USER UNCERTAINTY AND SPECIFIC RISK DISCLOSURE UNDER IFRS7

BY

MRS. PHUNPHIT THITINUN

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY (BUSINESS ADMINISTRATION)
FACULTY OF COMMERCE AND ACCOUNTANCY
THAMMASAT UNIVERSITY
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ENTITLED

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ABSTRACT

Prior studies suggest the inconclusive evidences of financial statement users' risk perception and their uncertainty occurring from risk disclosure provided by firm, in three arguments (i.e. boilerplates, divergence, and convergence). This study investigates the effects of specific risk disclosure under the IFRS7 on user uncertainty and firm's cost of capital. The dictionary method, the more specific but simple technique, is used in textual analysis process of firm annual report footnote. The specific risk disclosure is demonstrated to improve user's risk perception and to provide more benefits to users in their investment decision making. Overall, this study provides the empirical evidences that are consistent with the divergence argument. The results show that the increases in credit risk and liquidity risk disclosures under IFRS7 is informative, however, this also results in increasing uncertainty in investment decision. Additionally, an incremental of specific risk disclosure under IFRS7 increases firm's cost of capital.

Keywords: Risk disclosure, Credit risk, Liquidity risk, Uncertainty, IFRS7

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Mrs. Phunphit Thitinun

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Symbols/Abbreviations	Terms
10-K	Annual Report required by SEC
CDS	Credit Default Swap
DATASTREAM	Thomson Reuters Datastream
FRR No.48	Financial Reporting Release No.48
IAS	International Accounting Standards
IASB	International Accounting Standards Board
I/B/E/S	Institutional Brokers' Estimate System
IFRS	International Financial Reporting Standards
IFRS7	IFRS7 Financial Instruments: Disclosures
MD&A	Management and Discussion Analysis
SEC	The U.S. Securities and Exchange Commission
UK	United Kingdom
WORLDSCOPE	Thomson Reuters Worldscope database

CHAPTER 1
INTRODUCTION

1.1 Background of the study

An annual report is a vital source of information to stakeholders of a firm. Information disclosed in a company annual report includes both financial statement numbers and other qualitative information voluntarily disclosed by the management. International Financial Reporting Standards requires qualitative and quantitative disclosures about risks arising from financial instruments assets and liabilities to enable financial statements users to evaluate the significance of financial instruments in the firm's financial position and performance. Investors and financial intermediaries, as users of financial information, rely on their perception about a company risks and reflect the degree of such perceived risks in their investment decisions. The level of these perceived risks, and the accuracy of their forecast about the firm financial status and performance might result in the higher cost of capital to a firm in return.

The widely held literatures suggest that increase disclosure helps financial user information in their investment decision making. Risk disclosure is one of the essential information that investor uses to evaluate firm's risk. However, since risk disclosure implies the unfavorable information, it is quite sensitive to user information sentiment (Kothari, Li, & Short, 2009). This risk perception affects to the uncertainty in their investment decision making, and finally result in higher firm's cost of capital. The three critical arguments of risk disclosure are proposed, i.e. boilerplate, divergence, and convergence argument by previous studies, suggests the inconclusive about the informativeness of risk disclosure. In addition, prior studies also provide the misleading and the inconclusive results about the effect of disclosure on firm's cost of capital, whether the incremental disclosure reduces firm's cost of capital is still unclear. Bao and Datta (2014) suggest that investors' risk perception depends on the specific risk disclosure type they are provided. The more specific risk disclosure communicated by firm will affect to users' risk perception and provides more benefits to financial statement users. For example, investors are able to use that information to

evaluate firm's future cash flow or financial analyst can use that information to assess firm's fundamental risk (Hope, Hu, & Lu, 2016; Papa, 2016). Therefore, users' risk perception may result in either reduce their uncertainty (convergence) or increase their uncertainty (divergence) depend on the information they perceived.

Credit risk and liquidity risk disclosure are the specific risk disclosure under the IFRS7 requirement. Credit risk is the risk that entity may face financial loss caused by counterparty fail to discharge an obligation, whereas liquidity risk is the risk that an entity may fail to fulfill contractual obligation. These two specific risk disclosure are viewed as the most important risk and appear to increase users' risk perception (Bao & Datta, 2014; Papa, 2016).

Accordingly, the effect of specific risk disclosure will be investigated in this study in order to see how market response to specific risk disclosure.

1.2 Research objectives and questions

The objectives of this study are to investigate the economic consequences of specific risk disclosure under IFRS7 in the aspect of user uncertainty and its impact to firm's cost of capital. The following research questions are addressed in this study. The first research question is whether the level of credit risk disclosure and liquidity risk disclosure change after the IFRS7 adoption. The second is whether credit risk disclosure and liquidity risk disclosures under IFRS7 are informative. If so, how does credit risk disclosure and liquidity risk disclosure affect to users' uncertainty in their investment decision, and how does credit risk disclosure and liquidity risk disclosure affect to firm cost of capital?

Investigating whether and how currently available credit risk disclosure and liquidity risk disclosure affect users' uncertainty and firm's cost of capital is important for at least two reasons. First, it provides the supportive evidence to IFRS7 disclosure requirements. Second, it adds more literature on specific risk disclosures (i.e. credit risk disclosure and liquidity risk disclosure) to market consequence. This study is distinct from prior studies on the association between risk disclosure and capital market consequence in that it investigates the relationship between the specific risk disrisk disclosure, i.e., credit risk and liquidity risk, on the capital market consequence, while most of previous research studies on general risk disclosures.

1.3 Contribution of the study

This study contribute to the academic by adding the literature that supports the value relevant of financial risk disclosure as well as provides an empirical evidence of capital market, that is increase specific risk disclosure helps to increase users' risk perception and investment decision making. This also complements literature of the linkage between users' risk perception, user uncertainty, firm's cost of capital and specific risk disclosure in accordance with the IFRS7 requirements. Moreover, the implication in this study may be beneficial in Thailand capital market context since TFRS7, Financial Instruments: Disclosure, which is interpreted from IFRS7 by the Federation of Accounting Profession and will be effective for Thai company on January 1, 2019. Regulator may use the criterion in this study to measure the informativeness of risk disclosure under the TFRS7 adoption and its impact on Thai capital market.

1.4 The structure of the study

This study consists of two parts as shown in figure 1.1. The first part aims to investigate the relationship between the risk disclosures in accordance with the International Financial Reporting Standards No.7 – Financial Instruments: Disclosures (Hereafter called IFRS7) and the degree of uncertainty as to the investment decision by two types of information users, the investors and the financial analysts. The second part investigates the firm's cost of capital as a result of the level of qualitative specific risk disclosed by the firm.

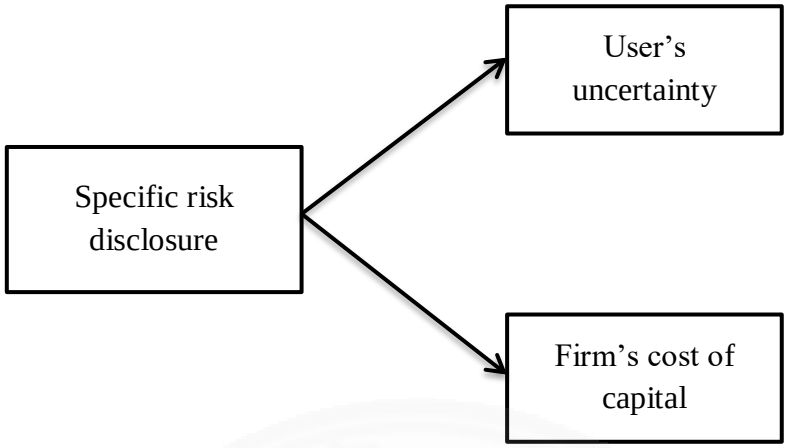

Figure 1.1 The structure of the study

CHAPTER 2
USER UNCERTAINTY AND SPECIFIC RISK DISCLOSURE UNDER IFRS7

2.1 Introduction

Users of risk information disclosed by a firm basically comprised of two groups, creditors and investors. Risk disclosure is a useful source of information for creditors as it provides supportive information to evaluate the firm's credit risks. Investors use listed company risk disclosure in evaluating their investment decision. Specifically for the investors, the perceived level of firm risks leads to investment uncertainty, as reflected in poor investment decision or inaccurate forecast for investment returns. Therefore, users perceptions and users uncertainty about firm risks have been accentuated among researchers, regulators, and standard setters (Bonetti, Mattei, & Palmucci, 2012; George A. Akerlof, 1970; Healy & Palepu, 2001; Kravet & Muslu, 2013).

The empirical results of previous risk disclosure studies have been criticized about the message it conveys to information users. Firstly, practitioners criticized that risk disclosures are themselves boilerplates which are deemed to contain standard wordings with limited benefits to information users. Kravet and Muslu (2013) argue that risk disclosure provides information that leads to either increase users risk perception of the company (divergence argument), or decrease user's risk perceptions of the company (convergence argument). In the divergence argument, risk disclosure reveals unknown risk factors and contingencies while it resolves the company's known risk factors and contingency in the convergence argument.

Risk disclosure could be more beneficial to financial statement users when more specific risk factors are disclosed. Investors are able to receive better information about the riskiness of the firm's cash flows and analyst can assess the firm's fundamental risks (Heinle & Smith, 2017; Hope et al., 2016). Bao and Datta (2014) introduce the importance of the specific risk types disclosed in the financial report. They find that investor perceptions about risk disclosures depend on the

specific types of risk disclosed. This result is consistent with that of Hope, Hu, and Lu (2016) who find that more specific disclosure about risk provides more benefits to financial statement users. These empirical results also support Papa (2016) suggestion that all firms should communicate its financial positions and performance disclosure more meaningfully and more specifically rather than focus merely on IFRS compliance. Moreover, they argue that the limitations of previous studies that lead to mixed empirical results are due to the inefficient methods used for measuring qualitative textual disclosure. For example, applying the predefined risk-related keywords, or using dictionaries outside the domain initially developed limits the findings or the power of the results.

Credit risk and liquidity risk are required by IFRS7 Financial Instruments: Disclosures to be specifically disclosed. In such financial reporting standard, credit risk is defined as the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation, hereafter regarded as "counterparty credit risk". Liquidity risk is the risk that an entity may fail to fulfill contractual obligation, hereafter regarded as "entity credit risk". These two types of risks are shown to be correlated to each other and associated with firms' uncertainty (Ericsson & Renault, 2006; Jarrow & Yu, 2001).

In Papa (2016)'s study, these two types of specific risks are viewed as the most important information in sophisticated users' viewpoints. Using the interview and survey techniques, he finds that more than 80% of respondents consider credit risk and liquidity risk disclosures to be important. This finding is consistent with Bao and Datta (2014) who suggest that these two types of risks appear to increase risk perception of users.

The purpose of this study is therefore to investigate risk-disclosures under the IFRS7 which would affect decision making of investors and financial analysts. The way that firm communicates its risk affects users' perception that leads to user uncertainty. This study address the users' perception to risk disclosure issue by focusing on the effects of credit risk and liquidity risk disclosures on user uncertainty, investor uncertainty and analyst uncertainty before and after the adoption of the IFRS7.

Disclosure tones are proposed to be a problematic issue to the association between disclosure and user uncertainty. Kothari, Li, & Short (2009) suggest that unfavorable disclosures are heavily weighted by the market comparing to the favorable disclosures. That is, when firms propose unfavorable disclosures, it appears greater return volatility will follow. In contrast, offering favorable disclosures produce smaller return volatility. Risk disclosures are normally perceived as negative information to investors since it affects firm's future performance. By estimating investors and analysts uncertainties generated by credit risk disclosure and liquidity risk disclosure, this study therefore controls the effects of disclosure tones as suggested by Kothari et al (2009) and Bao and Datta (2014).

The following research questions are addressed in this study. First, whether the level of credit risk disclosure and liquidity risk disclosure change after IFRS7 adoption. Second, whether credit risk disclosure and liquidity risk disclosure under IFRS7 informative. And third, how credit risk disclosure and liquidity risk disclosure affect to users' uncertainty in their investment decision.

Investigating whether and how currently available credit risk disclosure and liquidity risk disclosure affect users' uncertainty is important for at least two reasons. First, it provides the supportive evidence to IFRS7 disclosure requirements. Second, it adds more literature on specific risk disclosures (i.e. credit risk disclosure and liquidity risk disclosure). Examining whether and how specific risks affect firm's capital market environment using simple method (Dictionary Method) for textual analysis serves an empirical link between disclosure and firms' uncertainty. This study is distinct from prior studies on the association between risk disclosure and capital market consequence in that it investigates the relationship between the specific risk disclosure, i.e., credit risk and liquidity risk, on capital market consequence, while previous studies focus on all types of risk disclosures.

2.2 Review of literature and hypotheses development

2.2.1 Information asymmetry

Financial reports are well recognized sources of information to investors and other stakeholders in capital markets. They are fundamental means to

support the function of efficient market in any forms (Healy and Palepu, 2001). The demand of financial disclosure arises as a result of information asymmetry between insiders (i.e. managers) and outsiders (i.e. investors, intermediaries, and creditors). Insiders of a company typically have better information about the value of business than outsiders do. The incomplete information received makes outsiders feel uncertain about firm value and finally leads to either mispricing securities in the stock market (Akerlof, 1970) or deciding to exit the market to minimize possible losses from trading. These affect to reduce market liquidity.

Providing corporate disclosure and financial reporting to investors can mitigate the adverse-selection problem and increase market liquidity (Verrecchia, 2001). Many empirical studies provide evidence about the economic benefits from higher levels of disclosure. For example, Steffen (2016) finds that the disclosures changes in derivative and hedging footnote can reduce investor and analyst uncertainty. Lang and Stice-Lawrence (2015) find that the more the firms improve their financial reporting, the more the firms experience improvements in their economic outcomes. Bonetti et al., (2012) find that sensitivity analysis disclosure on currency risk is informative for investors. These findings consistent with Leuz and Verrecchia (2000a) who investigate the information asymmetry proxies (i.e. bid-ask spread, trading volume, and stock price volatility) of firms committing to increased disclosure and find that increased disclosure can reduce information asymmetry. However, there are many studies that give contrary evidences about the economic benefits of higher levels of disclosures. For example, Linsley and Shrives (2006) investigate the informativeness of risk reporting in UK company annual reports and find no association between the number of risk disclosures and dominant risk measures, implying the deficiency of coherent risk disclosures. Bao and Datta (2014) introduce fancy method, the latent Dirichlet allocation (LDA) topic model, to study the effects of risk disclosures in 10-K forms on investors' risk perceptions. They find that around two-thirds of risk-disclosure types in their study are not sufficiently informative to investors. These empirical evidences consistent with Schrand and Elliott (1998) who document that risk disclosures provided by firms still be insufficient. The results from previous studies cannot conclude whether information users benefit from companies risk disclosures. The more detailed and more specific

study about the usefulness of risk disclosure, thus, needs to be added in this area of literature.

2.2.2 Qualitative characteristics of useful financial information

Conceptual Framework for Financial Reporting states that the primary qualitative characteristics of useful financial information must be relevant and faithfully represent what the information to represent (IASB, 2010).

Relevant accounting information refers to relevance to users' decision. Accounting information should contain information which is capable users to make a difference in their decision making no matter some users choose not to take advantage of such information or are already got it from other sources. Whether accounting information contributes to the difference in the users' decision making depends on two circumstances. First, the accounting information has information value that users can employ as an input to their predictive process about future outcomes. Second, accounting information has confirmatory value by providing feedback about (confirms or changes) previous evaluations. In this case, accounting information that confirms past expectations decrease users' uncertainties about their previous expectations. In contrast, the accounting information may change users' past expectations or change the degree of confidence in past expectations. As a result, it increases users' uncertainties about their prior expectations that leads to difference in users' decisions (IASB, 2015).

2.2.3 Risk disclosure

Risk disclosure is the accounting information provided for creditors to assess firm risk and for investors to make their investment decision. In practice, creditors and investors make decisions based on their own perceptions about firm risk. Previous studies hypothesize that risk disclosure improve users' risk perception, yet the argument about the informativeness of risk disclosure is still inconclusive (Bao & Datta, 2014; Campbell, Chen, Dhaliwal, Lu, & Steele, 2014; Filzen, 2015; Hope et al., 2016; Johnson, 1992; Kothari et al., 2009; Kravet & Muslu, 2013; Li, 2010; Linsley & Shrives, 2006; Linsmeier & Pearson, 1997; Papa, 2016).

2.2.3.1 Regulatory background

The primary objective of financial reporting is to disclose useful information that assists users to evaluate the entity's ability to generate the future cash flows or value of firm in their decision making (IASB, 2010). As stated earlier, to achieve this primary objective, accounting information is expected to enable users to predict uncertain performance of the entity.

The U.S. Securities and Exchange Commission (SEC) and the International Accounting Standards Board (IASB) have played an important role in improving risk disclosures by issuing disclosure requirements for particular risk in financial reporting. Their objectives are to enhance investor protection and to support investors to assess the risks and uncertainties about firm's future cash flows and its operation. In January 1997, SEC issues the Financial Reporting Release No.48 (FRR No.48) to improve quantitative market risk information (i.e. interest rate risk, foreign currency risk, commodity risk, and other relevant market rate or price risk). This SEC's rules provide three alternative formats for disclosure: tabular, sensitivity analysis, and value at risk, in order to enable investors to make assessments of current and future market risk, particularly the forward-looking quantitative disclosure (SEC, 1997).

In 2005, the International Accounting Standards Board (IASB) develops the International Financial Reporting Standard 7 Financial Instruments: Disclosures, hereafter "IFRS7", to supersede the International Accounting Standard (IAS) 30: Disclosures in the Financial Statements of Banks and Similar Financial Institutions. This mandatory standard applies to all entities both financial and non-financial companies. Moreover, the requirements in the IFRS7 supersede the disclosure requirement in the International Accounting Standard (IAS) 32 Financial Instruments: Presentation. Its' objective is to improve disclosure quality of financial instruments and to reduce investor uncertainty about the effects of a change in risk variables on firms' expected cash flows. IFRS7 requires entity to disclose information that enables users to evaluate the nature and the extent of risks arising from such financial instruments to which the entity is exposed at the reporting date (IASB, 2005). As can be seen that although the purpose of IFRS7 is quite similar to that of FRR No.48, the information provided to users is partial different. That is FRR No.48 focuses on the forward looking information in which firm exposes to

market risk. Under the FRR No.48, an entity has to disclose about the potential loss arises from market risk sensitive instruments in future earnings, fair values, or cash flows, whereas IFRS7 require firm to disclose backward looking information in order to present the risks firm is exposed at the reporting date. With these requirements, an entity has to disclose financial risk in financial report in three categories; credit risk, liquidity risk, and market risk.

Credit risk or counterparty credit risk, is defined as the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation (IASB, 2005). In other words, it is the risk of loss arising from some credit event with the counterparty that may be unable to make a payment or fulfill contractual obligation (Chacko, Sjoman, Motohashi, & Dessain, 2015; Gregory, 2012). However, the deterioration of credit risk does not necessarily mean the default of such counterparty, but implies that the default probability increases.

Liquidity risk or entity credit risk is the risk that an entity may fail to fulfill contractual obligation. It is noted that counterparty credit risk might affect the risk of its own default probability or entity credit risk (Jarrow & Yu, 2001). This is because if an entity cannot collect money from its counterparty, the entity may face with liquidity problem and could not fulfill its contract with creditors or other contractors. It is consistent with Ericsson & Renault (2006) who study the relationship between liquidity risk and credit risk by developing structural bond valuation model and find that the increasing of illiquidity is positively associated with the default probability.

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. This risk consist of three types of risk: currency risk, interest rate risk and other price risk.

Credit risk and liquidity risk appear to be the most used by investors (Chacko et al., 2015). Papa (2016)'s study finds that these two risk disclosures become the prevalent used among financial statement users comparing to other risk disclosures. According to the definition of credit risk and liquidity risk under IFRS 7, firms are required to disclose its private information about financial risk exposure both in-balance sheet and off-balance sheet which seem to be useful to users in their assessment of firms' financial risk exposure.

Both credit risk and liquidity risk are pertain to firm's liquidity. Moreover, the implication of this information may reflect to the sign of firm uncertainty. Thus, it is undoubted that credit risk disclosure and liquidity risk disclosure become the important factors in the view of investors as it provides the significant meaningful to investors and allows them to assess how secure or creditworthy such company is.

Prior studies appear to focus only on market risk disclosures or each component of market risk disclosure, such as currency risk and interest rate risk (Bonetti et al., 2012; Schrand & Elliott, 1998) but they do not focus as much on credit risk disclosures and liquidity risk disclosures which have been more interested by users (Bhat, Callen, & Segal, 2014; Bonetti et al., 2012; Papa, 2016).

2.2.3.2 The importance of risk disclosure to users' uncertainties

Risk disclosure has been concerned by standard setters and regulators for a long time (Schrand & Elliott, 1998). It has been accentuated as a serious issue, especially after the global financial crisis in 2007-2008 (Linsmeier, 2011; Taylor, 2009). It is documented that the limited transparency of risk disclosure contribute to many adverse effects, for instance, mispricing of risk, misallocation of capital, disorderly capital market correction for company valuation, and eventually declining economic environment (Papa, 2016) as depicts in Figure 2.1. With these adverse consequences of limited transparency of risk disclosure under IFRS7, risk disclosure, thus, draws attention from many capital market researchers.

[Figure 2.1]

The empirical results of previous studies show that risk disclosure improve users' risk perception, however the argument about the informativeness of risk disclosure still cannot be concluded.

The prior corporate risk-disclosure literatures show the competing arguments regarding whether and how risk disclosures affect to users' risk perception and their investment uncertainty. The three competing arguments includes: null argument, divergence argument, and convergence argument. First, the null argument refers to risk disclosures are boilerplate. That is risk disclosure contains

with standard wordings which is quite generic and limited benefits to information users. This argument has been discussed in the 1997 American Accounting Association/Financial Accounting Standards Board (AAA/FASB) Conference that risk disclosure is uninformative (Schrand & Elliott, 1998). In addition, this argument still be appeared and has been criticized in many studies. Linsley and Shrives (2006) study risk disclosure by examining firms' risk reporting practices in the annual report of UK companies. Using content analysis approach they find that risk disclosure is uninformative for users to be able to use it in their investment decision. The divergence argument which is the second type of the competing argument, states that risk disclosures reveal unknown risk factors and contingencies, so increasing users' risk perceptions. Kravet and Muslu (2013) study investors' risk perceptions in firms' textual risk disclosures in 10-K filings by examining the changes in stock market and analyst activity. The result appears that the increase in textual risk disclosure improves investors' risk perceptions. The annual increases in risk disclosures are associated with the increases in stock returns volatility and trading volume around and after the filing date. Campbell et al. (2014) study the information content of mandatory of risk factor disclosures in 10-K filings and find a positive relation between risk factor disclosures and the level of market beta and stock return volatility. Additionally, they find a negative association between risk factor disclosures and bid-ask spread. This implies risk disclosure reflected firm-specific and useful information to financial report users. These empirical results consistent with Bonetti et al. (2012) who study the informativeness of currency risk disclosure under IFRS7. They find the positive association between stock return sensitivity and currency risk disclosures.

Another finding of negative association between exchange rate changes and trading volume in this study also supports the third argument, the convergence argument which is criticized that risk disclosures resolve a company's known risk factors and contingencies, thus reducing users' risk perceptions. The empirical result consistent with Linsmeier, Thornton, & Venkatachalam (2002) who find the negative association between market risk exposures and trading volume sensitivity suggesting that market risk disclosures under FRR. No.48 reduces users' uncertainty.

From the result of all the above mentioned researches and studies, all three competing arguments about the effect of risk disclosure are inconclusive. The explanations for the mixed results and preliminary conclusions of studies earlier are that most of these studies depend too much on quantitative databases, such as stock market database and accounting numbers in financial reporting, and that, they focus on IFRS compliance rather than concentrate on a significant communication under IFRS requirements (Arnold, 2009). This argument is consistent with Papa (2016) who suggests that firm should communicate its disclosure under IFRS7 to be more meaningful and to be more specific rather than focuses merely on IFRS compliance. For example, Bhat et al (2014) investigate the relationship between credit risk pricing proxy by CDS spread and the accounting number, proxied by three accounting metrics (earnings, leverage, and book value of equity) to compare the information content of pre- and post- IFRS adoption. Using the difference-in-differences methodology with firm-quarters samples across 13 countries, the study shows that credit risk information conveyed by the accounting metrics is priced by market both prior to and past IFRS adoption. Yet IFRS adoption itself does not help to improve the informativeness of financial statement on credit risk.

Contrary to Bhat et al (2014), Florou, Kosi, and Pope (2016) find that IFRS adoption improves credit relevance. However, using credit ratings as the price of credit risk is claimed not only to be problematic, since credit ratings are not market prices, but also to be vague with respect to its timeliness measurement of credit risk. Therefore, the result of these studies provides a weak support to the usefulness of credit rating.

Kothari et al (2009) argue that disclosure tone is another cause of mixed findings of prior researches. Disclosure tones (favorable and unfavorable) may affect the association between disclosure and measurement of market environment proxies such as return volatility, trading volume, etc. They use content analysis software to define and cluster disclosure texts into two categories, positive (favorable) and negative (unfavorable). When firm provides favorable disclosures, the proxies of firm's risk, as represented by the cost of capital, stock return volatility, and analyst forecast dispersion, decline significantly. In contrast, when firm provides unfavorable disclosures, such risk measures are

significant increase. Generally, risk disclosures are perceived as negative information to investors since it affects to firm's future cash flows. Therefore, the effect of disclosure tones can be controlled by estimating investors' uncertainties and analysts' uncertainties that caused by credit risk and liquidity risk disclosures (Bao & Datta, 2014; Kothari et al., 2009).

The last explanation for the mixed results of the benefit of the risk disclosure is the type of risk disclosures. Bao and Datta (2014) study textual risk disclosure in 10-K forms under the requirement of SEC propose that types of risk disclosure associate with users' risk perceptions. The authors find and quantify risk types from textual risk disclosures, and show that the associated direction between risk disclosures and users' risk perceptions depends on specific types of risk disclosures (e.g. idiosyncratic risk and systematic risk). The empirical results in this study support all three aforementioned arguments. Only 3 out of 30 risk types which are macroeconomic risks, funding risks, and credit risks, are positively associated with the proxy of investors' risk perceptions. In other words, these three types of risk increase investors' risk perceptions. There are 25 types of risk that appear uninformative and have insignificant influence to investors' risk perceptions while the remaining five types of unsystematic risks show the decreasing in investors' risk perceptions. These empirical results suggest that the informative risk types do not necessarily increase investors' risk perceptions.

It is acknowledged that users' risk perception leads to the uncertainty in their investment decision making. Investors and financial analysts play an important role as the capital market actor in the capital market system. They are most likely affected by the risk disclosure provided by firm. Investors tend to research the information about firm to perform the financial analysis in their investment decision making. When they are provided with the specific risk disclosure under IFRS7 their perception about the credit risk and liquidity risk which implies the unfavorable information, for example, the possibility that firm's counterparty defaulting on the contractual obligation or firm itself cannot fulfill the contractual obligation, may lead to the uncertainty in their investment decision making. This is the meaning of investors' uncertainty in this study. Financial analyst, as the information intermediary role, tries to analyze and evaluate firm's fundamental risk

from the information provided by firm. When firm discloses specific risk which reflects to more precise risk, financial analysts may not sure about firm's performance which results in their earnings forecast. The uncertainty of financial analysts is the result of their risk perceptions. More importantly, the analysts' earnings forecast reporting may be used by the unsophisticated investors who cannot analyze financial information by themselves.

As a consequence, if credit risk disclosure and liquidity risk disclosure under IFRS7 are informative, it would be interesting how those risk disclosures cause users' uncertainties in their investment decision.

2.2.4 Hypotheses development

In order to answer the following research questions 1) whether the level of credit risk disclosure and liquidity risk disclosure change between before and after IFRS7 adoption 2) whether credit risk disclosure and liquidity risk disclosure under IFRS7 are informative, and 3) how credit risk disclosure and liquidity risk disclosure affect to users' uncertainties in their investment decision, I develop three research hypotheses as discuss below.

Previous studies in risk disclosure area suggest that firm increase the amount of information in order to reduce information asymmetry between insiders and outsiders, to induce phenomenal transparency to firm's disclosure, or to lower users uncertainty about firms' risk exposure (Bonetti et al., 2012; Lang & Stice-Lawrence, 2015; Leuz & Verrecchia, 2000b; Steffen, 2016). The empirical results in this accounting disclosure area still appear inconclusive whether increase in disclosure benefits the information users. However, under the objective of conceptual framework for financial reporting and IFRS7 which are to improve the usefulness and informativeness of accounting information for users. The IFRS7 requires firms to disclose the relevant accounting information that enables users to assess the nature and the extent of risks arising from financial instruments related to their investment decision making. This supports the evidence of economic benefits from higher levels of disclosure. Regarding with the compliance to IFRS7, firm should increase the level of risk disclosure after the IFRS7 adoption. However, the previous disclosure literature suggests that management incentives affect to disclosure tones

communicated to financial statements users. Managers tend to disclose favorable information rather than unfavorable information as the reason of their career concerns (Kothari et al., 2009). They realize that disclosing more about the proprietary information to outsiders, such as firm's competitors and investors, is not beneficial for the firm. For these reason, although managers comply with the requirement of IFRS7, the content they communicate to users may not be clear (boilerplate and generic wording). This study will use the disclosure measures that can precisely specify credit risk and liquidity risk disclosures under IFRS7, and examines the level of disclosure for these two specific risks. Therefore, to answer the research question whether the level of credit risk disclosure and liquidity risk disclosure change between before and after IFRS7 adoption, it is predicted that the level of credit risk and liquidity risk disclosures disclosed by firm after the adoption of IFRS7 should be higher than that disclosed before the adoption of IFRS7. The level of disclosure in this question is focused on qualitative disclosure. The first hypothesis is hypothesized as follows.

H_{1a}: The level of credit risk disclosure and liquidity risk disclosure are higher after the adoption of IFRS7.

Additionally, to the extent that the level of credit risk disclosure and liquidity risk disclosure after IFRS7 adoption are higher, in order to ensure that the information is informative to users, that is, it is not simply disclose by using a laundry list of generic and boilerplate wordings, the informativeness of risk disclosure will be examined through its value relevance.

Conceptual framework for financial reporting defines the value relevance as a qualitative characteristic of useful financial information. Accounting information is value relevant if it contains information which is capable users to make a difference in their decision making regardless of taking advantage from that information or they are already know about that information from other sources. Therefore, to answer the second research question, whether credit risk disclosure and liquidity risk disclosure under IFRS7 are informative, I predict that credit risk disclosure and liquidity risk disclosure under IFRS7 are value relevant. The second hypothesis is hypothesized as following.

H_{1b}: Credit risk disclosure and liquidity risk disclosure under IFRS7 are value relevant.

Risk disclosure has been used by investors for risk assessment in their investment decision. Since the investors and financial analysts are particularly sensitive to risks, the perceived level of firm risks leads to their investment uncertainties, as reflected in poor investment decision or inaccurate forecast for investment returns. Recent studies suggest that an increasing in risk disclosures can increase information users' risk perceptions and, therefore, reduce their investment uncertainties (Heinle & Smith, 2017; Hope et al., 2016). Heinle & Smith (2017) study the price effects of risk disclosure by investigating investors' uncertainty to companies' cash flows variation and find that providing high quality of risk disclosure and risk management practices to investors may reduce uncertainty that investors place on firm. The result is consistent with Hope et al (2016) who find that more specific risk-factor disclosures enhance analysts better assess firms' fundamental risk. However, some empirical results of risk disclosures still appear to be competing arguments regarding whether and how risk disclosures affect to users' risk perceptions and their uncertainty about investment decision making. These three competing arguments consist of null argument, divergence argument, and convergence argument. The null argument states that risk disclosures are only a boilerplate (Linsley & Shrives, 2006; Schrand & Elliott, 1998). The divergence argument states that risk disclosures reveal unknown risk factors and contingencies, and therefore increasing users' risk perceptions (Campbell et al., 2014; Kravet & Muslu, 2013). In the contrary, the convergence argument states that risk disclosures resolve a company's known risk factors and contingencies, thus reducing users' risk perceptions (Bonetti et al., 2012; Linsmeier, Thornton, Venkatachalam, & Welker, 2002). These previous studies indicate the separation of users' risk perception implies the difference of users' uncertainty in their investment decision. By studying credit risk disclosure and liquidity risk disclosure which can control for disclosure tones since the requirements of risk disclosures under IFRS7 are likely to be negative information, thus are normally perceived as unfavorable information among users. As a result, it affects to investors' perception about the uncertainty of firm's future cash flows. This is consistent with the empirical results of prior study in Kothari et al. (2009)

who find that unfavorable disclosures are associated with the increasing of risk measures which are stock return volatility and analyst forecast dispersion. It implies that risk disclosure influence to investors' perception about the variation of firms' future cash flows. In other words, the incremental of risk disclosure increases investors' uncertainty. However, regarding to the theoretical literature about disclosure which suggest that providing more corporate information to users is beneficial to market participants and result in reduce their uncertainty about firm value (Bonetti et al., 2012; Lang & Stice-Lawrence, 2015; Steffen, 2016). I, therefore, predict that firm which increases the level of credit risk disclosure and liquidity risk disclosure should increase users' risk perceptions thus reduce users' uncertainty about their investment decision making. The third hypothesis is hypothesized as follows.

H_{1c}: The increases in the level of credit risk and liquidity risk disclosures lower investors' uncertainty and analysts' uncertainty.

All research hypotheses and the proposed framework are presented in Figure 2.2. To test these hypotheses, the underlying assumption is the efficient market. It is assumed that firms will have to disclose the whole truth and to closed estimate about its risk. Moreover, users have to believe in the information received and use it in their investment decision.

[Figure 2.2]

2.2.5 Measurement

2.2.5.1 Measurement of disclosure

Most of previous studies use the measures of the amount of disclosure related to the length or the size of file (Li, 2010), such as number of pages, number of words and sentences (Campbell, Downes, & Schwartz, 2015; Filzen, 2015; Leuz & Schrand, 2009; You & Zhang, 2009). However, there is an argument that simply using words or sentences count measures of narrative risk disclosure may be influenced by the dilution effect into the massive information that firms disclosed (Beretta & Bozzolan, 2004). For this reason, the density of disclosure is proposed to resolve this issue. Beretta and Bozzolan (2004) study the quality of risk communication and introduce density communication ratio as the proportion of the

number of sentences containing risk information and the total number of sentences in the Management and Discussion Analysis (MD&A), they find this measure can be used to rank a quality of risk disclosure. Kravet and Muslu (2013) also apply this measure for their study with the reason that a sentence is the smallest composition of text used to convey an idea, and that they can avoid multiple counting of the same risk-related information. Based on these literatures, to answer the first research question whether the level of credit risk disclosure and liquidity risk disclosure change between before and after IFRS7 adoption, I measure the level of credit risk disclosure and liquidity risk disclosure by counting words, keywords, sentences, and sentences containing keywords related to each specific risk. Next, I measure overall disclosures as the percentage of total words or total sentences. That is the ratio of total keywords and total words and the ratio of total sentences containing keywords and total sentences which represent to the density of keywords and the density of sentences containing keywords. By doing this, I can ensure that textual disclosure disclosed by firm related to credit risk and liquidity risk as required by IFRS7.

2.2.5.2 Measurement of the informativeness of disclosure

According to the conceptual framework for financial reporting which guides that firms provide the relevant accounting information. In other words, the information must be relevant to users' decision making either they choose to take advantage of it or not. The accounting information may have information value that users can employ as an input to their prediction about future outcomes. Moreover, it may have the confirmatory value as providing feedback to confirm past expectations which results in decreasing users' uncertainties about their previous expectations. On the contrary, it may change users' past expectations or change the degree of confidence in past expectation, as a result, increase users' uncertainties about their prior expectations. With regarding to the inferences of value relevance, it likely to focus on the association between accounting information and market values rather than the causal relationship. Barth, Beaver, & Landsman (2001) suggest that once a significant relationship between accounting information and market value of firm is found, accounting information is assumed to be value relevant. This is because investors are primarily interested in information that can help them to assess firms' risk for the purpose of their investment decision making (Barth, 2000).

Moreover, no matter all the publicly available information reflect the completely efficient market or not, stock price per share represent the consensus beliefs of investors. For this reason, valuation model is used to investigate the value relevance of credit risk disclosure and liquidity risk disclosure by testing the association between stock price per share and those risk disclosures under IFRS7.

2.2.5.3 Measurement of information users' uncertainties

To measure users' uncertainties in this study, I use the information uncertainty proxies which rely on types of user. These proxies consist of market-based proxies and analyst-based proxies. This is because investors may use analysts reporting in their investment decision making rather than directly use financial reporting as the reason of the constraint of their readability.

According to previous literatures, information uncertainty is defined as an ambiguity of firm value caused by the implication of incomplete accounting information which leads to the imprecise knowledge of firm value (Duffie & Lando, 2001; Zhang, 2006). It is suggested that information uncertainty stem from two sources which are the volatility of firm's underlying fundamentals and the quality of disclosed information (Zhang, 2006). In other words, information uncertainty is caused from the firm itself in the manner of its fundamentals, such as characteristic and performance, and its disclosure behavior such that firm discloses rich information or poor information. The implication of this information may lead to users' uncertainty about firm's value. Bens, Cheng and Neamtiu (2016) use the average daily bid-ask spread and daily return volatility as the proxies of investor uncertainty to study the association between listed firms' behavior on their fair value disclosures after receive a comment letter and investor uncertainty. Similarly Steffen (2016) uses the bid-ask spread and return volatility to proxy for information uncertainty to study the effect of mandating derivative and hedging footnote disclosures on financial reporting user uncertainty. Using the bid-ask spread as a proxy of investor uncertainty is consistent with Gideon Saar (2001) who study the effect of investor uncertainty about order flow information on the prices, volume, and the welfare of investors. Their result suggests that greater investor uncertainty leads to an increase in the bid-ask spread. Therefore, the bid-ask spread implies investor uncertainty. Although bid-ask spread is generally used as a proxy of information asymmetry (Campbell et al.,

2014; Leuz, 2003; Leuz & Verrecchia, 2000a), it is claimed that this proxy is beneficial for users in their decision making which is consistent with the objective of general purpose financial reporting. I, therefore, use the bid-ask spread and stock return volatility as the market-based proxies to measure investor uncertainty about credit risk and liquidity risk disclosure.

For the analyst-based proxies, many prior studies use analyst forecast accuracy and analyst forecast dispersion as the proxies for analyst uncertainty (e.g., Lehavy, Li, and Merkley, 2011; Steffen, 2016). Lehavy et al. (2011) study whether the readability of firms' written communication affect the sell-side financial analysts behavior and find that firm with less readable written communication associates to greater analyst forecast dispersion, lower analyst forecast accuracy, and greater overall uncertainty in analyst earnings forecasts. Following Lehavy et al. (2011), Steffen (2016) uses analyst forecast accuracy and analyst forecast dispersion to examine analyst uncertainty about changes in derivative and hedging footnote disclosures under SFAS 161. He finds that the analyst forecast accuracy is negative and significantly different from zero as predicted, but is not appeared as predicted for analyst forecast dispersion. According to these prior researches, it is reasonable to use analyst forecast accuracy and analyst forecast dispersion as the proxies of analyst uncertainty to examine the effect of credit risk and liquidity risk disclosure under IFRS 7 in this study. I follow Lehavy et al. (2011) and Steffen (2016) by using the two measures of analyst earnings consensus forecast uncertainty (i.e. common and total analyst uncertainty) based on Barron et al. (1998) results. A continuous dependent variable and control variable that are not normal distribution are winsorized at the 1st and 99th percentiles to minimize the impact of outliers.

2.3 Research methodology

2.3.1 Textual analysis process

Textual analysis is used to measure the level of credit risk disclosure and liquidity risk disclosure in this study. The textual risk disclosures are extracted from firms' annual report available in English via the internet website of each company. These textual data then analyzed by Python, the textual analysis program,

to compute the measures of disclosure change variables including: (1) total words count, (2) total keywords count, (3) total sentences count, and (4) total sentences count containing keywords (Beretta & Bozzolan, 2004; Campbell et al., 2014; Kravet & Muslu, 2013).

In the textual analysis process, I manually analyze all available annual report footnotes in each country that adopt IFRS in order to ensure that credit risk and liquidity risk are disclosed in what topics. It appears that each firm discloses these two risks in various topics, particularly for different firms' countries. I find that firms disclose by using forty-three topics for liquidity risk and use forty-five topics for credit risk. All topics will be added in Python in order to capture the specific keywords for credit risk and liquidity risk disclosures under these topics.

Next, I random sampling firms' annual reporting footnotes, which do not include in the sample of this study, to define the new dictionary for credit risk disclosure and liquidity risk disclosure. There are thirty-one annual reporting footnotes used in this stage. I review all annual reporting footnotes under the topics of credit risk and liquidity risk as mentioned before then list and count keywords related to credit risk and liquidity risk disclosures. From this process I obtain twenty keywords, eight keywords for credit risk disclosure and twelve keywords for liquidity risk disclosure. Some of these keywords are allowed for suffixes, for example, contract* will allow for contract, contracts and contractual. All of these keywords will be shown in Appendix A.

To be ensured of the accuracy of the Python program for capturing keywords in annual report footnotes, I manually check 56 firms or 560 firm-year annual report footnotes and find that an error is less than 5%, representing that the Python program work well to capture keywords in this study.

2.3.2 Data and variables

The initial data comprise 46,639 firm-observations from all companies listed in the principal stock exchange of 62 countries that adopt IFRS during the year 2005 - 2015. Sample firms are generated by the intersection of firms with available annual report and DATASTREAM, I/B/E/S, and WORLDSCOPE database required in this study. Firms in banking, finance and insurance industries are

excluded due to their specific reporting requirements. To be included in this study, all of these firms have to meet the following requirements; (1) no missing data, (2) data filed between January 1, 2005 and December 31, 2015, (3) fiscal year end on December 31, and (4) be non-financial industry, and (5) use functional currency in Euro, as shown in Table 2.1 Panel A. According to the sample selection procedure, there are 226 firms or 2,367 firm-year observations and only in European countries as depict in Table 2.1 Panel B. This is reasonable, since European countries fully adopted the IFRS as their accounting standards earlier than any others region, there are more completed available data for this study.

[Table 2.1]

2.3.3 Analyzing for risk disclosure changes

The H_{1a} predicts that after the IFRS7 adoption, the level of credit risk disclosure and liquidity risk disclosure are higher. For this test, the dependent variable is risk disclosure which is determined by two measures, the density of keywords and the density of sentences containing keywords. The independent variables are the IFRS7 adoption period and control variables which consist of firm industry and firm country. However, to test risk disclosure of firm which is different in an industry-level and in a country-level, the result may be affected by the heterogeneity across firms. I, therefore, use a random effects model to treat such issue in H_{1a} testing as follows:

$$DISCVAR_{it} = \beta_{10} + \delta_{10} POST_{it} + \sum_{j=1}^{J-1} \gamma_{1j} IND_{jit} + \sum_{k=1}^{K-1} \lambda_{1k} C_{kit} + \varepsilon_{1it} \quad (2.1)$$

where $DISCVAR_{it}$ is risk disclosure variables (i.e. the density of keywords and the density of sentences containing keywords) of firm *i* and year *t*. $POST_{it}$ is a dichotomous variable indicating IFRS7 adoption period, $POST$ equals to 1 (0) for annual report filing dates on or after (before) IFRS7 adoption[1] with firm *i* and year *t*.

[1] Since IFRS7 is originally issued in August 2005 and applied to fiscal periods beginning on or after 1 January 2007, this is defined as the annual report filing date on or after IFRS 7 adoption and otherwise is the annual report filing date before IFRS 7 adoption.

IND_{jit} is an industrial type represent by the industrial indicator j. C_{kit} is a firm country represented by the country indicator k. ε_{1it} is the error component, $\varepsilon_{1it} = \alpha_{1i} + u_{1it}$, where α_{1i} is the cross-section error component and u_{1it} is the combined time series and cross-section error component.

Regarding to the prediction that the level of credit risk disclosure and liquidity risk disclosure are higher after the IFRS7 adoption thus δ_{10} should be positive.

2.3.4 Analyzing the informativeness of specific risk disclosure under IFRS7

To test H_{1b}, whether credit risk disclosure and liquidity risk disclosure under IFRS 7 are value relevant, Ohlson (1995) model is used. Ohlson (1995) model's assumptions are proved (by expanding and testing) by many accounting academics to be valid (Dechow, Hutton, & Sloan, 1999; F. A. Feltham & Ohlson, 1996; G. A. Feltham & Ohlson, 1995). Many recent previous studies still use the Ohlson (1995) model as a framework to test the value relevance of accounting information (André, Dionysiou, & Tsalavoutas, 2018; Clarkson, Fang, Li, & Richardson, 2013; Elshandidy, 2014; Sarumpaet, Nelwan, & Dewi, 2017; Wu, Hsieh, Yu, & Chu, 2017). Andre et al. (2018) follow the Ohlson (1995) model to examine the value relevance of disclosure levels required by accounting standards (IAS 36 and IAS 38) that reflect in market value of European firms. This study incorporates with quantitative and qualitative data so the authors add the disclosure compliance score as other information in the Ohlson (1995) model. The result appears that disclosure levels are positive associated to market values of firms. This empirical result is consistent with Elshandidy (2014) who investigates the value relevance of domestic and oversea firms in Chinese stock market comparing before and after converge with IFRS by also using the Ohlson (1995) model as a framework. Following these studies, Ohlson (1995) model is used as a framework to test H_{1b}, whether credit risk disclosure and liquidity risk disclosure under IFRS7 are value relevant. The model can be expressed as follows:

$$PRICE_{it} = BV_{it} + EPS_{it} + v_{it} \quad (2.2)$$

Similar to Andre et al. (2018), this study incorporates both quantitative and qualitative data, thus variable v_{it} represents disclosure variable (i.e. the density of keywords and the density of sentences containing keywords). Therefore, the following model is used to test the second hypothesis of this study.

$$PRICE_{it} = \beta_{20} + \beta_{21}BV_{it} + \beta_{22}EPS_{it} + \beta_{23}DISCVAR_{it} + \delta_{20}DISCVAR_{it} \times POST_{it} + \sum_{j=1}^{J-1}\gamma_{2j}IND_{jit} + \sum_{k=1}^{K-1}\lambda_{2k}C_{kit} + \varepsilon_{2it} \quad (2.3)$$

where $PRICE_{it}$ is an average price per share at the end of trading day during the calendar month following the annual report filing date. BV_{it} is book value per share of firm *i* at the fiscal year end, *t*. EPS_{it} is an earnings per share for firm *i* at year *t*. $DISCVAR_{it}$ is disclosure variable of firm *i* at year *t*. IND_{jit} is an industrial type represent by the industrial dummy *j*. C_{kit} is a firm country represented by the country dummy *k*. ε_{2it} is the error component, $\varepsilon_{2it} = \alpha_{2i} + u_{2it}$, where α_{2i} is the cross-section error component and u_{2it} is the combined time series and cross-section error component. It is postulated in this study that credit risk disclosure and liquidity risk disclosure under IFRS7 are value relevant. The statistical significance of the coefficient δ_{20}, thus, indicate the value relevance of credit risk and liquidity risk disclosures under IFRS7.

2.3.5 Analyzing the effect of specific risk disclosure under IFRS7 on user uncertainty

To test H_{1c}, the effects of credit risk disclosure and liquidity risk disclosure levels under IFRS7 requirement on user uncertainty in the pre- and post-IFRS7 periods, I follow Steffen (2016). By comparing between information uncertainty in the pre- and post-adopting accounting standards periods allow me to investigate whether and how the specific risk disclosures, i.e. credit risk disclosure and liquidity risk disclosure, affect to user uncertainty. The uncertainty proxies have been examined relying on types of financial reporting user (i.e. investors and financial analysts) to identify the effects of disclosure levels from time-span effects. The measurement is based on the random effect model as follows:

For SPREAD and STDRET;

$$SPREAD_{it} \text{ or } STDRET_{it} = \beta_{30} + \beta_{31} DISCVAR_{it} + \delta_{30} DISCVAR_{it} \times POST_{it} + \sum_{l=2}^{L+1} \beta_{3l} X_{lit} + \sum_{j=1}^{J-1} \gamma_{3j} IND_{jit} + \sum_{k=1}^{K-1} \lambda_{3k} C_{kit} + \varepsilon_{3it} \quad (2.4)$$

where $SPREAD_{it}$ and $STDRET_{it}$ are bid-ask spread and return volatility of firm *i* at the fiscal year end *t*. $POST_{it}$ is a dichotomous variable indicating IFRS7 adoption period, where $POST$ equals to 1 (0) for annual report filing dates on or after (before) IFRS7 adoption. $DISCVAR_{it}$ is disclosure variable of firm *i* at the fiscal year end *t*. X_{lit} is the control variables depending on such uncertainty proxy following Steffen (2016), Bens et al. (2015), and Lehavy et al. (2011).

However, as the reason of some key variables are not normal distribution and cannot solving by using winsorize technique, these variables are analyst forecast accuracy (ACCURACY), analyst forecast dispersion (DISPERSION), total analyst uncertainty (UNCTOTAL), and common analyst uncertainty (UNCCOMMON) as shown the histogram in figure 2.3, thus, the random-effects tobit model is used to censored the outlined data embeded in these variables. The measurement is as follows.

For ACCURACY, DISPERSION, and UNCTOTAL proxies;

$$ACCURACY_{it} \text{ or } DISPERSION \text{ or } UNCTOTAL_{it} = \begin{cases} \beta_{40} + \beta_{41} DISCVAR_{it} + \delta_{40} DISCVAR_{it} \times POST_{it} + \sum_{l=2}^{L+1} \beta_{4l} X_{lit} \\ \quad + \sum_{j=1}^{J-1} \gamma_{4j} IND_{jit} + \sum_{k=1}^{K-1} \lambda_{4k} C_{kit} + \varepsilon_{4it} \;\; if \;\; UNCPROXY_{it} < \tau_1 \\ \tau_1 \;\; if \;\; UNCPROXY_{it} \geq \tau_1 \end{cases} \quad (2.5)$$

For UNCCOMMON proxy;

$$UNCCOMMON_{it} = \begin{cases} 0 \;\; if \;\; UNCCOMMON_{it} \leq 0 \\ \beta_{50} + \beta_{51} DISCVAR_{it} + \delta_{50} DISCVAR_{it} \times POST_{it} \\ \quad + \sum_{l=2}^{L+1} \beta_{5l} X_{lit} + \sum_{j=1}^{J-1} \gamma_{5j} IND_{jit} + \sum_{k=1}^{K-1} \lambda_{5k} C_{kit} + \varepsilon_{5it} \\ \tau_2 \;\; if \;\; UNCCOMMON_{it} \geq \tau_2 \end{cases} \quad (2.6)$$

where $ACCURACY_{it}$, $DISPERSION_{it}$, $UNCTOTAL_{it}$ and $UNCCOMMON_{it}$ are the analyst-based proxy of firm *i* at the fiscal year end *t*. . $DISCVAR_{it}$ is disclosure variable of firm *i* at the fiscal year end *t*. $POST_{it}$ is a dichotomous variable indicating IFRS7 adoption period, where $POST$ equals to 1 (0) for annual report filing dates on or after (before) IFRS7 adoption X_{lit} is the control variables depending on such uncertainty proxy following Steffen (2016), Bens et al. (2015), and Lehavy et al. (2011). τ_1 and τ_2 are upper-censored limits that equal to 0.10 and 1.00, respectively.

The control variables used in the specification 2.4 are slightly different. For the specification with bid-ask spread (*SPREAD*), the control variables include: return on assets (*ROA*), leverage (*LEV*), book-to-market ratio (*BTM*), firm size (*SIZE*), average stock price (*PRICE*), average trading volume (*TURNOVER*), analyst following (*FOLLOW*), prior return volatility (*PASTSTDRET*), and average trade size (*TRADESIZE*). Return volatility (*STDRET*), for the specification with all control variables earlier mentioned, except prior return volatility (*PASTSTDRET*) and average trade size (*TRADESIZE*) are used.

For analyst uncertainty proxies, analyst forecast accuracy (*ACCURACY*), analyst forecast dispersion (*DISPERSION*), total analyst uncertainty (*UNCTOTAL*), and common analyst uncertainty (*UNCCOMMON*) are controlled by market capitalization (*LOGMCAP*), sales growth (*GROWTH*), the percentage of selling, general, and administrative expenses to operating expenses (*SGA*), and prior return volatility (*PASTSTDRET*) (Lehavy, Li, & Merkley, 2011; Steffen, 2016).

The specific individual control variables consist of industry and country. IND_{jit}, an industrial type represent by the industrial dummy *j*. C_{kit} is a firm country represented by the country dummy *k*. ε_{3it}, ε_{4it}, and ε_{5it} are the composite error term, $\varepsilon_{3it} = \alpha_{3i} + u_{3it}$, $\varepsilon_{4it} = \alpha_{4i} + u_{4it}$, and $\varepsilon_{5it} = \alpha_{5i} + u_{5it}$ where α_{3i} , α_{4i}, and α_{5i} are the cross-section error component and u_{3it}, u_{4it}, u_{5it} are the combined time series and cross-section error component.

The hypothesis H_{1c} proposes that the increasing of specific risk disclosure results in reduces user uncertainty. The negative coefficients δ_{30}, δ_{40}, and δ_{50} are expected for each uncertainty proxy.

2.4 Empirical results

2.4.1 Summary statistics

Table 2.2 panel A shows summary statistics for the sample of 226 firms or 2,367 firm-year observations. Panel A shows mean, median, and standard deviation of specific disclosure variables, which consist of total words and total sentences in annual reporting footnote (#WORDS and #SENTENCES), total keywords count (#KEYWORDS), total sentences containing keywords (#KEYWORDS SENTENCES), the density of keywords (DISCVAR1) and the density of sentences containing keywords (DISCVAR2), before and after the IFRS7 adoption period. The mean (median) value of #KEYWORDS is 15.474 (11.000) before IFRS7 adoption and increase to 36.239 (33.000) after IFRS7 adoption. This is similar to the mean (median) of #KEYWORD SENTENCES, DISCVAR1, and DISCVAR2 which grow up from 7.301 (5.000), 0.093 (0.064), and 1.363 (0.867) at the before IFRS7 adoption period to 14.628 (13.000), 0.174 (0.151), and 2.258 (1.923) after the IFRS7 adopting period, respectively. In summary, the preliminary results appear consistent with the IFRS7 adopting period that on average the specific risk disclosure variables are higher.

[Table 2.2]

Panel B presents descriptive statistics of the main variables for testing the informativeness of specific risk disclosures in this study. The mean (median) value of *DISCVAR1* and *DISCVAR2* are 0.160 (0.138) and 2.105 (1.762), respectively. Panel C shows the correlation matrix of such variable. The Pearson (top) and Spearman (bottom) correlation coefficients show that DISCVAR1 and DISCVAR2 are positively correlated with POST, the period of before and after IFRS 7 adoption, which is coincide with applied IFRS7 period. The correlations among the main variables of the Ohlson (1995) model (i.e. PRICE, BV, and EPS) are highly positive significance ($p < 0.01$), greater than 0.600 for each, as they should be. PRICE is negatively correlated with both measures of specific risk disclosure, DISCVAR1 and DISCVAR2, which is consistent with the divergence argument. However, these

associations cannot be used as the evidences to conclude about specific risk disclosure change after IFRS7 adoption and the informativeness of such disclosure, since there are other variables, such as country level and industry level, have significant correlation with DISCVAR1, DISCVAR2 and PRICE even the coefficients are quite low.

Panel D presents descriptive statistics of market-based variables for testing the effects of credit risk and liquidity risk disclosure under IFRS7 requirement on investor uncertainty in the pre- and post-IFRS7 adopting periods. The mean (median) of dependent variables, bid-ask spread (SPREAD) and return volatility (STDRET) are -5.736 (-5.749) and 0.019 (0.017), respectively. Panel E presents descriptive statistics of analysts-based variables. There are four dependent variables for testing the effect of specific risk disclosure under IFRS7 to analyst uncertainty, analyst forecast accuracy (ACCURACY), analyst forecast dispersion (DISPERSION), total analyst uncertainty (UNCTOTAL), and common analyst uncertainty (UNCCOMMON). The mean (median) are 3.064 (0.004), 0.017 (0.007), 0.029 (0.011), and 0.356 (0.333), respectively. The key variables of both measures which are not normal distribution, such as, BTM, PRICE, PASTSTDRET, and GROWTH are winsorized at the 1st and 99th percentile. In addition, variables ACCURACY, DISPERSION, UNCTOTAL, and UNCCOMMON are censored by random-effects tobit regression model as presented in equation (2.5) and equation (2.6).

2.4.2 Result on risk disclosure changes

Table 2.3 presents the result of H_{1a} testing the changes of credit risk and liquidity risk disclosures after the IFRS7 adoption. The result of random effects estimation appears as expected that the level of credit risk and liquidity risk disclosures are higher after firm adopts IFRS7. This is represented by the positive significant coefficient of *POST*, δ_{10} , which are 0.081 ($p<0.01$) and 0.872 ($p<0.01$) for both specific risk disclosure variables in the random-effects GLS regression. Moreover, there is the association between disclosure levels of firm and a country-level as the untabulated positive significant association between country-level variable of Finland, Ireland, and Netherlands and the specific risk disclosure variables by 0.117 ($p<0.01$), 0.064 ($p<0.05$), and 0.045 ($p<0.05$) for DISCVAR1 and by 2.026 ($p<0.01$), 1.337 ($p<0.01$), and 0.808 ($p<0.01$) for DISCVAR2, respectively.

[Table 2.3]

2.4.3 Result on the informativeness of specific risk disclosure under IFRS7

Table 2.4 presents the result of H_{1b} to test the informativeness of credit risk and liquidity risk disclosures after the IFRS7 adoption by examining the value relevance of the specific risk disclosure after IFRS7 adoption. The result shows that credit risk and liquidity risk disclosure are value relevant, as presented by the negative statistical significance coefficient of the interaction term DISCVAR1×POST and DISCVAR2×POST by -19.157 ($p<0.05$) and -1.391 ($p<0.05$) in the pooled OLS estimation for DISCVAR1 and DISCVAR2, respectively. Moreover, the result is more pronounce in the random effects estimation as showing the negative statistical significance coefficient of DISCVAR1×POST and DISCVAR2×POST by -23.495 ($p=0.002$) and -1.367 ($p=0.007$), respectively. The dummy variables, country and industry are not statistically significant for both estimations, indicating that country-level and industry-level are not associated with market value of firm. These empirical results indicate that the increases of credit risk and liquidity risk disclosure under IFRS7 adoption is informative.

[Table 2.4]

2.4.4 Result on the effect of specific risk disclosure under IFRS7 on user uncertainty

Table 2.5 and table 2.6 present the results of H_{1c} to test the effects of credit risk and liquidity risk disclosures after the IFRS7 adoption on investor uncertainty and analyst uncertainty using the six different proxies; bid-ask spread (SPREAD), return volatility (STDRET), analyst forecast dispersion (DISPERSION), analyst forecast accuracy (ACCURACY), total analyst uncertainty (UNCTOTAL), and common analyst uncertainty (UNCCOMMON). The effects will be estimated separately under the different type of dependent variables, market-based variables and analyst-based variables.

Regarding to the market-based proxies in table 2.5, the results show that credit risk and liquidity risk disclosures requirement under IFRS7 adoption are

associated with return volatility (STDRET) but not the bid-ask spread proxy (SPREAD). The statistic significant results appears in the positive coefficients of interaction terms DISCVAR1×POST and DISCVAR2×POST by 0.017 ($p<0.01$) and 1.001 ($p<0.01$) for the random-effects estimation, respectively. However, there is negative coefficient but not significant association between the specific risk disclosure and the bid-ask spread proxy (SPREAD). These results are inconsistent with the prediction of negative association between the specific risk disclosure under IFRS7 adoption and market-based uncertainty proxies.

[Table 2.5]

Regarding to the analyst-based proxies in table 2.6, there is no evidence shows the negative statistical significance association between specific risk disclosure and the remaining four analyst uncertainty proxies as expected. In contrary, the random-effects tobit regression present the positive significant coefficient of the interaction term DISCVAR1×POST and DISCVAR2×POST for analyst forecast accuracy (ACCURACY), analyst forecast dispersion (DISPERSION), and total analyst uncertainty (UNCTOTAL) by 0.046 ($p<0.01$), 0.023 ($p<0.01$), 0.039 ($p<0.05$) and 0.002 ($p<0.10$), 0.001 ($p<0.10$), 0.002 ($p<0.10$), respectively. And there is no association between specific risk disclosure and the individual analyst uncertainty (UNCCOMMON).

[Table 2.6]

To sum up, these empirical results are not support H_{1c}, indicating that the increases in credit risk and liquidity risk disclosures under IFRS7 adoption are not reduces user uncertainty in both group, investors and financial analysts, as presented by the positive coefficient of variables in return volatility (STDRET), analyst forecast accuracy (ACCURACY), and analyst forecast dispersion (DISPERSION).

2.5 Conclusion

Prior studies suggest the inconclusive risk perception of financial statement users in three arguments, boilerplates, divergence, and convergence. Under the IFRS7 requirements, credit risk and liquidity risk disclosures are the prominent risk disclosures users interested in and give more weight as an important factor in their financial statement assessment. This study investigates the effects of specific risk disclosure under the IFRS7 and shows that the increases in credit risk and liquidity risk disclosures are informative and reduces user uncertainty. The results of this study are support the hypotheses H_{1a} and H_{1b}, but are not support hypothesis H_{1c}. The informativeness of risk disclosure found in this study is consistent with the results of prior studies by Kravet and Muslu (2013), Campbell et al. (2014), and Bonetti et al. (2012) who find the evidence of an informativeness of risk disclosure. The empirical result which specifically shows that return volatility is wider with the increase risk disclosure is consistent with the divergence argument as suggested by Bonetti et al. (2012), Kravet and Muslu (2013), and Campbell et al. (2014). These findings indicate that when investors are provided with relevant and more specific information about credit risk and liquidity risk disclosure which make them to perceive more about the risk they may face, thus they demand higher return to compensate with the risk. Therefore, it shows in positive return volatility proxy (STDRET). This is consistent with the divergence argument. For the analyst-based proxies, I also find the same evidence of an association between the specific risk disclosure and such analyst-based proxies as presented by the return volatility proxy except the individual analyst uncertainty. The increase of analyst forecast accuracy, analyst forecast dispersion , and overall analyst uncertainty indicate that financial analysts also use this specific risk information and such that impact to their risk perception, as reflecting in the increment of each analyst uncertainty proxy.

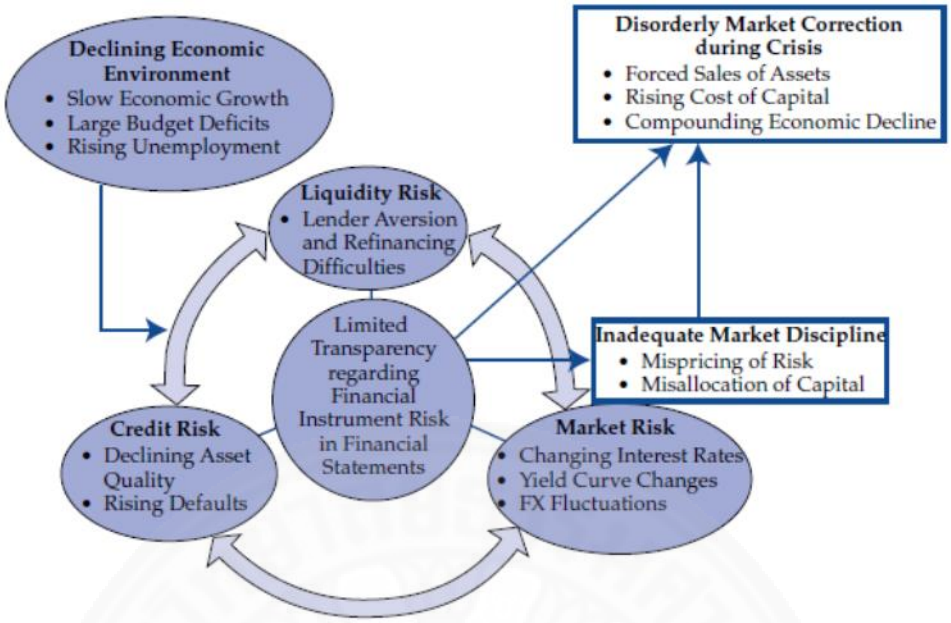

Figure 2.1 The consequences of limited transparency regarding risk disclosure under IFRS7

Source: "User perspectives financial instrument risk disclosures under International Financial Reporting Standards (IFRS)", by Papa, 2016, CFA Int., p.5.

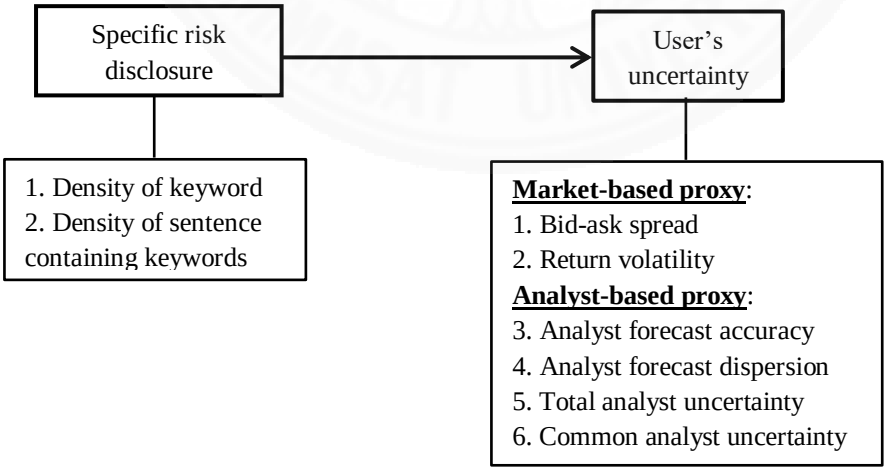

Figure 2.2 The proposed conceptual framework for study 1: The effect of specific risk disclosure under IFRS7 on user uncertainty

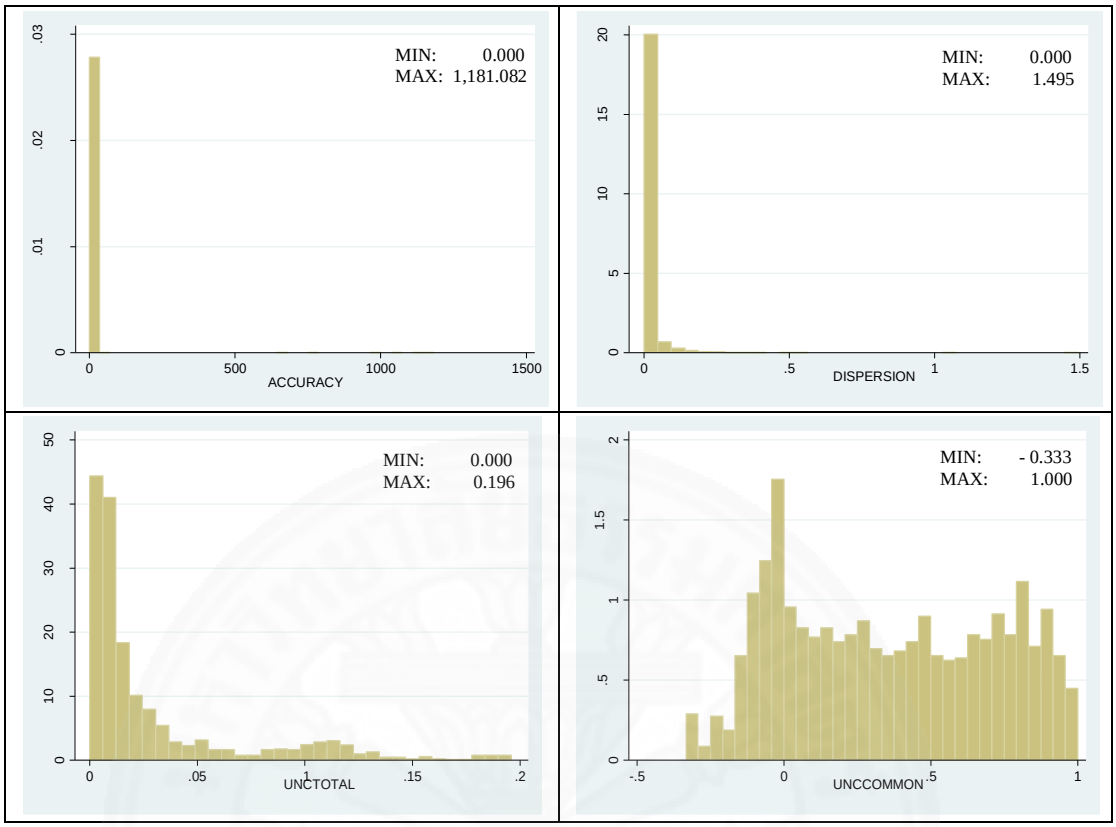

Figure 2.3 The histogram of some key variables containing with the extreme value

Table 2.1 Data and sample selection

Panel A: Samples selection process

	Number of firm	Number of observation
Initial firms in 62 principal stock exchange which adopt IFRS	46,639	513,029
Firms that are not match with the following requirements: (1) Firms with available data in DATASTREAM, I/B/E/S, and WORLDSCOPE database (2) Firms which are filed between January 1, 2005 and December 31, 2015 (3) Firms which have a fiscal year end on December 31 (4) Firms which are not financial industry	(45,940)	(505,340)
Firms with different currency	(397)	(4,367)
Firms which are unavailable annual reporting footnote	(76)	(836)
Firms with an unreadable format		(119)
Number of firms available for textual disclosure analysis	226	2,367

Panel B: Samples by country

Belgium	24	260
Finland	45	485
France	75	821
Ireland	7	69
Italy	27	281
Netherlands	41	388
Portugal	7	63
Total	226	2,367

Panel C: Sample of firm by industry

Basic Materials	15	160
Consumer Goods	37	388
Consumer Services	36	372
Healthcare	11	117
Industrials	81	852
Oil & Gas	7	74
Technology	27	282
Telecommunications	5	51
Utilities	7	71
Total	226	2,367

Table 2.2 Descriptive statistics

Panel A: Mean, median, and standard deviation of specific disclosure variables

	Pre-IFRS7 adoption			Post-IFRS7 adoption		
	Mean	**Median**	**S.D.**	**Mean**	**Median**	**S.D.**
#WORDS	18,441.140	16,852.000	10,497.030	22,502.120	20,732.000	11,225.17
#SENTENCES	1,229.215	531.000	3,912.631	796.935	646.000	1994.581
#KEYWORDS	15.474	11.000	16.369	36.851	33.000	28.853
#KEYWORD SENTENCES	7.301	5.000	7.860	14.628	13.000	11.723
DISCVAR1	0.093	0.064	0.102	0.174	.151	0.126
DISCVAR2	1.363	0.867	1.580	2.258	1.923	1.837

Note: N = 2,367 (405 observations for Pre-IFRS7 adoption and 1,962 observations for Post-IFRS7 adoption)

Panel B: Variables for testing the informativeness of specific risk disclosures

	Mean	**Std. Dev.**	**5%**	**25%**	**Median**	**75%**	**95%**
PRICE	27.097	33.811	1.562	7.280	16.680	33.920	80.780
BV	14.029	16.020	0.888	4.043	8.561	18.909	43.177
EPS	1.542	2.084	0.000	0.220	0.910	2.080	4.990
DISCVAR1	0.160	0.126	0.000	0.070	0.138	0.224	0.390
DISCVAR2	2.105	1.827	0.000	0.885	1.762	2.840	5.089

Note: N = 2,367

Table 2.2 (continued)

Panel C: Pearson (top) and Spearman (bottom) correlation coefficients of variable for testing the informativeness of specific risk disclosure

	PRICE^{+}	**BV^{+}**	**EPS^{+}**	**DISCVAR1**	**DISCVAR2**	**POST**	**C**	**IND**
PRICE^{+}		0.646***	0.677***	-0.134***	-0.110***	-0.062***	-0.158***	-0.124***
BV^{+}	0.749***		0.648***	-0.116***	-0.096***	0.038	-0.185***	-0.156***
EPS^{+}	0.692***	0.604***		-0.121***	-0.092***	-0.024***	-0.141***	-0.115***
DISCVAR1	-0.155***	-0.105***	-0.129***		0.835***	0.251***	0.023	-0.071***
DISCVAR2	-0.118***	-0.076***	-0.100***	0.861***		0.192***	-0.005***	-0.054***
POST	-0.135***	0.036	-0.058***	0.291***	0.242***		0.013	0.001
C	-0.102***	-0.129***	-0.076***	-0.088***	-0.089***	0.009		0.044**
IND	-0.116***	-0.164***	-0.097***	-0.077***	-0.053**	0.000	0.058***	

Note: N = 2,367, Panel A and Panel B present descriptive statistics of the specific risk disclosure variables and descriptive statistics of variables used to test the informativeness of specific risk disclosure, respectively. Panel C presents the correlation coefficients variables for testing the informativeness of specific risk disclosure. A symbol ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels. All continuous variables with the superscript '+' are winsorized at the 1st and 99th percentile.

Table 2.2 (continued)

Panel D: Market-based variables of investor uncertainty

	Mean	Std. Dev.	5%	25%	Median	75%	95%
SPREAD	-5.736	1.173	-7.594	-6.642	-5.749	-4.866	-3.835
STDRET	0.019	0.010	0.008	0.013	0.017	0.022	0.036
ROA	0.046	0.128	-0.057	0.017	0.043	0.074	0.147
LEV	0.590	0.237	0.290	0.478	0.582	0.695	0.831
BTM^{+}	0.695	0.509	0.172	0.357	0.548	0.869	1.722
SIZE	14.394	1.899	11.335	13.001	14.242	15.724	17.673
$PRICE^{+}$	27.097	33.811	1.562	7.280	16.680	33.920	80.780
TURNOVER	11.673	2.635	7.435	9.656	11.752	13.623	15.846
FOLLOW	12.198	9.304	1.000	5.000	9.000	18.000	31.000
$PASTSTDRET^{+}$	0.019	0.011	0.008	0.013	0.017	0.023	0.040
TRADESIZE	14.220	2.734	9.908	12.036	14.256	16.429	18.524

Note: N = 2,367, Panel D presents descriptive statistics of market-based variables for investor uncertainty testing. All continuous variables with the superscript '+' are winsorized at the 1st and 99th percentile.

Table 2.2 (continued)

Panel E: Analysts-based variables of analyst uncertainty

	Mean	Std. Dev.	5%	25%	Median	75%	95%
ACCURACY	3.064	54.841	0.000	0.001	0.004	0.019	0.220
DISPERSION	0.017	0.054	0.001	0.003	0.007	0.013	0.062
UNCTOTAL	0.029	0.040	0.002	0.005	0.011	0.031	0.119
UNCCOMMON	0.356	0.358	-0.142	0.021	0.333	0.685	0.910
LOGMCAP	13.974	1.872	11.027	12.639	13.862	15.298	17.144
$GROWTH^{+}$	-0.614	0.121	-0.760	-0.675	-0.630	-0.578	-0.435
SGA	12.879	1.823	9.824	11.666	12.841	14.148	15.970
$PASTSTDRET^{+}$	0.019	0.010	0.008	0.013	0.017	0.023	0.040

Note: N = 1,328, Panel E presents descriptive statistics of analysts-based variables for analyst uncertainty testing. All continuous variables with the superscript '+' are winsorized at the 1st and 99th percentile.

Table 2.3 Specific risk disclosure change

$$DISCVAR_{it} = \beta_{10} + \delta_{10}POST_{it} + \sum_{j=1}^{J-1} \gamma_{1j} IND_{jit} + \sum_{k=1}^{K-1} \lambda_{1k} C_{kit} + \varepsilon_{1it} \quad (2.1)$$

	Specific Risk Disclosure	
	DISCVAR1	**DISCVAR2**
Intercept	0.064	0.579
	(0.006)***	(0.078)*
POST	0.082	0.872
	(0.000)***	(0.000)***
IND	Included	Included
C	Included	Included
R^2	0.263	0.242

Note: N = 2,367 firm-year observations. This table presents the result of H_{1a} to test the association between specific risk disclosure changes and the IFRS7 adoption using the random effects estimation, where $DISCVAR_{it}$ is risk disclosure variables (i.e. the density of keywords and the density of sentences containing keywords) of firm *i* and year *t*. $POST_{it}$ is a dummy variable indicating IFRS7 adoption period, $POST$ equals to 1 (0) for annual report filing dates on or after (before) IFRS7 adoption with firm *i* and year *t*. IND_{jit} is an industrial type represent by the industrial dummy *j*. C_{kit} is a firm country represented by the country dummy *k*. ε_{1it} is the error component, $\varepsilon_{1it} = \alpha_{1i} + u_{1it}$ where α_{1i} is the cross-section error component and u_{1it} is the combined time series and cross-section error component. A symbol ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels.

Table 2.4 Value relevance of specific risk disclosure

$$PRICE_{it} = \beta_{20} + \beta_{21}BV_{it} + \beta_{22}EPS_{it} + \beta_{23}DISCVAR_{it} + \delta_{20}DISCVAR_{it} \times POST_{it} + \sum_{j=1}^{J-1}\gamma_{2j}IND_{jit} + \sum_{k=1}^{K-1}\lambda_{2k}C_{kit} + \varepsilon_{2it} \quad (2.3)$$

	PRICE^{+}			
	Pooled Estimation		**Random Effects Estimation**	
	DISCVAR1	**DISCVAR2**	**DISCVAR1**	**DISCVAR2**
Intercept	6.951	6.656	5.331	5.545
	(0.000)***	(0.000)***	(0.176)	(0.156)
BV^{+}	0.756	0.757	0.926	0.927
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
EPS^{+}	7.142	7.177	4.807	4.827
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
DISCVAR1	8.064		16.738	
	(0.380)		(0.060)*	
DISCVAR2		0.644		0.543
		(0.282)		(0.357)
DISCVAR1×POST	-19.157		-23.495	
	(0.028)**		(0.002)***	
DISCVAR2×POST		-1.391		-1.367
		(0.017)**		(0.007)***
IND	-	-	Included	Included
C	-	-	Included	Included
R^2	0.535	0.535	0.544	0.544

Note: N = 2,367 firm-year observations. This table presents the result of H_{1b} to test the informativeness of specific risk disclosure after the IFRS7 adoption by examining value relevance of the specific risk disclosure using the Ohlson (1995) model as a framework to apply with the random effects estimation, where $PRICE_{it}$ is an average price per share at the end of trading day during the calendar month following the annual report filing date. BV_{it} is book value per share of firm *i* at the fiscal year end, *t*. EPS_{it} is an earnings per share for firm *i* at year *t*. $DISCVAR_{it}$ is disclosure variable of firm *i* at year *t*. IND_{jit} is an industrial type represent by the industrial dummy *j*. C_{kit} is a firm country represented by the country dummy *k*. ε_{2it} is the error component, $\varepsilon_{2it} = \alpha_{2i} + u_{2it}$, where α_{2i} is the cross-section error component and u_{2it} is the combined time series and cross-section error component. A symbol ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels. All continuous variables with the superscript '+' are winsorized at the 1st and 99th percentile.

Table 2.5 The effect of specific risk disclosure under IFRS7 on investor uncertainty using market-based proxy; bid-ask spread (SPREAD) and return volatility (STDRET)

$$SPREAD_{it} \text{ or } STDRET_{it} = \beta_{30} + \beta_{31} DISCVAR_{it} + \delta_{30} DISCVAR_{it} \times POST_{it} + \sum_{l=2}^{L+1} \beta_{3l} X_{lit} + \sum_{j=1}^{J-1} \gamma_{3j} IND_{jit} + \sum_{k=1}^{K-1} \lambda_{3k} C_{kit} + \varepsilon_{3it} \quad (2.4)$$

	MARKET-BASED PROXY			
	SPREAD		STDRET	
	DISCVAR1	DISCVAR2	DISCVAR1	DISCVAR2
Intercept	-0.848	-0857	0.019	0.019
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
DISCVAR1	0.026		-0.015	
	(0.922)		(0.000)***	
DISCVAR1×POST	-0.092		0.017	
	(0.701)		(0.000)***	
DISCVAR2		0.009		-0.001
		(0.584)		(0.000)***
DISCVAR2×POST		-0.008		0.001
		(0.597)		(0.000)***
ROA	-0.116	-0.114	-0.004	-0.004
	(0.285)	(0.296)	(0.003)***	(0.004)***
LEV	0.267	0.265	0.007	0.007
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
BTM+	0.372	0.369	0.007	0.007
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
SIZE	-0.166	-0.164	-0.002	-0.002
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
PRICE+	-0.000	-0.000	0.000	0.000
	(0.463)	(0.466)	(0.430)	(0.473)
TURNOVER	-0.017	-0.016	0.001	0.001
	(0.412)	(0.417)	(0.000)***	(0.000)***
FOLLOW	-0.004	-0.004	0.000	0.000
	(0.210)	(0.207)	(0.136)	(0.134)
PASTSTDRET+	9.191	9.236		9.236
	(0.000)***	(0.000)***		(0.000)***
TRADESIZE	-0.204	-0.206		-0.206
	(0.000)***	(0.000)***		(0.000)***
IND	Included	Included	Included	Included
C	Included	Included	Included	Included
R^2	0.711	0.711	0.201	0.200

Note: N = 2,367 firm-year observations. This table presents the result of H_{1c} to test the effects of specific risk disclosure under IFRS7 adoption on investor uncertainty by using market-based as a proxy of investor uncertainty. The random effects estimation is used to test the uncertainty effect, where $UNCPROXY_{it}$ is bid-ask spread (*SPREAD*) or return volatility (*STDRET*) of firm *i* at the fiscal year end *t*. $POST_{it}$ is a dichotomous variable indicating IFRS7 adoption period, where $POST$ equals to 1 (0) for annual report filing dates on or after (before) IFRS7 adoption. $DISCVAR_{it}$ is disclosure variable of firm *i* at the fiscal year end *t*. X_{lit} is the control variables for the bid-ask spread proxy, that are return on assets (*ROA*), leverage (*LEV*), book-to-market ratio (*BTM*), firm size (*SIZE*), average stock price (*PRICE*), average trading volume (*TURNOVER*), analyst following (*FOLLOW*), prior return volatility (*PASTSTDRET*), and average trade size (*TRADESIZE*). Return volatility (*STDRET*), for the specification with all control variables earlier mentioned, except prior return volatility (*PASTSTDRET*) and average trade size (*TRADESIZE*) are used. The definition of all variables is provided in APPENDIX B: VARIABLE DEFINITION. IND_{jit}, an industrial type represent by the industrial dummy *j*. C_{kit} is a firm country represented by the country dummy *k*. ε_{3it} is the error component, $\varepsilon_{3it} = \alpha_{3i} + u_{3it}$, where α_{3i} is the cross-section error component and u_{3it} is the combined time series and cross-section error component. A symbol ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels. All continuous variables with the superscript '+' are winsorized at the 1st and 99th percentile.

Table 2.6 The effect of specific risk disclosure under IFRS7 on analyst uncertainty using analyst-based proxy; analyst forecast accuracy (ACCURACY), analyst forecast dispersion (DISPERSION), total analyst uncertainty (UNCTOTAL), and common analyst uncertainty (UNCCOMMON)

$$ACCURACY_{it}\ or\ DISPERSION_{it}\ or\ UNCTOTAL_{it} = \begin{cases} \beta_{40} + \beta_{41} DISCVAR_{it} + \delta_{40} DISCVAR_{it} \times POST_{it} + \sum_{l=2}^{L+1} \beta_{4l} X_{lit} \\ \quad + \sum_{j=1}^{J-1} \gamma_{4j} IND_{jit} + \sum_{k=1}^{K-1} \lambda_{4k} C_{kit} + \varepsilon_{4it} \ \ if\ \ UNCPROXY_{it} < \tau_1 \\ \tau_1 \ \ if\ \ UNCPROXY_{it} \geq \tau_1 \end{cases} \quad (2.5)$$

$$UNCCOMMON_{it} = \begin{cases} 0 \ \ if\ \ UNCCOMMON_{it} \leq 0 \\ \beta_{50} + \beta_{51} DISCVAR_{it} + \delta_{50} DISCVAR_{it} \times POST_{it} + \sum_{l=2}^{L+1} \beta_{5l} X_{lit} \\ \quad + \sum_{j=1}^{J-1} \gamma_{5j} IND_{jit} + \sum_{k=1}^{K-1} \lambda_{5k} C_{kit} + \varepsilon_{5it} \\ \tau_2 \ \ if\ \ UNCCOMMON_{it} \geq \tau_2 \end{cases} \quad (2.6)$$

	ACCURACY		DISPERSION		UNCTOTAL		UNCCOMMON	
	DISCVAR1	**DISCVAR2**	**DISCVAR1**	**DISCVAR2**	**DISCVAR1**	**DISCVAR2**	**DISCVAR1**	**DISCVAR2**
Intercept	-40.253	-40.309	0.105	0.106	0.174	0.176	0.324	0.317
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.393)	(0.401)
DISCVAR1	-0.014		-0.006		-0.014		0.373	
	(0.418)		(0.495)		(0.400)		(0.092)*	
DISCVAR1×POST	0.046		0.023		0.039		-0.142	
	(0.004)***		(0.009)***		(0.014)**		(0.487)	

Table 2.6 (continued)

	ACCURACY		DISPERSION		UNCTOTAL		UNCCOMMON	
	DISCVAR1	**DISCVAR2**	**DISCVAR1**	**DISCVAR2**	**DISCVAR1**	**DISCVAR2**	**DISCVAR1**	**DISCVAR2**
DISCVAR2		0.000		-0.000		-0.000		0.018
		(0.821)		(0.721)		(0.908)		(0.279)
DISCVAR2×POST		0.002		0.001		0.002		0.000
		(0.076)*		(0.066)*		(0.060)*		(0.997)
LOGMCAP	-0.006	-0.015	-0.007	-0.007	-0.010	-0.010	0.042	0.042
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.013)**	(0.011)**
GROWTH^{+}	0.023	0.019	0.008	0.007	0.013	0.013	0.163	0.157
	(0.004)***	(0.019)**	(0.080)*	(0.083)*	(0.123)	(0.120)	(0.134)	(0.148)
SGA	-0.004	-0.003	0.002	0.002	0.005	0.006	-0.008	-0.010
	(0.001)***	(0.063)*	(0.004)***	(0.002)***	(0.000)***	(0.000)***	(0.620)	(0.565)
PASTSTDRET^{+}	-0.181	-0.365	-0.166	-0.165	-0.256	-0.250	2.822	2.756
	(0.032)**	(0.000)***	(0.000)***	(0.000)***	(0.004)***	(0.005)***	(0.013)**	(0.016)**
IND	Included	Included	Included	Included	Included	Included	Included	Included
C	Included	Included	Included	Included	Included	Included	Included	Included

Table 2.6 (continued)

	ACCURACY		DISPERSION		UNCTOTAL		UNCCOMMON	
	DISCVAR1	**DISCVAR2**	**DISCVAR1**	**DISCVAR2**	**DISCVAR1**	**DISCVAR2**	**DISCVAR1**	**DISCVAR2**
Sigma_u	3.342	3.223	0.015	0.015	0.024	0.024	0.178	0.177
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Sigma_e	0.031	0.031	0.016	0.016	0.027	0.027	0.358	0.358
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Log likelihood	1,658.178	1,663.993	3,336.843	3,333.160	1,928.191	1,927.996	-669.437	-669.587
Chi-Square	31.406	18.660	126.400	118.080	67.670	67.14	25.05	24.85
N	1,505	1,505	1,342	1,342	1,157	1,157	1,157	1,157

Note: This table presents the result of H_{1c} to test the effects of specific risk disclosure under IFRS7 adoption on analyst uncertainty by using bid-ask spread (SPREAD) as a proxy of investor uncertainty. The random-effects estimation and the random-effects tobit estimation are used to test the uncertainty effect, where $UNCPROXY_{it}$ are analyst forecast accuracy (*ACCURACY*), analyst forecast dispersion (*DISPERSION*), total analyst uncertainty (*UNCTOTAL*), and common analyst uncertainty (*UNCCOMMON*) of firm *i* at the fiscal year end *t*. $POST_{it}$ is a dichotomous variable indicating IFRS7 adoption period, where $POST$ equals to 1 (0) for annual report filing dates on or after (before) IFRS7 adoption. $DISCVAR_{it}$ is disclosure variable of firm *i* at the fiscal year end *t*. X_{lit} is the control variables for the bid-ask spread proxy, that are market capitalization (*LOGMCAP*), sales growth (*GROWTH*), the percentage of selling, general, and administrative expenses to operating expenses (*SGA*), and prior return volatility (*PASTSTDRET*). The definition of all variables is provided in APPENDIX B: VARIABLE DEFINITION. IND_{jit}, an industrial type represent by the industrial dummy *j*. C_{kit} is a firm country represented by the country dummy *k*. ε_{4it} and ε_{5it} are the error component, $\varepsilon_{4it} = \alpha_{4i} + u_{4it}$and $\varepsilon_{5it} = \alpha_{5i} + u_{5it}$, where α_{4i} and α_{5i} are the cross-section error component and u_{4it} and u_{5it} are the combined time series and cross-section error component. A symbol ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels. All continuous variables with the superscript '+' are winsorized at the 1st and 99th percentile.

CHAPTER 3
COST OF CAPITAL AND SPECIFIC RISK DISCLOSURE UNDER IFRS7

3.1 Introduction

Information uncertainty arises from firm disclosure leads to the imprecise knowledge of firm value (Duffie & Lando, 2001; Zhang, 2006) and users' uncertainty (Johnstone, 2016). Financial reporting footnote is not only used by investors or intermediaries but also capital providers. Previous study provides the market consequence of credit risk and liquidity risk disclosure under IFRS 7 by focusing on investor uncertainty in their investment decision making and focuses on financial analyst uncertainty in their forecasting about firm performance under the theoretical literature that better disclosure helps to reduce user uncertainty about firms' future cash flows. This study provides another aspect of the effect of credit risk and liquidity risk disclosure under IFRS 7 by emphasizing on firm uncertainty reflecting by firm cost of capital.

3.2 Review of literature and hypotheses development

3.2.1 Risk disclosure and firms' cost of capital

The widely held theoretical literature suggests that the incremental disclosure reduce firm's cost of capital since disclosing lower information asymmetry, the component of firm's cost of capital, thus helps investors have more confident in their predictions of firm's future cash flows (Barry & Brown, 1985; Campbell et al., 2014; Easley & O'Hara, 2004; Lambert, Leuz, & Verrecchia, 2007). However, the existing empirical results about greater disclosure levels to a lower cost of capital have been criticized as misleading and inconclusive evidences (Dutta & Nezlobin, 2017; Heinle & Smith, 2017; Johnstone, 2016; Kothari et al., 2009). On the one hand is that high quality information or high precise information can make investors perceive about increases uncertainty of firm's future cash flows, thus leads to higher returns requirement or higher firm's cost of capital. On the other hand, the

incremental disclosure can help investors perceive more certainty about firms' future cash flow which results in reduce firm's cost of capital, especially for positive signal or good news, while in the case of negative signal or bad news leads to the adverse results (i.e. increase firm's cost of capital).

Dutta and Nezlobin (2017) investigate the association between information disclosure, firm growth, and the cost of capital suggest that a higher precision of public disclosure, a higher investors' uncertainty about firm's future cash flows and stock price, thus results in higher firm's cost of equity. Contrary to the recent study of Heinle and Smith (2017) who develops a model to explore the relationship between risk disclosure and cost of capital by investigating how investors respond to risk disclosure by affecting on firms' cost of capital. If risk disclosure leads to reduce uncertainty over the variance of firm's cash flows, it should reduce the firm's cost of capital. Using the Capital Asset Pricing Model (CAPM), the results show that risk disclosure decreases firm's cost of capital through the variance uncertainty of firm's cash flows. However, the results only appear in risk disclosure which concern about systematic risk disclosures but not for the idiosyncratic risk disclosures.

Johnstone (2016) studies the effect of information on firm's cost of capital finds both contrary empirical results and suggests that the firm's cost of capital not only depends on the quality and the quantity of information but also the direction of information (i.e. positive or negative). This empirical result is consistent with Kothari et al. (2009) who find that unfavorable disclosures accompany with higher risk measures and result in higher cost of capital. However, the empirical result from Kothari et al. (2009)'s study is not cover management's disclosure. They suggest this unexpected prediction may occur from the untimeliness of management's disclosure or the inaccurate of the cost of capital measures. This leaves the inconclusive answer about the cost of capital effect and unfavorable disclosure.

With regarding to credit risk disclosure and liquidity risk disclosure under IFRS 7, which are the idiosyncratic risk, require firm to disclose risks arising from financial instruments that the entity is exposed at the reporting date, indicating that IFRS 7 requires firm to provide a negative signal or unfavorable disclosure from firms' financial instruments, thus implying negative disclosure tone. Including to the

aforementioned inconclusive about the cost of capital effects and unfavorable disclosure, I therefore reexamine this association again by using the specific risk disclosure, credit risk disclosure and liquidity risk disclosure under IFRS 7, which are the idiosyncratic risk and represents as the unfavorable disclosure tone. This comes up with a research question that how does credit risk disclosure and liquidity risk disclosure affect to firm cost of capital.

This study is different from the recent one by using archival research to test the linkage between specific risk disclosure (i.e. credit risk and liquidity risk disclosures) and firms' cost of capital. The cost of capital in this study is defined as the expected return demanded by the informed investors.

3.2.2 Hypotheses development

Regarding to the research question how does increasing in specific risk disclosure can reduce firm cost of capital, hence, the association between specific risk disclosure and the company cost of capital will be investigated. Following Kothari et al (2009), Johnstone (2016), and Dutta and Nezlobin (2017) suggest that higher level of risk exposures, representing unfavorable tone, make investors feel more uncertain about firms' future cash flows and result in increases firm's cost of capital. In this study I, therefore, predict that firm with higher level of specific risk disclosures, credit risk and liquidity risk disclosure, has higher cost of capital. I develop the hypothesis as follows.

H_2: The increase level in credit risk and liquidity risk disclosure higher firm's cost of capital.

The proposed framework of this study is presented in Figure 3.1

[Figure 3.1]

3.2.3 Measurement of firm's cost of capital

It is intuitive that the Capital Asset Pricing Model (CAPM) is common used to estimate firm's cost of capital. For example, Heinle and Smith (2017) use the CAPM as underlying framework to construct the model to explore the association between risk disclosure and firm's cost of capital. However, the results appear that the model is partially applicable to risk disclosure setting. Kothari et al (2009)

use the Fama and French three factors model (FF3) to investigate the effects of different disclosure sources on firm's cost of capital. It appears that the effect of company's management disclosure on firm's cost of capital is not shown as predicted. It is argued that an inaccurate measure of firm's cost of capital used in this study may be the cause of this evidence. Moreover, the CAPM bases on return and the systematic risk whereas those studies are incorporated with both the systematic risk and the idiosyncratic risk, thus leads to the unpredicted results. According to these evidences, using the CAPM as the underlying theoretical framework may be problematic.

The implied cost of capital, hereafter "ICC" is another alternative approach proposed by previous studies to estimate the cost of capital (Easton, 2004; Gordon & Gordon, 1997; Hou, Dijk, & Zhang, 2012). The ICC is the expected rate of return implied by market prices, accounting numbers, earnings forecast, and dividends (Easton, 2007). In other words, it is the discount rate of firm's future cash flows discounted by the market. This approach is used to avoid a noisy proxy of realized returns which are used in many frameworks, such as the CAPM and the Fama and French (1993) three factor model, since these models are criticized to be deviated from the expected return during a long span (Hou et al., 2012).

This study focuses on the effects of credit risk and liquidity risk disclosures, which is the idiosyncratic risk, under the IFRS7 adoption on firm's cost of capital. In addition, credit risk and liquidity risk is more pronounce during the financial crisis period between 2007 and 2009. I, therefore, use the ICC to estimate the firm's cost of capital in this study by using the model-based earnings forecasts or the forecast earnings of individual firms to proxy for expected returns as suggested by Hou et al. (2012). To obtain individual firms' earnings forecasts, I estimate coefficients of the cross-sectional earnings model using the previous five years of data. The pooled cross-sectional regressions are as follows.

$$E_{i,t+1} = \beta_{60} + \beta_{61}SIZE_{i,t} + \beta_{62}D_{i,t} + \beta_{63}DD_{i,t} + \beta_{64}E_{i,t} + \beta_{65}NegE_{i,t} + \varepsilon_{6i,t+1} \qquad (3.1)$$

where $E_{i,t+1}$ is earnings of firm *i* for year *t*+1, $SIZE_{i,t}$ is firm size which calculated by the natural log of total assets, $D_{i,t}$ is dividend payout per share, $DD_{i,t}$ is dummy

variable that equals to 1 for dividend payer and 0 otherwise, $E_{i,t}$ is earnings of firm i for year t calculated by the natural log of net income, $NegE_{i,t}$ is dummy variable that equals to 1 for firm with negative earnings and 0 otherwise, and $\varepsilon_{6i,t+\tau}$ is the error term.

Following Hou et al. (2012), I start to estimate coefficients of the pooled cross-sectional earnings model from 2005 to 2015 by using prior five year data between 2000 and 2014. I regress the model each year which allow the coefficients of model vary over time, thus I can estimate earnings forecasts for each year from 2005 to 2015.

Next, the firm's cost of capital will be estimated. However, for the simplicity, the firm's cost of capital is estimated following Gordon and Gordon (1997). This measurement is basically developed from the dividend discount model. The strength of this approach is that it does not rely on realized returns. Instead, it estimates expected return directly from current stock prices and future cash flow which is reasonable with investor investment decision. Moreover, the findings of estimating the implies cost of capital (ICC) study by Hou et al. (2012) appear that using cross-sectional earnings model to estimate the implies cost of capital provide a strong positive predictor of future realized returns no matter which method is used to compute the implied cost of capital. For this reason I use the Gordon and Gordon (1997) to compute the implied cost of capital in this study. The Gordon (1997) model can be written as follows

$$COC_{it} = \frac{E_{it}\left(E_{i(t+1)}\right)}{PRICE_{it}} \tag{3.2}$$

where COC_{it} is the implied cost of capital of firm *i* in year *t*, $PRICE_{it}$ is average price per share during the calendar month following the annual report filing date of firm *i* in year *t*, E_{it} () is market expectations based on information available in year *t*, and $E_{i(t+1)}$ is earnings of firm *i* in year *t+1*.

3.3 Research Methodology

3.3.1 Textual analysis

This study uses textual risk disclosures same as the previous study in this dissertation.

3.3.2 Data and variables

Data in this study is from all companies listed in the principal stock exchange of 62 countries that adopt IFRS during the year 2000 – 2015. Sample firms that are used to estimate the cost of capital is generated by the intersection of firms that available annual report and DATASTREAM database. The requirements characteristics of data are similar to the previous study, that is (1) each firm has no missing data, and (2) has been filed between January 1, 2005 and December 31, 2015, and (3) has the fiscal year end on December 31, and (4) has to be non-financial industry, and (5) use functional currency in Euro, as shown in Table 3.3.

3.3.3 Analyzing the effect of specific risk disclosure under IFRS7 on firms' cost of capital

To examine the effect of specific risk disclosure under IFRS7 on cost of capital, I develop random effects model relying on the finding of Heinle and Smith (2017) is that, risk disclosure decreases firm's cost of capital through the uncertainty of firm's cash flows, by using bid-ask spread (*SPREAD*) and return volatility (*STDRET*) as the proxy of uncertainty. The random-effects tobit model is developed to test cost of capital effect as follows.

Before add the uncertainty proxy;

$$COC_{it} = \begin{cases} \beta_{70} + \beta_{71} DISCVAR_{it} + \delta_{70} DISCVAR_{it} \times POST_{it} \\ \quad + \sum_{j=1}^{J-1} \gamma_{7j} IND_{jit} + \sum_{k=1}^{K-1} \lambda_{7k} C_{kit} + \varepsilon_{7it} \\ \tau_3 \;\; if \; COC_{it} \geq \tau_3 \end{cases} \tag{3.3}$$

After adding the uncertainty proxy;

$$COC_{it} = \begin{cases} \beta_{80} + \beta_{81} DISCVAR_{it} + \delta_{80} DISCVAR_{it} \times POST_{it} \\ +\beta_{82} UNCPROXY_{it} + \sum_{j=1}^{J-1} \gamma_{8j} IND_{jit} + \sum_{k=1}^{K-1} \lambda_{8k} C_{kit} + \varepsilon_{8it} \\ \tau_4 \;\; if \; COC_{it} \geq \tau_4 \end{cases} \tag{3.4}$$

where COC_{it} is the implied cost of capital defined in equation (3.2). $POST_{it}$ is a dichotomous variable indicating IFRS7 adoption period, where $POST$ equals to 1 (0) for annual report filing dates on or after (before) IFRS7 adoption. $DISCVAR_{it}$ is

disclosure variable of firm *i* at the fiscal year end *t*. $UNCPROXY_{it}$ is one of the uncertainty proxies that are bid-ask spread (*SPREAD*) and return volatility (*STDRET*) of firm *i* at the fiscal year end *t*. IND_{jit}, an industrial type represent by the industrial dummy *j*. C_{kit} is a firm country represented by the country dummy *k*. ε_{7it} and ε_{8it} are the error component, $\varepsilon_{7it} = \alpha_{7i} + u_{7it}$ and $\varepsilon_{8it} = \alpha_{8i} + u_{8it}$, where α_{7i} and α_{8i} are the cross-section error component and u_{7it} and u_{8it} are the combined time series and cross-section error component a composite error term. τ_3 and τ_4 are upper-censored limits that equals to 1.00.

According to the hypothesis H_2 proposes that the increasing of credit risk and liquidity risk disclosure higher firm's cost of capital. The positive coefficients on $DISCVAR_{it} \times POST_{it}$, δ_{70} and δ_{80} are expected. Moreover, if investor uncertainty occurring from specific risk disclosure effect influent to firm's cost of capital, the coefficient of uncertainty proxy, β_{72} and β_{82} should be shown positively significance.

3.4 Empirical results

3.4.1 Summary statistics

Table 3.1 presents the descriptive statistics of observation for estimating the cross-sectional earnings model. The mean (median) of earnings, firm size, and dividend payout per share are 9.377 (9.315), 12.310 (12.126), and 23.763 (16.460), respectively. The Pearson (top) and Spearman (bottom) correlation matrix of variables for estimating the cross-sectional earnings model are shown in Table 3.2.

[Table 3.1]

[Table 3.2]

Table 3.3 presents the descriptive statistics of variables for testing the effects of specific risk disclosure under IFRS7 adoption on firm cost of capital. The mean (median) of firm cost of capital is 1.323 (0.561). The uncertainty proxies, bid-ask spread (SPREAD), return volatility (STDRET), analyst forecast dispersion

(DISPERSION), analyst forecast accuracy (ACCURACY), total analyst uncertainty (UNCTOTAL), and individual analyst uncertainty (UNCCOMMON), are employed to estimate firm cost of capital effects in this study. The Pearson (top) and Spearman (bottom) correlation matrix of variables used to test the effects of specific risk disclosure on firm cost of capital are shown in Table 3.4. Overall, cost of capital has positive correlated with IFRS7 adoption period, specific risk disclosure measurement, and all market-based uncertainty proxy, but has negative correlated with analyst-based uncertainty proxy except analyst forecast dispersion and individual analyst uncertainty.

[Table 3.3]

[Table 3.4]

3.4.2 Result on the effect of specific risk disclosure under IFRS7 on firm cost of capital

Table 3.5 presents the result of the random-effects tobit regression from the effect of specific risk disclosure under IFRS7 on firm cost of capital testing. There is the positive association between specific risk disclosure under IFRS7 adoption and firm cost of capital as presented by the positive statistically significant coefficient of the interaction term DISCVAR1×POST and DISCVAR2×POST by 0.366 ($p<0.01$) and 0.027 ($p<0.01$) for DISCVAR1 and DISCVAR2. The result support H_2 as predicted.

[Table 3.5]

Table 3.6 presents the results of testing the effect of specific risk disclosure under IFRS7 on firm cost of capital after add the key uncertainty proxy to the model. The results from the random-effects tobit regression show the significantly positive coefficient of interaction term DISCVAR1×POST and DISCVAR2×POST, δ_{70} and δ_{80} for both, the investor uncertainty proxy and analyst uncertainty proxy. Moreover, the association between the uncertainty proxy and firm's cost of capital appear in positive significant coefficient for all uncertainty

proxies except the analyst forecast accuracy (ACCURACY) and analysts' individual uncertainty. Overall, the results, thus, support the hypothesis H_2 that increase the specific risk disclosure under IFRS7 higher firm's cost of capital.

[Table 3.6]

3.5 Conclusion

This study examine the effect of specific risk disclosure, credit risk and liquidity risk disclosures, under the IFRS7 adoption and firm's cost of capital. Prior studies suggest the misleading and inconclusive evidences of higher disclosure level whether it helps lower firm's cost of capital. Overall, the results from random-effects tobit regression suggest that an incremental specific risk disclosure under IFRS7 increases firm's cost of capital, support the prediction of this study. Moreover, the result also appears that the cost of capital effect is positive associated with the market-based uncertainty proxy, bid-ask spread (SPREAD) and return volatility (STDRET), indicating that the specific risk disclosure leads to increased investor's risk perception which may be reflected through the investor uncertainty proxy and result in higher cost of capital to compensate their perceived risk. For example, once they are provided with the specific risk disclosure, they can no longer ensure that they can trade the stock in a certain price as they want in the future or they can get a certain stock return as they expect. These findings consistent with Johnstone (2016) and Dutta and Nezlobin (2017) who find that higher precision of unfavorable information increase user uncertainty about firm's value, thus leads to higher firm's cost of capital. Moreover, this is also consistent with Heinle and Smith (2017) who finds that the evidence of risk disclosure decreases firm's cost of capital only appears in the systematic risk disclosures but not in the idiosyncratic risk disclosures.

3.6 Robustness test

In order to ensure that the results in both studies are generalized for other methodology, I construct the generalized structure equation model (GSEM) to reexamine the effect of specific risk disclosure under IFRS7 adoption of study 1 and

study 2 again. GSEM allows all types of response variables used in this study. The diagram for testing the relationship of the specific risk disclosure, user uncertainty, and firm's cost of capital is depicted in Figure 3.2.

[Figure 3.2]

Regarding to the response variables which consist of both continuous variable and ordinal variable, and the data of some key continuous variables behave as non-normal distribution, thus, the three equations are tested within one time using the generalized structure equation model. The results are shown in Table 3.7.

[Table 3.7]

The results appear to support the main results that overall specific risk disclosure increase after the IFRS7 adoption as can be seen that there is the positive significant coefficient of the dummy variable POST for DISCVAR1 and DISCVAR2 by 0.082 ($p<0.01$) and 0.895 ($p<0.01$), respectively. Moreover, the increasing of specific risk disclosure activates user's risk perception for both types, investor and financial analyst, thus, appear in higher user uncertainty. The confirmed evidences are shown in the positive significant coefficient of DISCVAR1 and DISCVAR2 in panel A and panel B. In addition, these evidences also support the association between specific risk disclosure and the increase of firm's cost of capital, as shown in panel C.

In conclusion, the results of main study are generalized and reliable as confirmed by the robustness test.

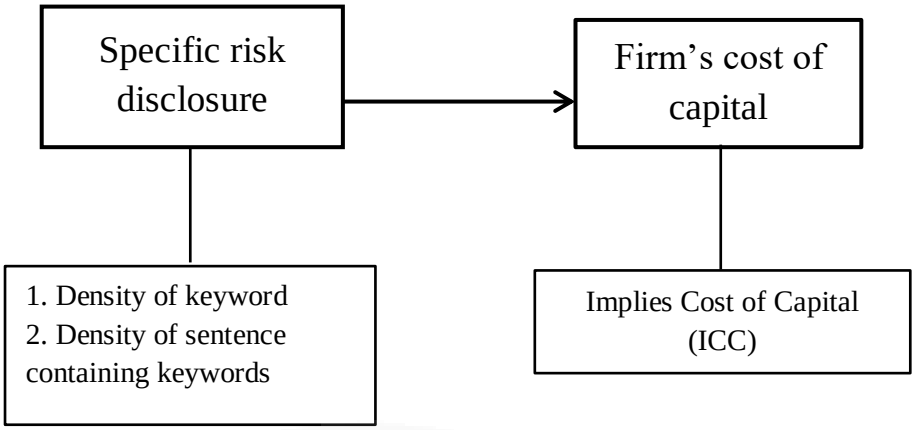

Figure 3.1 The proposed conceptual framework for study 2: The effect of specific risk disclosure under IFRS7 on firm's cost of capital

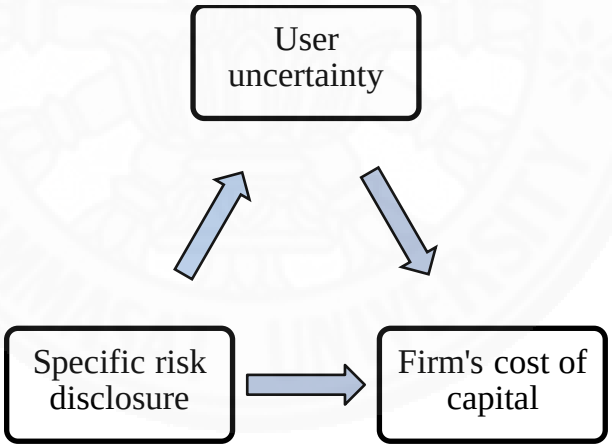

Figure 3.2 The diagram for testing the relationship of the specific risk disclosure, user uncertainty, and firm's cost of capital

Table 3.1 Summary statistics of variables for estimating the cross-sectional earnings model

	N	Mean	Std. Dev.	5%	25%	Median	75%	95%
E_t	10,639	9.377	2.449	5.318	7.699	9.315	11.123	13.495
$SIZE_t$	14,596	12.310	2.433	8.601	10.562	12.126	13.954	16.691
D_t	12,573	23.763	27.138	0.000	0.000	16.460	41.360	79.370

Note: The table presents descriptive statistics of variables used to estimate the cross-sectional earnings model. The data variables are gathering from DATASTREAM between 2000 and 2015.

Table 3.2 Pearson (top) and Spearman (bottom) correlation coefficients of variables for estimating the cross-sectional earnings model

	E_t	$SIZE_t$	D_t
E_t		0.891***	0.289***
$SIZE_t$	0.913***		0.331***
D_t	0.318***	0.287***	

Note: This table provides correlation coefficients for the variables used to estimate the cross-sectional earnings model. A symbol ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels.

Table 3.3 Variables for testing the effects of specific risk disclosures on firm cost of capital

	N	Mean	Std. Dev.	5%	25%	Median	75%	95%
COC	2,414	1.323	2.703	0.131	0.293	0.561	1.256	4.928
DISCVAR1	2,367	0.160	0.126	0.000	0.070	0.138	0.224	0.390
DISCVAR2	2,367	2.104	1.827	0.000	0.885	1.762	2.840	5.089
SPREAD	2,367	-5.736	1.173	-7.594	-6.642	-5.749	-4.866	-3.835
STDRET	2,367	0.019	0.010	0.008	0.126	0.017	0.022	0.036

Note: This table presents descriptive statistics of variables used to test the effects of specific risk disclosure on firm cost of capital.

Table 3.4 Pearson (top) and Spearman (bottom) correlation coefficients of variables used to test the effects of specific risk disclosure on firm cost of capital

	COC	POST	DISCVAR1	DISCVAR2	SPREAD	STDRET
COC		0.117***	0.053**	-0.002	0.293***	0.136***
POST	0.089***		0.251***	0.192***	0.081***	0.208***
DISCVAR1	0.097***	0.297***		0.835***	0.054***	0.090***
DISCVAR2	0.080***	0.261***	0.857***		0.021	0.065***
SPREAD	0.284***	0.063***	-0.004	-0.038		0.167***
STDRET	0.164***	0.261***	0.100***	0.103***	0.104***	

Note: This table provides correlation coefficients for the variables used to test the effects of specific risk disclosure on firm cost of capital. A symbol ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels. All continuous variables with the superscript '+' are winsorized at the 1st and 99th percentile.

Table 3.5 The effect of specific risk disclosure under IFRS7 on firm cost of capital

$$COC_{it} = \begin{cases} \beta_{70} + \beta_{71} DISCVAR_{it} + \delta_{70} DISCVAR_{it} \times POST_{it} \\ \quad + \sum_{j=1}^{J-1} \gamma_{7j} IND_{jit} + \sum_{k=1}^{K-1} \lambda_{7k} C_{kit} + \varepsilon_{7it} \\ \tau_3 \ if \ COC_{it} \geq \tau_3 \end{cases} \quad (3.3)$$

	COC	
	DISCVAR1	**DISCVAR2**
Intercept	0.514	0.523
	(0.000)***	(0.000)***
DISCVAR1	-0.183	
	(0.132)	
DISCVAR2		-0.016
		(0.054)*
DISCVAR1×POST	0.366	
	(0.000)***	
DISCVAR2×POST		0.027
		(0.000)***
IND	Included	Included
C	Included	Included
Sigma_u	0.303	0.308
	(0.000)***	(0.000)***
Sigma_e	0.223	0.223
	(0.000)***	(0.000)***
Log likelihood	-420.823	-422.248
Chi-Square	231.120	236.570

Note: N = 1,708 firm-year observations. This table presents the result of H_2 to test the effect of specific risk disclosure changes under IFRS7 adoption on firm's cost of capital using the random-effects tobit estimation, where COC_{it} is the implied cost of capital defined in equation (3.2). $DISCVAR_{it}$ is risk disclosure variables (i.e. the density of keywords and the density of sentences containing keywords) of firm *i* and year *t*. $POST_{it}$ is a dummy variable indicating IFRS7 adoption period, $POST$ equals to 1 (0) for annual report filing dates on or after (before) IFRS7 adoption with firm *i* and year *t*. IND_{jit} is an industrial type represent by the industrial dummy *j*. C_{kit} is a firm country represented by the country dummy *k*. ε_{7it} is the error component, $\varepsilon_{7it} = \alpha_{7i} + u_{7it}$ where α_{7i} is the cross-section error component and u_{7it} is the combined time series and cross-section error component. τ_3 and τ_4 are upper-censored limits that equals to 1.00.A symbol ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels.

Table 3.6 The effect of specific risk disclosure under IFRS7 on firm cost of capital after adding market-based uncertainty proxy; bid-ask spread (SPREAD) and return volatility (STDRET)

$$COC_{it} = \begin{cases} \beta_{80} + \beta_{71} DISCVAR_{it} + \delta_{80} DISCVAR_{it} \times POST_{it} \\ +\beta_{82} UNCPROXY_{it} + \sum_{j=1}^{J-1} \gamma_{8j} IND_{jit} + \sum_{k=1}^{K-1} \lambda_{8k} C_{kit} + \varepsilon_{8it} \\ \tau_4 \ \ if \ COC_{it} \geq \tau_4 \end{cases} \quad (3.4)$$

	COC			
	SPREAD		STDRET	
	DISCVAR1	DISCVAR2	DISCVAR1	DISCVAR2
Intercept	1.279	1.287	0.347	0.353
	(0.000)***	(0.000)***	(0.001)***	(0.000)***
DISCVAR1×POST	0.222		0.157	
	(0.000)***		(0.003)***	
DISCVAR2×POST		0.015		0.011
		(0.000)***		(0.004)***
SPREAD	0.127	0.127		
	(0.000)***	(0.000)***		
STDRET			8.532	8.556
			(0.000)***	(0.000)***
IND	Included	Included	Included	Included
C	Included	Included	Included	Included
Sigma_u	0.286	0.287	0.305	0.307
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Sigma_e	0.208	0.208	0.214	0.214
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Log likelihood	-307.916	-308.701	-373.649	-374.066
Chi-Square	340.450	338.600	349.910	348.230

Note: N = 1,708 firm-year observations. This table presents the result of H_2 to test the effect of specific risk disclosure changes under IFRS7 adoption on firm's cost of capital using the random-effects tobit estimation, where COC_{it} is the implied cost of capital defined in equation (3.2). $DISCVAR_{it}$ is risk disclosure variables (i.e. the density of keywords and the density of sentences containing keywords) of firm *i* and year *t*. $POST_{it}$ is a dummy variable indicating IFRS7 adoption period, $POST$ equals to 1 (0) for annual report filing dates on or after (before) IFRS7 adoption with firm *i* and year *t*. $UNCPROXY_{it}$ is one of the uncertainty proxies that are bid-ask spread (*SPREAD*), return volatility (*STDRET*) of firm *i* at the fiscal year end *t*. IND_{jit} is an industrial type represent by the industrial dummy *j*. C_{kit} is a firm country represented by the country dummy *k*. ε_{8it} is the error component, $\varepsilon_{8it} = \alpha_{8i} + u_{8it}$ where α_{8i} is the cross-section error component and u_{8it} is the combined time series and cross-section error component. A symbol ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels.

Table 3.7 The result of specific risk disclosure change after IFRS7 adoption and the effect of specific risk disclosure under IFRS7 on user uncertainty and firm's cost of capital using Generalized structure equation model

Panel A: The specific risk disclosure change after IFRS7 adoption and the effect of specific risk disclosure under IFRS7 on user uncertainty (DISCVAR1)

	Specific risk disclosure change	**User uncertainty**					
		Market-based proxy		**Analyst-based proxy**			
	DISCVAR1	**SPREAD**	**STDRET**	**ACCURACY**	**DISPERSION**$^{+}$	**UNCTOTAL**	**UNCCOMMON**
Intercept	0.093	-0.497	0.021	0.050	0.048	0.058	-0.202
	(0.000)***	(0.001)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.169)
POST	0.082						
	(0.000)***						
DISCVAR1		-0.180	0.003	0.014	0.015	0.018	0.262
		(0.098)*	(0.037)**	(0.063)*	(0.002)***	(0.055)*	(0.013)**
ROA		0.019	-0.006				
		(0.864)	(0.000)***				
LEV		0.183	0.005				
		(0.002)***	(0.000)***				
BTM^{+}		0.267	0.007				
		(0.000)***	(0.000)***				
SIZE		-0.131	-0.002				
		(0.000)***	(0.000)***				
PRICE^{+}		0.000	0.000				
		(0.372)	(0.003)***				

Table 3.7 (continued)

Panel A: The specific risk disclosure change after IFRS7 adoption and the effect of specific risk disclosure under IFRS7 on user uncertainty (DISCVAR1)

	Specific risk disclosure change	User uncertainty					
		Market-based proxy		Analyst-based proxy			
	DISCVAR1	SPREAD	STDRET	ACCURACY	DISPERSION+	UNCTOTAL	UNCCOMMON
TURNOVER		0.091	0.002				
		(0.000)***	(0.000)***				
FOLLOW		-0.006	0.000				
		(0.020)**	(0.525)				
PASTSTDRET+		11.560					
		(0.000)***					
TRADESIZE		-0.332					
		(0.000)***					
LOGMCAP				-0.003	-0.004	-0.005	0.051
				(0.000)***	(0.000)***	(0.000)***	(0.000)***
GROWTH+				0.025	0.006	0.011	0.105
				(0.003)***	(0.268)	(0.267)	(0.344)
SGA				0.002	0.002	0.003	-0.020
				(0.011)**	(0.000)***	(0.007)***	(0.134)
PASTSTDRET+				0.121	0.060	0.168	3.582
				(0.166)	(0.250)	(0.105)	(0.002)***

Table 3.7 (continued)

Panel B: The specific risk disclosure change after IFRS7 adoption and the effect of specific risk disclosure under IFRS7 on user uncertainty (DISCVAR2)

	Specific risk disclosure change	User uncertainty					
		Market-based proxy		Analyst-based proxy			
	DISCVAR2	SPREAD	STDRET	ACCURACY	DISPERSION+	UNCTOTAL	UNCCOMMON
Intercept	1.36	-0.527	0.021	0.051	0.049	0.058	-0.194
	(0.000)***	(0.001)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.183)
POST	0.895						
	(0.000)***						
DISCVAR2		-0.008	0.000	0.001	0.001	0.001	0.020
		(0.286)	(0.034)**	(0.047)**	(0.011)**	(0.015)**	(0.005)***
ROA		0.017	-0.006				
		(0.872)	(0.000)***				
LEV		0.183	0.005				
		(0.002)***	(0.000)***				
BTM+		0.265	0.007				
		(0.000)***	(0.000)***				
SIZE		-0.130	-0.002				
		(0.000)***	(0.000)***				
PRICE+		0.000	0.000				
		(0.374)	(0.003)***				

Table 3.7 (continued)

Panel B: The specific risk disclosure change after IFRS7 adoption and the effect of specific risk disclosure under IFRS7 on user uncertainty (DISCVAR2)

	Specific risk disclosure change	User uncertainty					
		Market-based proxy		Market-based proxy			
	DISCVAR2	**SPREAD**	**STDRET**	**ACCURACY**	**DISPERSION^{+}**	**UNCTOTAL**	**UNCCOMMON**
TURNOVER		0.089	0.002				
		(0.000)***	(0.000)***				
FOLLOW		-0.006	0.000				
		(0.016)**	(0.515)				
PASTSTDRET^{+}		11.586					
		(0.000)***					
TRADESIZE		-0.331					
		(0.000)***					
LOGMCAP				-0.003	-0.004	-0.005	0.049
				(0.000)***	(0.000)***	(0.000)***	(0.000)***
GROWTH^{+}				0.024	0.005	0.011	0.104
				(0.003)***	(0.296)	(0.267)	(0.351)
SGA				0.002	0.002	0.003	-0.019
				(0.010)***	(0.000)***	(0.006)***	(0.148)
PASTSTDRET^{+}				0.123	0.061	0.168	3.581
				(0.158)	(0.243)	(0.105)	(0.002)***

Table 3.7 (continued)

Panel C: The effect of specific risk disclosure under IFRS7 on firm's cost of capital

	COC					
	Before adding uncertainty proxy		After adding uncertainty proxy			
	DISCVAR1	DISCVAR2	DISCVAR1		DISCVAR2	
			SPREAD	STDRET	SPREAD	STDRET
Intercept	0.599	0.627	1.467	0.413	1.498	0.438
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
DISCVAR1	0.338		0.339	0.343		
	(0.000)***		(0.000)***	(0.000)***		
DISCVAR2		0.016			0.014	0.013
		(0.004)***			(0.005)***	(0.018)**
SPREAD			0.148		0.149	
			(0.000)***		(0.000)***	
STDRET				10.877		11.039
				(0.000)***		(0.000)***

Note: This table presents the result of robustness test to reexamine the effect of specific risk disclosure changes under IFRS7 adoption and its' impact on user uncertainty and on firm's cost of capital by using the generalized structural equation model (GSEM), where COC_{it} is the implied cost of capital defined in equation (3.2). $DISCVAR_{it}$ is risk disclosure variables (i.e. the density of keywords and the density of sentences containing keywords) of firm i and year t. $POST_{it}$ is a dummy variable indicating IFRS7 adoption period, POST equals to 1 (0) for annual report filing dates on or after (before) IFRS7 adoption with firm i and year t. $UNCPROXY_{it}$ is one of the uncertainty proxies that are is bid-ask spread (SPREAD), return volatility (STDRET), analyst forecast accuracy (ACCURACY), analyst forecast dispersion (DISPERSION), total analyst uncertainty (UNCTOTAL), and common analyst uncertainty (UNCCOMMON) of firm i at the fiscal year end t. A symbol ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels.

CHAPTER 4
DISCUSSIONS AND RECOMMENDATIONS

Previous studies in risk disclosure provide inconclusive findings about the informativeness of risk disclosure and its market consequence, as appear in the three inconclusive arguments about the informativeness of risk disclosure and the misleading evidences about its impact to firm's cost of capital. The current studies proposed that the specific risk disclosure communicated by firm has to be considered in risk disclosure study.

This study investigates the effect of specific risk disclosure under IFRS7 on user uncertainty and firm's cost of capital. Considering the specific risk disclosure under IFRS7 adoption communicated by firm, it is concluded that firm's specific risk disclosure under IFRS7 is informative and affect the perception of market sentiment. As those results appear in the increasing of market-based uncertainty, analyst-based uncertainty, and also increasing of firm's cost of capital. These findings answer the research questions and support hypotheses H_{1a}, H_{1b}, and H_2 but not for H_{1c}, indicating that increasing specific risk disclosure is informative and helps users to perceive more about firm's risk. Although there was the positive significant of the uncertainty proxies for H_{1c} testing which is not consistent with the prediction, these findings are reasonable for explaining market behavior. The findings are consistent with Bonetti et al. (2012), Kravet and Muslu (2013) and Campbell et al. (2014) who provide the informative evidences of risk disclosure, and also support the divergence argument of risk disclosure. In contrary, these findings are inconsistent with Linsley and Shrives (2006) who find the uninformative risk disclosure evidence in UK market, including to Linsmeier et al. (2002) who find that systematic risk disclosure (i.e. market risk disclosure) reduces users' uncertainty. The reason for difference in findings is plausible because of the different type of risk. This study investigates the specific risk disclosure under IFRS7 adoption and focuses on credit risk and liquidity risk disclosure while Linsley and Shrives (2006)'s study focuses on all risk disclosure in the annual report, therefore, the effect of risk disclosure on the market consequence appear different result. This is consistent with Bao and Datta (2014) who suggest that market perception about risk disclosure depends on the types of risk disclosure.

Moreover, this study emphasizes on the idiosyncratic risk (i.e. credit risk disclosure and liquidity risk disclosure) whereas the Linsmeier et al. (2002) focus on the systematic risk disclosure (i.e. market risk disclosure), thus, the disclosure effect results in different argument.

This study shows the effect of specific risk disclosure under IFRS7 adoption which suggest the informative information to financial users and increase the users' risk perception both investor and financial analyst. Such informativeness of the risk disclosure thus results in higher firm's cost of capital.

This study contribute to the academic by adding the literature that supports the value relevant of financial risk disclosure as well as provides an empirical evidence of capital market, that is increase specific risk disclosure helps to increase users' risk perception and investment decision making. This also complements literature of the linkage between users' risk perception, user uncertainty, firm's cost of capital and specific risk disclosure in accordance with the IFRS7 requirements. Moreover, the implication in this study may be beneficial in Thailand capital market context since TFRS7, Financial Instruments: Disclosure, which is interpreted from IFRS7 by the Federation of Accounting Profession and will be effective for Thai company on January 1, 2019. Regulator may use the criterion in this study to measure the informativeness of risk disclosure under the TFRS7 adoption and its impact on Thai capital market. In addition, financial statement users may realize more about the quality of information firm communicate to them rather than the quantity of information firm try to provide.

The results of this study are subject to certain limitations. First, many annual reporting footnotes are not provided via company internet website or other information sources, so the sample size is quite small especially for data before the IFRS7 adoption. Second, the different format of annual reporting footnote for each sample leads to an error of textual analysis process in Python. As a consequence, many samples are eliminated and the sample size is further reduced.

Although this study tries to investigate the effect of specific risk disclosure under IFRS7 adoption, the regression model may not be the best methodology to be used to find the causal relationship between the key variables used in this study. Further study may use the experimental research to test the causal effect that will be better.

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APPENDICES

APPENDIX A

THE NEW DEFINED-DICTIONARY

Credit risk keywords		Liquidity risk keywords	
Keywords	Allowable suffix examples	Keywords	Allowable suffix examples
(1) Aging		(1) Agreement*	agreement, agreements
(2) Contract*	contracts, contractual		commitment,
(3) Counterpart*	counterparty, counterparties	(2) Commitment*	commitments
(4) Credit*	credit, creditworthiness	(3) Committed	covenant, covenants
(5) Default*	default, defaults	(4) Covenant*	creditor, creditors
(6) Obligation*	obligation, obligations	(5) Creditor*	
(7) Receivable*	receivable, receivables	(6) Debt	
(8) Term*	term, terms	(7) Financing	liability, liabilities
		(8) Liabilit*	liquid, liquidity,
		(9) Liquid*	liquidities
			maturity, maturities
		(10) Maturit*	payable, payables
		(11) Payable*	repay, repayment
		(12) Repay*	

* Keyword with allowable suffixes

APPENDIX B

VARIABLE DEFINITION

Variables	Definition	Data source	Literature
Dependent Variables:			
SPREAD	Bid-Ask Spread calculated by the natural log of the average daily bid-ask spread during the calendar month following the annual report filing date. Bid-ask spread is measured as the difference between daily ending bid price and daily ending ask price scaled by the average of bid-ask.	Datastream	Leuz & Verrecchia, 2000a; Steffen, 2016; Bens et al., 2016
STDRET	Return Volatility calculated by the standard deviation of daily returns during the calendar month following the annual report filing date.	Datastream	Leuz & Verrecchia, 2000a; Zhang, 2006; Steffen, 2016; Bens et al., 2016
ACCURACY	Analyst Forecast Accuracy calculated by the squared difference between the analyst consensus EPS forecast and the IBES actual EPS, scaled by stock price prior year before the consensus forecast date.	IBES Datastream	Lehavy et al., 2011; Steffen, 2016
DISPERSION	Analyst Forecast Dispersion calculated by the standard deviation of the individual analyst forecast in the first analyst consensus annual earnings forecast issued after the annual report filing date, scaled by stock price prior year before the consensus forecast date.	IBES Datastream	Zhang, 2006; 2011; Lehavy et al., 2011; Steffen, 2016
UNCTOTAL	Total analyst uncertainty		Lehavy et al., 2011; Steffen, 2016
UNCCOMMON	Common analyst uncertainty		Lehavy et al., 2011; Steffen, 2016

Variables	Definition	Data source	Literature
Independent Variables:			
#WORDS	Total words count in the annual report footnote	Annual report footnotes	Campbell et al., 2014; Kravet and Muslu,2013
#KEYWORDS	Total keywords in the section of credit risk and liquidity risk disclosure in the annual report footnotes which match to the new defined dictionary.	Annual report footnotes	Campbell et al., 2014; Kravet and Muslu,2013; Steffen, 2016
#SENTENCES	Total sentences count in the annual report footnote	Annual report footnotes	Kravet and Muslu, 2013
#KEYWORD SENTENCES	The count of sentences containing keywords in the section of credit risk and liquidity risk disclosure in the annual report footnotes which match to the new defined dictionary.	Annual report footnotes	Kravet and Muslu, 2013
DISCVAR1	The percentage of total keywords in the section of credit risk and liquidity risk disclosure in the annual report footnotes which match to the new defined dictionary scale by total words count.	Annual report footnotes	Kravet and Muslu, 2013
DISCVAR2	The percentage of total keyword sentences in the section of credit risk and liquidity risk disclosure in the annual report footnotes which match to the new defined dictionary scale by total sentences count.	Annual report footnotes	Kravet and Muslu, 2013
Control Variables:			
ROA	Return on assets calculated by the net income scaled by total assets.	Worldscope	Piotroski & Roulstore, 2004; Steffen, 2016; Bens et al., 2016
LEV	Leverage calculated by the total liabilities scaled by total assets.	Worldscope	Steffen, 2016 Bens et al., 2016

Variables	Definition	Data source	Literature
Control Variables:			
BTM	Book-to-market ratio calculated by the shareholder equity scaled by the product of market price close and common share outstanding.	Worldscope	Daniel & Titman, 1997; Steffen, 2016; Bens et al., 2016
SIZE	Firm size calculated by the natural log of total assets.	Worldscope	Leftwich, Watts, and Zimmerman, 1981; Daniel & Titman, 1997; Beretta & Bozzolan, 2004; Steffen, 2016; Bens et al., 2016
PRICE	Average price per share during the calendar month following the annual report filing date.	Datastream	Steffen, 2016; Bens et al., 2016
TURNOVER	Average trading volume calculated by the natural log of the average daily trading volume during the calendar month following the annual report filing date.	Datastream	Steffen, 2016; Bens et al., 2016
FOLLOW	Average number of analyst following calculated by the natural log of the number of individual analysts issuing an EPS forecast.	IBES	Trueman, 1996; Piotroski & Roulstore, 2004; Steffen, 2016; Bens et al., 2016
PASTSTDRET	Previous return volatility calculated by the standard deviation of daily returns during the calendar month ending one day prior to the annual report filing date.	Datastream	Steffen, 2016; Bens et al., 2016
TRADESIZE	Average trade size calculated by the natural log of trade size during the calendar month following the annual report filing date.	Datastream	Brennan & Subrahmanyam, 1998; Steffen, 2016; Bens et al., 2016

Variables	Definition	Data source	Literature
Control Variables:			
LOGMCAP	The natural log of market capitalization at the fiscal year end calculated by the product of market price and common share outstanding.	Worldscope	Steffen, 2016; Bens et al., 2016
GROWTH	The compound average sales growth over year t-5 to t-3.	Worldscope	Steffen, 2016; Bens et al., 2016, Dutta and Nezlobin, 2017
SGA	SG&A expenses scales by operating income, calculated by the previous fiscal year.	Worldscope	Steffen, 2016; Bens et al., 2016

BIOGRAPHY

Name	Mrs. Phunphit Thitinun
Date of Birth	December 07, 1973
Educational Attainment	1997: Bachelor of Accounting, Chiang Mai University 2005: Master of Business Administration, Prince of Songkla University
Work Position	Lecturer, Faculty of Management Science, Princess of Naradhiwas University
Scholarship	Year 2012: The Development of Lecturers and Personnel for Higher Education Institutions in the Southern Border Provinces Development Area
Work Experiences	2007 – Now: Lecturer, Faculty of Management Science, Princess of Naradhiwas University 2001 – 2007: Tax Audit Officer, Revenue Department (Narathiwat Area Revenue office) 1998 – 2001: Lecturer, Narathiwat Technical College 1997 – 1998: Auditor Assistance, Deloitte Touche Tohmatsu Jaiyos