event Return
July 24, 2014	IASB issued final version of IFRS 9 and set the effective date is January 2018	+	0	0.0013	-0.0013
	Mean Return across Events		0.0122	0.0131	-0.0009
	t-statistic				-17.8193

Table 8 presents statistics of stock returns for each of the eight events that related to the probabilities of IFRS 9 issuance. The column of value-weighted event return ($CVWR_e$) presents value-weighted portfolio returns that accumulated for three days for each event. The column of DJ STOXX 1800 Index Return presents three-day cumulative returns on full DJ STOXX 1800 Index for each event. The column of Market-Adjusted Event Return shows the difference between value-weighted event return and full DJ STOXX 1800 index return. Predicted sign indicates the prediction for the sign of Market-Adjusted Event Return. Mean Return across Events calculated by the mean of Market-Adjusted Event Return for the eight events, the stock returns to events that identified as decreasing the probabilities of IFRS 9 issuance are multiplied with -1. t-statistic examines whether Mean Return across Events is significantly different from zero.

cumulative returns on full DJ STOXX 1800 Index for each event. The column of Market-Adjusted Event Return shows the difference between value-weighted event return and full DJ STOXX 1800 index return. Event dates, event descriptions and predicted signs for stock returns are the same as the analysis on the mean of stock market reaction.

By using the same approach as the analysis on the mean of stock market reaction, when calculating the Mean Return across Events, the stock returns of events that identified as decreasing the probability of IFRS 9 issuance are multiplied with -1. Table 8 reveals that the mean of value-weighted event returns is 0.0122, the mean of returns on full DJ STOXX 1800 market index is 0.0131, and the mean of market-adjusted event returns is -0.0009 which is negative and significantly different from zero (t-statistic = -17.82). The statistic results from this test support that findings from the analyses of the mean of stock market reaction are robust to the choices of the market index which used to market adjustment. Stock markets in Europe react negatively to the events associated with the likelihood of IFRS 9 issuance.

7.3.2   Alternative estimations for information quality

The findings in cross-sectional analyses suggesting the factor of information quality prior to IFRS 9 adoption could affect the stock market reactions to IFRS 9 issuance events. However, it is previously mentioned that capture pre-adoption information quality is challenging. In order to test whether the findings are sensitive to the variables that used to reflect pre-adoption information quality, this study will run below the regression model:

$$CAR_{it} = \beta_0 + \beta_1 Quality_P roxy_{it} + \beta_2 Financials_{it} + \beta_3 Financials_{it} \times Quality_P roxy_{it}$$
$$+ \beta_4 TO_{it} + \beta_5 Insiders_{it} + \beta_6 Spreads_{it} + \beta_7 Enforcement_{it} + \beta_8 Big4_{it}$$
$$+ \epsilon_{it}$$

While the other variables keep the same definitions and measurements as in the cross-sectional analyses, pre-adoption information quality not estimated here by conducting a principal component analysis with ADRs, Exchanges, and MV. The variable of Quality_Proxy applied to capture information quality preceding IFRS 9 issuance, which estimated by ADRs, Exchanges and MV respectively. This indicating that robustness analyses run the regression model respectively for ADRs, Exchanges and MV. The robustness test

Table 9   Robustness test for information quality

$$CAR_{it} = \beta_0 + \beta_1 Quality\_Proxy_{it} + \beta_2 Financials_{it} + \beta_3 Financials_{it} \times Quality\_Proxy_{it}$$
$$+ \beta_4 TO_{it} + \beta_5 Insiders_{it} + \beta_6 Spreads_{it} + \beta_7 Enforcement_{it} + \beta_8 Big4_{it}$$
$$+ \beta_9 Size_{it} + \epsilon_{it}$$

Variables	Predicted Sign	Quality_Proxy (Proxies for information quality)		
		ADRs	Exchanges	MV
		(t-statistic)	(t-statistic)	(t-statistic)
Intercept	?	0.0071***	0.0079***	0.0093***
		(2.91)	(3.16)	(3.36)
Quality_Proxy	+	0.0018*	0.0003**	0.0004*
		(1.95)	(2.57)	(1.96)
Financials	+/-	0.0003	-0.0003	-0.0008
		(0.13)	(-0.07)	(-0.13)
Financials * Quality_Proxy	+/-	-0.0011	-0.0002	-0.0002
		(-0.26)	(-0.39)	(-0.32)
TO	+	0.0026**	0.0030***	0.0026***
		(2.55)	(2.93)	(2.60)
Insiders	-	-0.0067***	-0.0063***	-0.0065***
		(-3.75)	(-3.56)	(-3.66)
Spreads	-	0.0016	-0.0039	-0.0090
		(0.05)	(-0.13)	(-0.29)
Enforcement	+	0.0026**	0.0025**	0.0026**
		(2.29)	(2.26)	(2.32)
Big 4	?	0.0003	0.0004	0.0007
		(0.34)	(0.45)	(0.73)
Size	?	-0.0000		
		(-0.07)		
R-squared		0.0028	0.0030	0.0029
Number of Observations		16,168	16,168	16,168

Table 9 presents the empirical results from robustness analyses that examine whether specific characteristics related to information quality that prior to IFRS 9 issuance could affect stock market reactions to the eight events. The analyses are conducted by running the above regression models. CAR_{ie} measured by three-day cumulative natural logarithm return for each firm that computing with the daily stock price minus three-day cumulative natural logarithm return on DJ STOXX 1800 ex Europe Index. The time window for three-day is [-1, +1] of each event date. CAR_{ie} is multiplied by -1 if the stock returns related to the events that identified as decreasing the likelihood of IFRS 9 issuance. Quality_Proxy is the variable used to capture information quality that prior to IFRS 9 issuance, which estimated by ADRs, Exchanges and MV respectively. Each proxy is multiplied with -1 that lower value indicates higher quality information that prior to IFRS 9 issuance. Predicted sign indicates the prediction for the sign of each variable. The regression conducted with standard errors clustered by country and two-digit sic code (industry). T-statistics are presented in parentheses below the corresponding coefficient. *, **, *** indicating significant at the 10%, 5%, and 1% confidence level, respectively. Variables are as defined in Table 3.

multiplies ADRs, Exchanges and MV by -1 respectively for interpretation reason, which suggesting that a lower value of ADRs, Exchanges, or MV indicates a higher information quality preceding IFRS 9 adoption.

Table 9 presents the summary statistics for this robustness test. The coefficients on ADRs, Exchanges and MV are all positive and significant, ADRs (coefficient = 0.0018, t-statistic = 1.95), Exchanges (coefficient = 0.0003, t-statistic = 2.57) and MV (coefficient = 0.0004, t-statistic =1.96). The statistic results support the inferences in cross-sectional analyses with respect to pre-adoption information quality. Table 9 also reveals that coefficients for interaction term Financials * Quality_Proxy are all insignificant for ADRs, Exchanges and MV. Moreover, statistic results for other variables are consistent with findings in cross-sectional analyses. Collectively, tabulated evidence in table 9 support that inferences regarding pre-adoption information quality are robust to alternative variables that used to capture information quality. Thus, factors relating information quality preceding IFRS 9 issuance have effects on stock market reactions to IFRS 9 issuance events.

8. Conclusion

Under this section, I draw conclusions for this research according to tabulated results and findings. Following, several limitations on this study which need to pay attention are discussed. Lastly, I discuss some research topics which are interesting to explore in the future.

This research aims to investigate how investors perceive the adoption of IFRS 9 by conducting an event study during the periods between 2009 and 2014. This study examines the stock market reactions in Europe to events associated with the probability of IFRS 9 issuance, and analyses correlations between several specific characteristics and cross-sectional variances. The results from European stock market reactions provide statistic evidence to Hypothesis 1, the significantly negative market-adjusted event returns indicate significantly negative stock market reactions to IFRS 9 issuance events, which support that investors do not perceive the adoption of IFRS 9 is beneficial. This inference is robust to the option of the market index for the market adjustment. Findings in cross-sectional analyses

further support that investors in Europe do not anticipate net benefits from IFRS 9 adoption. Furthermore, results from cross-sectional analyses are consistent with Hypothesis 3, significantly positive correlations between cumulative abnormal returns and information quality proxies suggest specific characteristics with respect to pre-adoption information quality could affect stock market reactions to IFRS 9 issuance events. The variables including turnover rate, closely-held shares and rule of law are significantly correlated with cumulative abnormal returns, which support Hypothesis 3 that specific characteristics in respect of pre-adoption information asymmetry and enforcement environment could affect stock market reactions to events related to IFRS 9 issuance. Pre-adoption information quality estimated by turnover rate and closely-held shares, and enforcement environment estimated by rule of law index. However, findings from cross-sectional analyses provide evidence to reject Hypothesis 2, the insignificant coefficients on the variable of financial institutions suggest that investors for financial institutions do not react stronger than investors for non-financial companies to events relating to IFRS 9 issuance, neither investors for financial institutions with lower information quality prior to IFRS 9 adoption nor investors for financial institutions with higher information quality prior to IFRS 9 adoption.

8.1   Limitations and Further Research

This study attempts to assess investor perception about IFRS 9 issuance by examining stock market reactions to IFRS 9 issuance events, the methodology relies on that information related to IFRS 9 issuance in the news is reflected on stock prices efficiently and without bias. Therefore, the methodology applied in this study with an assumption that stock markets in Europe are efficient to reflect available information. However, market efficiency varies across stock markets in Europe. If there is a stock market lacks the efficiency leading to available information could not be reflected on stock prices, that could decrease the power of this test. It is also material to identify relevant events which deliver the information relating IFRS 9 issuance to investors and to mitigate the effects of other concurrent news during the event window on stock prices. Although I have carefully selected relevant events that related to IFRS 9 issuance by following process in the section of Event Selection, and a market-adjusted value-weighted return ($CVWR_e$) conducted with an attempt to mitigate the impacts of concurrent global news on stock prices, I cannot completely remove the effects of concurrent news within event window to ensure only information related to IFRS 9 issuance reflected on

stock prices. Furthermore, the mandatory adoption of IFRS 9 in Europe was effective from Jan 2018, there is no sufficient data to analyse the realised effects of IFRS 9 adoption. The analyses about the benefits and costs of IFRS 9 adoption from investors' perspective are based on expected effects of IFRS 9 adoption. Findings under this study about the adoption of IFRS 9 could be seen as preliminary evidence, but evidence for realised effects of IFRS 9 adoption need to be investigated by future research.

The findings in this research are consistent with investors do not expect net benefits from the adoption of IFRS 9 in Europe, which might result from failure of making convergence between IFRS 9 and U.S. GAAP, or costs of new impairment model under IFRS 9. It is unclear whether the expected benefits and costs associated with IFRS 9 adoption would be realized, future research could study the realized benefits and costs associated with IFRS 9 adoption. It is of interest for financial information users and policymakers to learn whether the adoption of IFRS 9 could improve accounting quality for financial instruments, or whether the impairment model introduced in IFRS 9 could result in more sufficient and more timely recognition for credit losses. Furthermore, the failure of convergence for accounting standards of financial instruments between IASB and FASB provides the opportunity for further research. They could study whether the failed convergence for financial reporting affects the comparability and transparency of financial information, or whether this failure affects the cost of capital for companies to adopt accounting standards.

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Summary table of main literatures used in this paper

Table of Literatures

Summary of key prior literatures

Authors	Topic/Research Question	Sample & Methodology	Findings
Enrico Onali, Gianluca Ginesti	Which country characteristics could affect the stock price reaction to the potential adoption of IFRS 9?	An event study with 5400 firms of 17 EU countries	Investors react positively to the adoption of IFRS 9, rule of law and divergence between local GAAP and IAS 39 could affect the stock price reaction to the potential adoption of IFRS 9.
Enrico Onali, Gianluca Ginesti and Luca Vincenzo Ballestra	Do firm-specific characteristics affect the investors' perception of IFRS 9 adoption?	Cross-sectional analysis on stock returns with 3393 EU listed firms between 2009 and 2014.	Pre-adoption information quality and pre-adoption information asymmetry could affect the investors' perception of IFRS 9 adoption.
Christopher S. Armstrong, Mary E. Barth, Alan D. Jagolinzer, Edward J. Riedl	How investors in European firms would react to the adoption of IFRS that issued by the IASB?	Event study with European firms and cross-sectional analysis on variations of stock returns 1956 European firms in the final sample	Investors anticipate net benefits from mandatory adoption of IFRS in Europe. Pre-adoption information quality, pre-adoption information asymmetry and enforcement are correlated with cross-sectional variations on the stock market reactions.
Philip P. M. Joos and Edith Leung	How would U.S. stock market react to potential adoption of IFRS by U.S. domestic firms	Cross-sectional analysis on variations of stock returns 4820 domestic U.S. firms in final sample	Investors expect that potential adoption of IFRS in U.S. would bring net convergence benefits.

Table of Literatures (continued)

Mohamed Gomaa, Kiridaran Kanagaretnam, Stuart Mestelman, Mohamed Shehata	The effects of the new impairment model (Expected Credit Loss Model) in IFRS 9.	Experimental economics methodology by constructing a controlled laboratory environment.	The ECL model (impairment model) in IFRS 9 could result in more adequate reserved to absorb credit losses, although taking earnings management into account, requirements on impairment measurement under IFRS 9 potentially bring net benefits.
Gunther Gebhardt	Compare and assess impairment measurement between IFRS 9 (Expected Credit Loss model) and IAS 39 (Incurred Credit Loss model).	A case study of IFRS accounting of an EU bank with exposure to Greek government bonds between 2009 and 2011.	The impairment model (ECL model) in IFRS 9 could not result in more sufficient and more timely impairment recognition for credit losses but relies more on management discretion.
Gunther Gebhardt and Zoltan Novotny-Farkas	The effect of impairment measurement (Incurred Credit Loss model) under IAS 39 on the accounting quality of EU banks.	OLS regression with hand-collected data on 90 EU banks within the time window from 2000 to 2007.	Impairment measurement under IAS 39 (Incurred Credit Loss model) results in less income smoothing due to less opportunistic behaviour from management discretion, which has a positive impact on accounting quality for banks.

APPENDIX B

Libby Box

Independent variable (X)　　　　**Dependent variable (Y)**

Concepts

| Changes on accounting standards | → | Investor perception |

Operational Measures

| Announcements for potential introduction of IFRS 9 | → | Three-day cumulative abnormal return (CAR) |

Control variables:

Firm size,

Auditing firm