University of Strathclyde

Department of Accounting and Finance

The market reaction to convertible bond issues and the determinants of bookrunner selection

Ling Tai Hu

Submitted for the award of Ph.D.

2020

óThis thesis is the result of the authorôs original research. It has been composed by the author and has not been previously submitted for examination which has led to the award of a degree.ô

Signed: *Ling Tai Hu*

Date: 31/1/2020

The market reaction to convertible bond issues and the determinants of bookrunner selection

Abstract

This thesis examines three major aspects of international convertible bond offerings, particularly the market reaction and its determinants, the determinants of bookrunner selection in underwriting market and the outcomes of bookrunner selection. These issues are important for a corporate firm to design the best features of convertible bond underwriting contracts to enhance shareholdersô wealth and mitigate asymmetric information. These are relevant to the underwriters to understand whether informational advantage gained via reputation and geographic proximity could equip them if more competitive advantage in delivering better underwriting services. Furthermore, financial regulators are benefited from this study to better understand the underwriting market in convertible bond offerings.

My research focuses on an overall sample size of 11,350 convertible bond offerings worldwide issued between 1984 and 2015. I analyse the market reaction for different countries, industrial classifications and stated purpose of proceeds following the announcements of convertible bond offerings. I regress the stock price reactions against firm-specific, issue-specific, market-specific, country-specific and investor protection-specific factors. I examine the determinants of domestic, regional and reputable bookrunner selection by regressing them on firm-specific, issue-specific and market-specific. I also examine whether bookrunners with economies of scale advantage are more likely to gain underwriting contracts in convertible bonds. The bookrunner performance is analysed based on the stock price reactions, underwriting

fees and offering yields-at-issue. I further explore to investigate the outcome of bookrunner selection across different regions.

The findings of this study have important implications for various strands of academic literature. I contribute to reveal that the stock prices of convertible bond issuers react differently to different countries, industrial classifications and stated purpose of proceeds. My results from regression analysis show that the different market reactions are significantly associated by firm-specific, issue-specific, market-specific, country-specific and legal system factors. I also contribute to identify the underwriting preferences by corporate treasurers in hiring domestic, regional and reputable bookrunners. This helps underwriters to effectively gain underwriting contracts. This study contributes to two dominant literature on geographic proximate and reputable bookrunner selections in international convertible bond offerings. My findings provides important policy suggestions for issuers and investors to make a better evaluation on the outcomes of both geographical proximate and reputable bookrunners simultaneously in international convertible bond offerings.

Acknowledgements

Completing a PhD degree with three dominant essays in the area of finance is reasonably a challenging job that I have ever experienced. Honestly speaking, I do not have substantial analytical knowledge in finance research prior to my full-time admission of doing PhD in finance. However, I am grateful to my helpful supervisors, both Professor Andrew Marshall (Andy) and Reader Patrick McColgan who have been spending their precious time and energy passionately in providing guidance and advice in the past four years. For my parents always put hopes in me and offer me a talk whenever I feel bad in this journey. To my wife Charissa with her affectionate love and great understanding has helped me to put through my hardship phases in completing this thesis. My eldest daughter, Isabelle has always her best laughter and funny actions that really create a good medicine to my worries and tensions. My Scotland born wee baby, Ivanna, gives me another surprise with her cry that really could blanket my mind with a good sleep in a frosty night.

I would like to thank Associate Professor Dr Syed Nasirin Syed Zainol Abidin for approving my study leave and providing some useful guides of doing PhD. In addition, I extend my thankfulness to the Malaysia Ministry of Higher Education and Universiti Malaysia Sabah for providing study allowance. I am thankful for the constructive advice offered by Professor Krishna Paudyal, Professor Dick Davies, Professor Jonathan Fletcher, Professor Ranko Jelic and Professor Aziz Jaafar, Reader Chandra Thapa, Dr Leilei Tang, Dr Arthur Krebbes and Daniel Broby. I also thank to Lorna Carlaw for providing administrative support right from the beginning till the thesis submission. My thanks also extended to Donna McDougall and Martin Kemmitt for providing guides in using financial databases.

Additionally, I express my gratitude to my PhD friends including Dr Mei Liu, Dr Santosh Koirala, Dr Biwesh Neupane, Dr Chew Tze Cheng @ Nur Alesha Chew, Dr Sharinah Puasa, Shivani Tandon, Sulaiman Aldhawyan, Frimayudha Ardyaputra, Mehrin Rajwani, Syed Syakir Syed Omar, Mimi Liana Abu and Raja Norliana Raja Omar for offering inspirational talks and thoughtful discussions throughout my journey in completing PhD. I would like to thank Professor Syed Azizi Wafa Syed Khalid Wafa, Associate Professor Liew Khim Sen, Associate Professor Lim Kian Ping, Associate Professor Joe Henry Obit and Dr Fahmi Ghazali for their treasured advice in my earlier career establishment in academia.

Lastly, I extend my gratitude to Laurent and Jo, Rita and Allan, and Ann and Roy for providing a cozy shelter to my family and me whenever we have a short stay in Scotland and England. Thanks to all Shettlestonôs folks who have been providing continuous motivational support and blether.

ñA thousand miles journey starts from a single step.ò (Lao Tzu)
ñPerseverance will prevail.ò (Zhu Mu)
ñReading requires concentration; a word may be worth a fortune.ò
(Wisdom in Chinese Proverbs)

To my parents, Ling Sie Mie and Ha Kiing Ing,
with love and gratitude

Table of Contents

1 Introduction

This thesis examines three distinct but important areas of international convertible bond offerings, specifically the market reaction and its determinants, the determinants of bookrunner selection in underwriting market and the outcomes of bookrunner selection. More specifically, this study examines the outcomes of stock price reaction of issuers, underwriting fees and offering yields. These issues have important policy recommendations for corporate issuers to alleviate costly informational asymmetry by designing the crucial features of convertible bond underwriting contracts to enhance the wealth of shareholders. This can be done by selecting the correct type of bookrunner that could improve the pricing terms, analyst coverage and market making for convertible bond issuers in raising capital from potential investors (Corwin and Schultz, 2005). Additionally, hiring the appropriate type of bookrunners allows the issuer to gain certification from underwriting services (Butler, 2008; Fang, 2005; Lau and Yu, 2010).

Moreover, the analysis of determinants of choice of underwriter provides useful information to bookrunners on the key factors that might affect their ability to gain underwriting contracts from convertible bond issuers. Bookrunners may be concerned about whether the informational advantage gained through reputation and geographic proximity could allow them to be more competitive in delivering better share price performance following the convertible bond issuance than their counterparts. This is necessary for bookrunners to plan strategically in gaining a larger share of underwriting business and delivering stronger certification of issuing firm quality.

Furthermore, this study is instructive for financial regulators who monitor underwriting activities in the capital market. This study provides new information for them to understand the value of debt certification through the costs and benefits of bookrunners selection. Financial regulators could then enforce a better regulated underwriting market to safeguard the interests of both issuers and investors in the convertible market. In addition, this study offers financial regulators to examine that bookrunners do not exploit their market power to deliver poor bond performance and extract more rent on borrowers with lower ratings.

This study aims to examine a number of research questions. In Chapter 2, I address the market reaction and its determinants following the convertible bond offerings. First, I examine the stock price reactions of convertible bond issuers following the convertible bond announcements to different countries, regions, industrial classifications and purpose of offerings. Second, I address the determinants of this stock price reaction. Third, I examine the country-level factors that affect the stock price reactions of industrial issuers. Fourth, I explore whether industrial issuers obtain better market reaction in a country that provides better investor protection. Fifth, I examine the impact of bond specific factors on the stock price reactions of industrial issuers around the convertible bond announcements.

In Chapter 3, I address three central research questions on the bookrunner selection. First, this study examines what determines the geographic choice of underwriter for convertible bonds. Second, this study examines what determines the choice of appointing a reputable bookrunner for convertible bond offerings. Third, I examine whether banks with potential economies of scale advantage are more likely to be chosen to underwrite convertible bonds.

In Chapter 4, I address three research questions on bookrunner performance. First, I examine the outcomes of both geographic proximate bookrunner and reputable bookrunner selections on the stock price reactions, underwriting fees and offering yields for convertible bond issues. Second, I examine whether the outcomes of bookrunner selection differ across regions. Third, I examine the potential determinants of stock price reactions, underwriting fees and offering yields.

This study employs a worldwide sample of 11,350 convertible bond announcements from the Securities Data Corporation Platinumôs Global New Issues Database (hereafter SDC). To ensure basic information on the underwriting method, I consider deals that contain bookrunner descriptions. This sample allows this study to examine the market reaction, choices and outcomes of bookrunner selection in the context of international convertible bond offerings.

The remainder of this chapter is organised as follows. Section 1.1 describes the motivation of convertible bond financing. Section 1.2, 1.3 and 1.4 introduce the three empirical chapters, namely the stock market reaction and its determinants, bookrunner selection and bookrunner performance, respectively. For each chapter I describe the research topics, main results and contributions. Section 1.5 presents the structure of the thesis.

1.1 Why study the global convertible bond market?

The convertible bond is an important source of financing. The size of global convertible market has been increasing drastically and the total accumulated proceeds of convertible bond deals underwritten by bookrunners from 1984 to 2015 is approximately $2,412 billion.

The global convertible bond market consists of a wide range of potential issuing firms from different regions with different currency, capital market regulations and legal systems, making it an interesting topic to study. It allows me to examine the market reaction, determinants of bookrunner and performance of bookrunner selection. These findings are beneficial to both issuers and bookrunners to understand the market reaction behaviour of convertible bond offerings and evaluate the outcome of underwriting services delivered by bookrunners.

The regional heterogeneity in terms of size of economies is likely to have important implications on the convertible bond offerings. Convertible market is much more developed in the U.S. and Japan in comparison to other small countries. This will benefit more to issuers domiciled in the U.S. and Japan with a wide range of bookrunner selection. In this study, I provide further analysis by grouping the global convertible market into four main regions[1] namely, North America region, Japan region, European region and Asia Pacific region to capture the country level heterogeneity. This regional classification provides important information of market accessibility to investors as a developed country may not necessarily have a well-established convertible market.

1.2 Stock market reaction and its determinants to convertible bond offerings worldwide

In my first empirical chapter, I examine the market reaction and its potential determinants for a sample of convertible bond offering announcements. This is an

[1] I follow Morgan Stanley Capital International classifications

important matter to convertible bond issuers who faced costly asymmetric information in raising capital in convertible bond markets. The findings are expected to help issuers to identify the potential solutions to improve the wealth of shareholders.

The main theoretical frameworks on the predictions of the market reaction of convertible bond offerings I consider are the signalling model of Kim (1990), the backdoor equity model of Stein (1992), and the adverse selection model of Myers and Majluf (1984). These models yield a prediction that firms issuing convertible bonds tend to experience a negative market reaction. Smith (1986), Eckbo (1986) and Linn and Pinegar (1988) highlight that industrial firms are more vulnerable to asymmetric information in comparison to financial and utility firms. Moreover, McConnell and Muscarella (1985) and Eckbo (1986) explain that different stated purpose of debt offerings could convey different signals of announcement impact on the stock price reactions.

Numerous studies document that the issue-specific, firm-specific and market-specific factors could explain the observed different market reactions following the announcements of convertible bond offerings (Lewis et al., 2003; Duca et al., 2012; Dutordoir et al., 2016). Furthermore, I consider testing country level factors and legal system as a number of studies highlight that these variables could have impact on the stock price reactions

I test the stock price reactions by using standard event study methodology of Brown and Warner (1985) to estimate three-day cumulative average abnormal stock returns of the announcements of convertible bonds. I refer the significance tests of t-test, Patell (1976), Corrado (1989) rank test, and Cowan (1992) generalized sign test to examine if the significance impact of the abnormal returns. I use two-dimensional clustered standard errors regressions to examine the determinants of stock price reactions corresponding to the global convertible bond announcements based on wide range control variables of firm-specific, market-specific and bond-specific characteristics.

My results show that convertible bond issuers domiciled in the Asia and Australia & New Zealand regions experience significantly positive market reaction. While, U.S., Japanese, European, U.K. and Canadian convertible issuers face significant negative stock price reactions. Additionally, I find that stock prices of issuers react differently to different industrial classifications in different regions. This suggests that country level factors could be possible explanations for the documented different market reaction in different regions and different industrial classifications. This is in light with Kim and Weisbach (2008) and Henderson, Jegadeesh, and Weisbach (2006) arguments that different corporate governance policies in different regions could produce different impacts on the international capital structure.

My results on the market reaction of industrial issuers to different purposes of convertible offerings document that issuers from the U.S., Canada and Europe regions react negatively to the stated use of proceeds for capital expenditure. Convertible bond issuers domiciled in Asia experience significantly positive and issuers based in Japanese, Canadian, U.K. and U.S. regions react significantly negative to stated use of proceeds for debt refinancing. Convertible bond issuers in Australia and New Zealand react positively but firms in Western Europe, U.K., Canada and U.S. react negatively to the stated use of proceeds for general corporate purpose. This warrants my further analysis to explore whether firm-specific, market-specific, issue-specific, country-specific, investor protection-specific and bookrunner selection structure factors could explain the difference of investor reactions in responding to different stated purposes of offerings.

My regression results show that stock price reactions are negatively associated with firm size, financial leverage, stock run-up, financial slack and year-to-maturity and positively associated with market run-up. The negative coefficient of firm size suggests that smaller companies tend to benefit more from using convertible bonds as it translates the asymmetric information risk into a higher value of conversion option. The negative coefficients os financial leverage, stock run-up and financial slack may suggest that issuing firms are likely to have higher default risk and thereby suffer more negative stock price reaction. The negative coefficient of maturity on CAR suggests that bonds with shorter maturity are less risky as it provides lenders with more effective monitoring to deter asymmetric information. The positive impact of market run-up on CAR may suggest the presence of market expansions provide issuing firms with more profitable growth opportunities and lower level asymmetric information. Further regression analysis highlights that stock price reactions are determined differently depending on the industrial classification, region and country of the issuing firm, and over time.

My further analysis reveal that issuers tend to have more positive stock price reactions during periods of economic growth, high government bond yields, and in economies with higher stock market capitalization. This confirms prediction by Bayless and Chaplinsky (1996) that hot market allows issuers to secure better stock price reactions. I also find that convertible bond issuers suffer more negative stock price reactions in a country with short-selling ban, strong GDP and higher government debt. Moreover, I further show that convertible bond issuers respond more favourably in countries that provide investor protection to both creditors and shareholders.

My results shed light on the bond market access that firms with better credit rating and multiple tranches offerings tend to experience more favourable stock price reactions. In contrast, I find that stock prices react negatively to convertible bond with equity-like and non-callable features, private placements, and bonds with higher coupon rates. This result provides useful information to convertible bond issuers to design the best features of offering contracts that could alleviate negative stock price reactions and alleviate asymmetric information.

In summary, I find that the stock prices of convertible bond issuers react differently to different countries, different industrial classifications and different stated proceeds of bond offerings. My further analysis show that firm-specific, issue-specific, market-specific, country-specific and legal system factors have significant impact on the documented different stock price reactions following the announcements of convertible bond offerings.

The main contributions of this chapter is to address whether issuers in seven main regions experience identical magnitude of negative stock price reactions. Christensen et al. (1996), Kang et al. (1995), Kang and Stulz (1996) and Dutordoir et al. (2016) are among other studies compare the stock price reactions surrounding convertible bond announcements between Japanese and U.S. firms. Ammann, Fehr, and Seiz (2006) document the comparisons of the announcement effects between German firms and Swiss firms. However, there are no comprehensive studies in addressing the stock market reaction in the main economic regions worldwide. Kim and Weisbach (2008) and Henderson, Jegadeesh, and Weisbach (2006) point out the need to explore whether different corporate governance policies in different regions affect the motivations in new securities issuance.

Second, this chapter contributes to provide a more comprehensive investigation whether market reaction following announcement of convertible bonds reacts differently between different industrial groups and different stated purpose of offerings in seven main regions. Li, Liu, and Siganos (2016) and Fenech, Skully, and Xuguang (2014) are two studies I am aware who compare the impact of convertible bond announcements between financial firms and non-financial firms in U.S. and Australia respectively. Unlike non-financial firms, financial firms are usually highly regulated and scrutinised under stringent regulations and could not take advantage of differential information between the managers and investors. Thus, financial firms are less likely to experience more negative share price reaction in comparison to industrial issuers. Consistently, Li, Liu, and Siganos (2016) and Fenech, Skully, and Xuguang (2014) find that non-financial firms react more negative to the announcements of convertible bond offerings than that of financial firms.

Third, I contribute to literature by providing more comprehensive market reaction to the different purposes of convertible bond offerings in seven main regions. To date, Dutordoir et al. (2016) on the Japan and U.S. and Abhyankar and Dunning (1999) on the U.K. are the only two studies document stock price reactions to different stated uses of proceeds. I further contribute to provide evidence that firms-specific characteristics, market-specific characteristics, country-specific characteristics, legal system characteristics and bond design characteristics are the significant explanations to the different stock price reactions between countries, industrial classifications and stated purpose of offerings.

1.3 The determinants of geographic proximate and reputable bookrunner selection

My second empirical chapter examines the determinants of bookrunner selection in international convertible bond underwriting. This is an important matter for corporate issuers as Diamond (1984) points out that a financial intermediary is capable of providing delegated monitoring on the private information to effectively alleviate moral hazard problems between borrowers and lenders. Moreover, Corwin and Schultz (2005) highlights that bookrunner selection is important for issuers to provide information production, certification, analyst coverage and market making in the capital raising process.

The location of a bookrunner is one of the top choices among corporate issuers in deciding a bookrunner selection. In particular, Butler (2008) and Lau and Yu (2010) argue that local investment banks with geographical proximity advantage tend to have soft information advantage acquired via lending relationships and could provide more competitive underwriting services for issuers in bond offerings than nonlocal underwriters. Rajan, Seru, and Vig (2010; 2015) argue that the costs of ignoring soft information is great, and cite the example of statistical default models that rely solely on hard information having contributed to the subprime mortgage crisis in 2007. Lau and Yu (2010) point out that local banks may also be weaker in their placement capacity for bond offerings and this could offset their advantage in soft information production in underwriting. According to Liberti and Petersen,

(2017) that soft information is a qualitative technique used by lenders to collect information that includes opinions, ideas, rumors, economic projections, future plans of management and market commentary. While, hard information is a quantitative approach used by lenders to collect, store and transmit the information electronically.

Reputation of bookrunners is defined as the underwriters have gained a larger market share in the underwriting market through extensive and experience in providing good quality underwriting services to issuing firms. The reputation of a bookrunner is another choice of bookrunner selection in providing underwriting services. Booth and Smith (1986), Carter and Manaster (1990) and Chemmanur and Fulghieri (1994) suggest that certification provided by reputable investment banks serves as a bonding mechanism to alleviate the asymmetric information problems between shareholders and the investors in capital raising. Additionally, numerous studies suggest that reputable banks have better placement ability in handling complex security design, particularly relating to issue size, bond maturity and call option provisions of corporate bond offerings (Carbó-Valverde et al., 2017; Andres et al., 2014; Corwin and Schultz, 2005; Fang, 2005). Nonetheless, Gopalan, Nanda, and Yerramilli (2011) and Andres, Betzer, and Limbach (2014) argue that dominant lead underwriters could use their market power to exploit corporate issuers with more underwriting fees and provide poor underwriting performance because they are less susceptible to reputation damage even when their borrowers declare bankruptcies.

I test the determinants of domestic, regional and reputable bookrunner selection using probit regression analysis. My results on the determinants of domestic and regional bookrunner selection reveal that domestic and regional bookunners are more likely to underwrite publicly offered convertible bonds and invite more members of bookrunners to form the bookrunner syndicate in underwriting. I also find that domestic and regional bookrunners more likely to underwrite longer maturity and risky convertible bonds. This confirms predictions by Butler (2008) that local banks are more likely to manage complex bond offerings due to their soft informational advantage.

My findings also reveal that reputable bookrunner are more likely to manage convertible bond offerings for firms that are larger, have more financial slack, and higher stock run-up and lower stock return volatility. This is in line with the arguments of Fang (2005) that reputable banks are more likely to underwrite larger and less risky issuers as reputable underwriters seek to maintain their reputation in underwriting markets. In addition, my findings show that reputable bookrunners underwrite longer maturity and callable bonds. This evidence collaborates the argument of the capability of reputable underwriters in handling call placement complexity in debt offerings (Carbó-Valverde et al., 2017; Andres et al., 2014; Fang, 2005). However, I find that reputable underwriters tend to place convertible bond with lower or no credit rating even though they are more likely to underwrite less risky firm. This suggests that reputable underwriters could use their market-power resulting from bank consolidation to gain underwriting contracts from issuers by issuing risky convertible bonds. I find that reputable bookrunners are more likely to form a larger bookrunner syndicate with other underwriters in bookbuilding.

My testing on the economies of scale reveals that it has a significant impact of on the underwriter selection. The economies of scale means that the bookrunners have served the issuer in the past five years in M&A, equity and bond issuance prior to the convertible bond issue. Specifically, I find that domestic bookrunner and reputable bookrunners with economies of scale are more likely to gain convertible bond contracts from corporate firms as a result of their extensive distributional networks and superior private informational advantage in underwriting (Fang (2005). In contrast, I find that the economies of scale has no significant impact on the regional bookrunner selection and this suggests economies of scale does not benefit regional underwriters to attain underwriting deals in convertible bonds.

In this chapter, I make a number of important contributions to the body of corporate finance literature. First, I contribute by investigating the determinants of two main different financial intermediary literature on the geographic proximity and reputable bookrunner selections on global convertible bond offerings. In the literature, these two areas are addressed separately on either reputation (Carbó-Valverde et al., 2017; Andres et al., 2014; Fang, 2005) or geographic proximity (Lau and Yu, 2010; Butler, 2008).

Second, this study contributes to the literature on investment bank reputation in global and country-level league table constructions. I also provide detailed geographic distribution of domestic, regional and reputable bookrunner selection in the context of 30 countries in convertible bond offerings. This is important because a non-top globally ranked bank does not mean it is not strong in its home market or a specific niche in underwriting convertible bonds. It also allows bookrunners to identify the underwriting preferences among convertible bond issuers in hiring domestic, regional and reputable bookrunners and react effectively to gain underwriting contracts.

1.4 The outcomes of geographic proximate and reputable bookrunner selection

My third empirical chapter addresses the outcomes of underwriting by geographically proximate and reputable bookrunners worldwide for convertible bond deals. I examine convertible bond issuer announcement CARs, underwriting fees and offering yields as the key outcomes to evaluate bookrunner performance in bookbuilding.

Many studies evaluate the outcomes of underwriter selection based on the fees and yields but ignore the market reaction (Butler, 2008; Fang, 2005; Lau & Yu, 2010; McCahery & Schwienbacher, 2010; Lou & Vasvari, 2013). It could be because investors only care about the cost of debt particularly yields and fees are the best mechanism in straight bond offers. However, convertible bond is a hybrid securities that contain both debt and equity elements. Thus, it would be interesting to examine the stock price response due the equity-like features in convertible bond offerings. To my knowledge no study has examined the price and quality of convertible bond deals underwritten by geographic proximate and reputable bookrunner. This is a worthwhile area of study as the outcomes of bookrunner selection may differ between regions in considering of different corporate governance practices. The condition of the convertible market, methods and stated purpose of convertible bond offerings, sources of available bookrunners, legal environment and country-specific factors could be the possible explanations to why bookrunners may perform differently.

The reputation of a bookrunner provides important certification that could alleviate potential asymmetric information for corporate firms who require capital from the potential investors. According to Fang (2005), reputable banks could provide higher quality underwriting services in delivering superior bond pricing for their clients but for higher fees. Alternatively, corporate firms could consider using local banks as they have soft information advantages in providing more comparative advantage to obtain superior quality of underwriting benefits with lower underwriting fees and bond yields (Butler, 2008; Lau and Yu, 2010).

I test the bookrunner performance by using cross-sectional regression analysis and switching regression models to account for the self-selection bias of underwriter choice to examine the outcome of bookrunner selection on the stock price reactions, underwriting fees and offering yields. I also conduct what-if analysis to examine the costs and benefits of hiring domestic, regional and reputable bookrunners for the deals bookmanaged by their non-domestic, non-regional and non-reputable bookrunners counterparts. These are similar econometrics methods used by Fang (2005) and Golubov, Petmezas, and Travlos (2012) in drawing inferences on the underwriting outcome by reputable underwriters and financial advisors. For robustness purposes, I use a double selection model to examine the impact of jointly-determined bookrunner selection.

My results show that domestic bookrunners obtain a more positive market reaction and lower fees while issues managed by regional bookrunners are associated with a more positive stock price reaction for higher yields. I find that reputable bookrunners are associated with lower fees, lower yields and positive market reaction. This contradicts Fang (2005) on premium fees for higher pricing of lower yields in nonconvertible bond offerings. A plausible explanation could be due to different type of debt instruments and global sample size I explore in this study.

Lower fees may be the best marketing strategy pursued by reputable underwriters to obtain underwriting contracts from the potential convertible bond issuers as they are mostly risky and unrated. Additionally, Andres et al. (2014) offer an explanation that the bank consolidation provides a more competitive environment in underwriting forcing reputable underwriters to offer lower fees in getting the bookbuilding contracts from clients.

My testing reveal that price and quality of the underwriting services by domestic, regional and reputable bookrunners differ dramatically in different regions. I find that domestic and regional bookrunners in the North American region obtain negative stock price reaction with higher yields. Reputable bookrunners in the same region offer fees and yields reduction but deliver negative price reaction outcome. Clearly, reputable bookrunners offer better quality of underwriting outcome. The negative stock price could be due to the short-selling activities by arbitrageurs and hedge fund managers as Choi et al. (2009) and De Jong et al., (2012) argue that it may produce additional downward pressure to the movement of stock prices following the convertible offerings. My further regression results reveal that Japanese domestic and regional bookrunners deliver convertible bond issuers with higher fees and higher yields. This may suggest the evidence of market power exploitation by bookrunners in Japan on the issuing firms to obtain debt value certification. In contrast, the reputable bookrunners offer lower underwriting fees to their clients.

The results from regressions of the outcome of bookrunner selection in the European region show that domestic bookrunners obtain positive stock price reaction, lower fees and lower yields. I document that regional bookrunners deliver positive stock price reaction with lower yields. However, reputable bookrunners deliver negative stock price reaction. This suggests geographical proximate bookrunners provides higher quality of underwriting than reputable bookrunners. Additionally, I find that domestic and regional bookrunners in Asia pacific region obtain positive stock price reaction for their clients. On the other hand, reputable bookrunners deliver negative stock price reaction with lower fees. This suggests that domestic and regional bookrunners with local information advantages provide better underwriting outcome.

Taken together, this study shows that the outcome of bookrunner selection differ depending on the issuing firm region. I further highlight that the condition of the convertible market, methods and stated purpose of convertible bond offerings, sources of available bookrunners, legal environment and country-specific factors could be the possible explanations to why bookrunners perform differently in different regions. First, I point out that condition of the convertible market may produce different underwriting outcome. This is because bookrunners in North America and Japan have gained better reputation through extensive underwriting activities started in early 1980s. However, bookrunners in European and Asian Pacific regions may suffer lack of placement experience and capacity as the convertible market starts to flourish in late 1990s. Second, the different underwriting outcome could also be due to different methods of issue and stated purpose of convertible bond offerings. Dutordoir et al. (2016) and Abhyankar and Dunning (1999) find that different methods and stated purpose of convertible bond offerings produce different impact on the market reaction. Third, I find that convertible bond issuers in U.S. and Japan regions in comparison to other regions have better access to a wide range of active bookrunners in providing underwriting services and this may produce different outcomes of bookrunner selection. Fourth, the legal system of a country could have impact on the outcome of underwriting by bookrunners. Lau and Yu (2010) find that issuers in a legal system providing investor protection suffer weaker cost reduction effect. Fifth, I also highlight that the outcome of bookrunner selection may be affected by country-specific factors. For example, I find that the negative stock price reaction outcome delivered by bookrunners in North America region could be affected by the short-selling activities.

This study contributes to two different strands of literature on geographic proximate and reputable bookrunners selection in international convertible bond offerings. The findings are important for issuers and investors to make a better evaluation on the outcomes of both geographical proximate and reputable bookrunners simultaneously in international convertible bond offerings. This is important for corporate treasurers to know whether bookrunners deliver positive stock price reaction with lower underwriting fees and lower offering yields or otherwise. It is mainly because corporate issuers need to look for a financial intermediary that can offer highest value of debt certification at lower underwriting fees and lower yields at-issue. Investors are interested to know whether the outcomes of bookrunner selection could be a signal for them to invest in a deal underwritten by most rewarding bookrunners in searching for profitable investment.

In addition, this study contributes by using double selection models to examine the joint impacts of bookrunner selection simultaneously. This is important to obtain consistent and unbiased estimates of the parameters on the outcome of jointly determined bookrunner selection. This model appears in Terrell (1993) on development economics, Brown (2011) on health economics and Ma et al. (2018) on agricultural economics. However, this double selectivity models have not appeared in the bookrunner selection literature.

Lastly, this study contributes to examine whether domestic, regional and reputable bookrunners self-select their clients. I contribute to perform what-if analysis based on switching regressions to examine the impact of proximate and reputable bank selection on the CARs, fees and yields if they were switched to underwrite deals underwritten by non-proximate and non-reputable banks counterparts. While Fang (2005) and Golubov, Petmezas, and Travlos (2012) have used this method in drawing reliable inferences on the price and quality of U.S. underwriters, no study has used this approach to examine and compare the bookrunner performance between regions. This is important for issuers to evaluate the costs and benefits of the underwriting services delivered by domestic, regional and reputable bookrunners across different regions.

1.5 Structure of the Thesis

The remainder of the thesis is organised as follows. In Chapter 2, I present my empirical analysis on the stock market reaction and its determinants to convertible bond offerings. Chapter 3 presents my findings on the determinants of geographic proximate and reputable bookrunner selection. In Chapter 4, I present results on the outcomes of geographic proximate and reputable boookrunner selection. Chapter 5 concludes.

2 The stock market reaction and its determinants to convertible bond offerings worldwide

2.1 Introduction

According to adverse selection model of Myers and Majluf (1984), signalling model of Kim (1990) and backdoor equity model of Stein (1992) and that firms issuing convertible bonds tend to experience negative market reaction[2]. In particular, Christensen et al. (1996), Kang et al. (1995), Kang and Stulz (1996) and Dutordoir et al. (2016) find that firms domiciled in Japan experience less negative stock price reactions as compared firms in U.S. or other developed countries. In addition, Ammann, Fehr, and Seiz (2006) point out that German firms exhibit more negative reaction than Swiss firms. These studies suggest that the difference pattern in market reaction could be due to institutional reasons[3].

Linn and Pinegar (1988) and Eckbo and Masulis (1992) highlight that utilities, industrials and financials firms respond differently to the announcements of

---

[2] The negative market reaction could be due to the negative information reflected on the decision made by managers with superior information have higher tendency to issue securities if the equity of firm is overvalued and more likely to forego positive NPV investments if equity of firm is undervalued by the market (Myers and Majluf, 1984). Kim (1990) develops a signalling model that convertible debt allows firms to adjust the conversion ratio depending on the expected future earnings of firms to better improve the negative abnormal common stock return. The model suggests that the lower the expected future earnings, the higher the conversion ratio of a convertible debt issue. Stein (1992) argues that the call provision of convertible bond financing entails less adverse price impact as it stands between negative informational associated with equity financing and costly financial distress related with debt financing.

[3] The difference in stock price reactions of convertible bond issuers between American and Japanese could be due to keiretsu corporate groups, shareholdersô wealth maximization goal by Japanese managers and insurance policy by Japanese banks to insure the issuing process and information leakage due to a lengthier issuing process prior to the actual announcement date and capital expenditure purpose issuance (Christensen et al., 1996; Kang et al., 1995; Kang and Stulz, 1996; Dutordoir et al., 2016). Ammann, Fehr, and Seiz (2006) argue that lower free-float rate, more cross-shareholdings and more strategic motives in stock positions could be the possible institutional reasons why German firms record stronger negative stock price reactions than Swiss corporate firms.

securities offerings. In particular, they point out that industrial firms are prone to information asymmetry than financial and utilities firms which subject to more strict regulatory conditions. Consistently, Li, Liu, and Siganos (2016) and Fenech, Skully, and Xuguang (2014) show that non-financial firms in respective U.S. and Australia are associated with more negative stock price reactions around convertible bond announcements than financial firms.

A seminal paper by McConnell and Muscarella (1985) who argue that an increase in capital expenditure announcement by firm conveys a positive market value signal. In contrast, Eckbo (1986) finds that capital expenditure driven convertible debt offerings produce more negative valuation effect than debt refinancing purpose and argues that it could be due to news of investment projects reaches the market earlier than the news of the financing decision. Dutordoir et al. (2016) and Abhyankar and Dunning (1999) are the only two related convertible studies document that issuers experience more favourable stock price reactions when issuers describe stated uses of proceeds is to finance capital expenditure than other purposes.

A few studies suggest that the stock price reaction relative to convertible bond announcements could be influenced by issue-specific, firm-specific and market-specific factors (Lewis, Rogalski, and Seward, 2003; Duca et al., 2012; Dutordoir et al., 2016). These studies document that financial slack, stock return run-up, stock return volatility, market return volatility and firm size have significant impact on the announcement returns of convertible debt issuers. However, they find that issue-specific factors have insignificant impact on the announcement returns. In addition, Duca et al. (2012) find that convertible bond issuers in U.S. experience more negative announcement returns after 2000s than that of between 1980s and 1990s due to short-selling activities and post Lehman crisis.

Furthermore, a number of studies suggest that country level factors could also influence the stock price reactions of convertible bond issuers. In particular, short-sale bans (De Jong et al., 2012), economic growth (Dutordoir and Gucht, 2007) and stock market capitalization (De Jong et al., 2012) are found to have positive impact on the stock price reactions of convertible issuers. Badoer and James (2016) argue that the supply of government debt may influence the overall performance of corporate borrowers. Moreover, La Porta et al. (1997) and La Porta et al. (2000) show that countries with better investor protection and effective of enforcement tend to have larger credit markets and more valuable stock markets.

It is worth to point out that some event studies corresponding to convertible bond offerings find that speculative grade (Lewis, Rogalski, and Seward, 1999), high conversion premium (Duca et al., 2012), low DELTA (De Jong et al., 2012; Ammann, Fehr, and Seiz, 2006), call provision (Stein, 1992) and private placements (Fields and Mais, 1991) are associated with less negative stock price reactions. In addition, Godlewski (2014) shows that multiple tranches bank loan offerings have positive impact on stock market reaction. Moreover, Yasuda (2005) suggests that first-time issuers and issuers with high yield-to-maturity are more likely to face more cost of financing. Also, Dutordoir et al. (2016) argue that different stated use of proceeds of convertible bond offerings may produce different stock price reactions impact.

This study aims to examine a number of research questions. First, do stock prices of convertible bond issuers following the convertible bond announcements react differently to different country, region, industrial classification and purpose of offerings? Second, what are the potential determinants of stock price reactions in different regions, different industrial classifications and different time periods? Third, do country-level factors explain the stock price reactions of industrial issuers? Fourth, does industrial issuers obtain enjoy more favourable market reaction in country provide better investor protection? Fifth, can the bond design factors influence the stock price reactions of industrial issuers around convertible bond announcements?

My sample period spans January 1984 to December 2015 for convertible bond announcmeents in 30 countries. The sample period and sample size are due to data availability after applying several filters for considering a sample with a country more than 10 convertible deals, bookrunner prescriptions, SEDOL matching with Worldscope and deals with complete stock return data in the estimation window. The final sample consists of 11,350 deals in total proceed of USD2.13 trillion.

Unlike previous studies, I provide more comprehensive comparison of stock price reactions relative to convertible bond announcements between seven main dominant regions. The CAR analysis highlights that convertible bond issuers domiciled in Asia and Australia & New Zealand regions experience significantly positive three-day CAR of 0.25% and 0.41%, respectively. By contrast, Japanese, European, U.K. and Canadian convertible issuers face significant negative market reactions of less than 1%, but firms based in U.S. record the most negative stock price reactions at ī 3.09%. Moreover, I find that firms belong to Anglo-Saxon group face significantly negative stock price movements in comparison to corporate firms in East-Asian region react insignificant impact of convertible bond offerings.

The detailed CAR analysis between industrial classifications reveals that stock prices react differently across three main industrial categories and seven regions. In particular, I find that industrial issuers in Western Europe, U.K., U.S. and Anglo-Saxon regions suffer more negative market reaction, while industrial issuers domiciled in Asia and Australia and New Zealand experience positive stock price reactions following the announcements of convertible bond. Another interesting pattern is that financial and utility firms based in Japan record similar impact of negative stock price reactions. However, stock prices of utility issuers domiciled in Canada tend to react more negatively in response to convertible bond offerings. Financial issuers in East-Asian region report significantly negative stock price reactions.

Next, I document that industrial issuers react differently to different purposes of convertible offerings. In general, capital expenditure driven offerings by issuers face less negative stock price reactions, while general corporate purpose records a substantial negative impact from convertible bond announcements. However, issuers from the U.S., Canada and Europe react negatively to capital expenditure. Convertible bond issuers domiciled in Asia experience significantly positive and issuers based in Japanese, Canadian, U.K. and U.S. react significantly negative to debt refinancing. Convertible bond issuers in Australia and New Zealand react positively but firms in Western Europe, U.K., Canada and U.S. react negatively to general corporate purpose. Finally, I find that firms in Anglo-Saxon region react significantly more negative to general corporate purpose while, firms in East-Asian region react favourable to the similar purpose of convertible bond offerings.

The selection of potential firm-specific, market-specific and bond-specific variables for the baseline regression are inspired by Dutordoir et al. (2016), Duca et al. (2012) and Lewis, Rogalski, and Seward (2003). I employ two-dimensional clustered standard errors regression by firm and year Petersen (2009) to analyse the potential determinants of stock price reactions between the regions. Empirical results show that stock price reactions are negatively associated with firm size, financial leverage, stock run-up, financial slack and year-to-maturity and positively associated with market run-up and market return volatility. Further regression analysis highlights that stock price reactions are determined differently depending on the industrial classification, the region and country of the issuing firm, and over time. This analysis provides several meaningful knowledge for convertible bond issuers in these regions to explicitly identify the potential benefits of the determining factors that favour convertible bond offerings to better improve shareholdersô wealth effect.

I also examine whether the country level factors matter for the stock price reactions of industrial convertible bond issuers. This idea is drawn on the negative impact of short selling (De Jong et al., 2012) and favourable economic growth (Dutordoir and Gucht, 2007) on the stockholder reaction to convertible bond issuances. I document that convertible bond issuers tend to have more positive stock price reactions during periods of economic growth, high government bond yields, and in economies with higher stock market capitalization. Oppositely, I find that convertible bond issuers suffer more negative stock price reactions following the introduction of short-selling ban, in larger economies, and in economies with larger government debt. Moreover, I further show that convertible bond issuers respond more favourably in countries that provide better investor protection for both creditors and shareholders. However, I show counterintuitive negative impact of the effectiveness of legal enforcement on the stock price reactions and this suggests that convertibles issuers tend to suffer more in country with a strong legal enforcement.

Focusing on bond market access for the issuing firm, I find that firms with better credit rating and firms issuing in multiple tranches tend to experience more favourable stock price reactions in issuing convertible bonds. In contrast, I document that issuers react negatively to convertible bond with equity-like and non-callable features, private placements, and bonds with higher coupon rates. I find that stock price reactions are not affected by the conversion premium, whether it is the issuersô first issue, year-to-call protection, gross spread, yield-to-maturity and purposes of issuance. This result provides further information to convertible bond issuers to carefully design the best features of convertible bond offerings that can enhance wealth of shareholders and alleviate asymmetric information.

Overall, I find that different country, industrial classifications and stated proceeds of bond offerings produce different stock price reactions following the announcements of convertible bond offerings. My further regression analysis show that the different market reaction are significantly associated by firm-specific, issue-specific, market-specific, country-specific and legal system factors.

In this chapter, I have made a number of important contributions to the corporate finance literature. First, I examine if convertible bond issuers in dominant seven regions experience similar negative market reaction following the announcements of convertible bond offerings. To my knowledge, a few studies compare the market reaction between Japanese and U.S. convertible market (Christensen et al., 1996; Kang et al., 1995; Kang and Stulz, 1996; and Dutordoir et al., 2016) and German and Swiss firms (Ammann, Fehr, and Seiz, 2006). Clearly, no study has addressed the comparison of market reaction across other dominant regions as suggested by Kim and Weisbach (2008) and Henderson, Jegadeesh, and Weisbach (2006) to explore whether different corporate governance policies in different regions could affect the securities offerings.

Second, I extend Li, Liu, and Siganos (2016) and Fenech, Skully, and Xuguang (2014) studies to examine whether stock prices of convertible issuers react differently to different industrial classifications and different purpose of offerings. Both studies have made a comparison on the impact of the announcements of convertible bonds between financial and non-financial issuers in respective U.S. and Australia convertible market. However, no study has addressed the announcement impacts to the issuers in other dominant regions.

Third, I contribute to provide more inclusive analysis on the market reaction with respect to different purposes including capital expenditure, debt refinancing, acquisition, working capital and general purposes of convertible bond offerings in seven main regions. Thus far, Dutordoir et al. (2016) on the Japan and U.S. and Abhyankar and Dunning (1999) on the U.K. are the only studies have shown that the stock prices of issuing firms surrounding the announcements of convertible bond react differently to different stated uses of proceeds. I contribute to show that the difference stock price reactions in responding to different country, industrial classification and stated purpose of proceeds are significantly determined by firms-specific characteristics, market-specific characteristics, country-specific characteristics, legal system characteristics and bond design characteristics.

The remainder of this chapter is organized as follows. Section 2 describes the review of market reaction studies of convertible bond issuances. Section 3 describes the review of determinants of stock price reactions to announcements of convertible bond offerings. Section 4 describes the corporate bond issue process. Section 5 presents data sources and sample construction. Section 6 specifies the event studies methods and significant tests. Section 7 presents and discusses the estimation results. Section 8 concludes.

2.2 Review of market reaction studies of convertible bond issuances

The asymmetric information rationale of Kim (1990) and Stein (1992) and the adverse selection rationale of Myers and Majluf (1984) suggest that the announcement effect of convertible bond on stock price should be in-between those of straight bond and common stock announcements. A survey paper on security offerings by Eckbo, Masulis, and Norli (2007) confirms prior research that is consistent with these predictions. More specifically, the announcement return of ī 1.82% for convertible bond offerings is significantly negative and is in between significant ī 2.22% of seasoned equity offerings and insignificant ī 0.22% of straight debt offerings. Using meta-analysis for 35 event studies, Rahim, Goodacre, and Veld (2014) find that announcement return of convertible bond issuance is ī 1.14% on average.

In Table 2.1, I present a summary of 40 studies on the market reaction to convertible bond announcements. 35 studies are reported focusing on single country and the remaining 5 papers are cross-country studies. Dutordoir, Li, Liu, and Verwijmeren (2016) appears nine times as they report CAARs for 9 countries individually but the CAARs for the overall is not provided. Most of the empirical studies are concentrated on U.S., Japan, and Australia and relatively few studies for other countries.

More specifically, Dann and Mikkelson (1984), Eckbo (1986) and Mikkelson and Partch (1986) are the pioneering studies find that U.S. issuers generally experience negative abnormal common stock return ranges between ī 1.90 to ī 2.31% following the convertible bond offerings via firm commitment. However, the announcement effect of convertible bond under rights offerings is rather smaller and insignificant negative (See Dann and Mikkelson, 1984; Eckbo, 1986). In contrast, Fields and Mais (1991) find a significant positive abnormal return of 1.80% for privately placed convertible debt securities. Consistently, the subsequent studies document a significant negative stock price reactions following the announcements of convertible bonds (see Marquardt and Wiedman, 2005; Duca et al., 2012; Li et al., 2016; Dutordoir et al., 2016).

Nonetheless, Kang et al. (1995) and Christensen et al. (1996) find that Japanese convertible bond issuers experience insignificant negative market reaction, while Kang and Stulz (1996) find positive and significant market reaction. Cheng et al. (2005) and Dutordoir et al. (2016) are two further studies find that Japanese issuers experience negative stock price reactions. A number of studies focusing on Australian convertible bond market suggest that issuers experience either significant or insignificant negative stock price reactions (see Magennis et al., 1998; Suchard, 2007; Fenech et al., 2014; Dutordoir et al., 2016). In the case of Canada, Loncarski et al. (2008) and Dutordoir et al. (2016) document significant and negative stock price reactions at ī 0.54% and ī 2.25%, respectively.

In addition, Abhyankar and Dunning (1999) find that stock price of issuers react differently to diffferent purpose of convertible bond offerings. By contrast, Dutordoir et al. (2016) find insignificant negative valuation effect of the UK announcement of convertible bonds. A few studies focusing on European sample report consistently negative but different level of market reactions for issuers based in France, Germany and Switzerland (see Burlacu, 2000; Ammann et., 2006; Dutordoir et al., 2016).

In sharp contrast, Chang et al. (2004) report a positive and significant abnormal return of +2.02% for Taiwanese stock market following convertible bond announcements. While Rahim (2012) and Wang et al. (2014) document significantly negative stock price reactions experienced by issuers domiciled in Malaysia and China.

I identify four empirical studies that report CAARs to convertible bond announcements in a cross-country setting (Dutordoir and Gucht, 2007; De Jong et al., 2012; Liao, Mehdian, and Rezvanian, 2016; Ammann, Blickle, and Ehmann, 2017). Using a convertible debt sample consists of 188 convertibles issued by 154 Western European industrial companies between January 1990 and December 2002, Dutordoir and Gucht (2007) reports a negative and significant abnormal stock return of ī 1.35% across thirteen Western European countriesô convertible debt announcements. For a sample of 4,148 convertibles issued by companies listed in 35 countries over 1990ï 2009, De Jong et al. (2012) find issuing companies experience significantly negative abnormal stock return of ī 0.66%.

The review from previous research show that issuing firms in different countries experience different magnitudes and directions of stock price reactions surrounding the announcements of convertible bond offerings. To my knowledge, there is no study offering a better view of the market reaction of convertible bond offerings worldwide. Therefore, I test a hypothesis whether convertible bond issuers in different regions and regions experience different magnitudes and directions of stock price reactions following the annoucements of convertible bonds.

2.3 Review of determinants of stock price reaction to the announcements of convertible bond offerings

In this section, I present an overview of the detailed determinants of the stock price reaction to convertible debt offerings as identified by previous event studies. The determinants of market reaction include firm size, issue size, stock run-up stock return volatility, market run-up, market return volatility, leverage, financial slack, maturity, market-to-book, DELTA/conversion premium, credit quality, and others.

Firm size is one the most popular control variable used in determining the market reaction upon the announcements of convertible bonds. According to Chae (2005) and Elliott, Morse, and Richardson (1984) that larger firms are followed by more financial analysts who are likely to have clearer view of value and risk. However, Brennan and Schwartz (1988) suggest that smaller companies gain more from convertible financing. De Jong et al. (2012) confirm this argument that stockholders from smaller companies highly value convertible bond as the best alternative financing tool. In particular, a number of related event studies on convertible bond offerings document positive (De Jong et al.,2012; Marquardt and Wiedman, 2005), negative (Dutordoir et al., 2016; Li, Liu, and Siganos, 2016) and no (Duca et al., 2012; Lewis, Rogalski, and Seward, 2003; Mikkelson and Partch,

1986) relation between firm size and stock price reactions. I therefore have no clear expectations on the impact of the firm size as it could have positive and negative impacts on the stock price reactions.

A number of event studies examine issue size or relative issue size measured by dividing the total offering proceeds over total assets as a control variable. At one hand, Fields and Mais (1991) argue that a larger relative issue size of convertible bond offerings indicates a good information of issuersô management ability to the market that conveys positive indication on the firm value. On the other hand, De Jong et al. (2012) based on Krasker (1986) argument suggest that a larger size of convertible bond offerings is associated with more external financing costs that may induce more negative stock price reactions. In particular, De Jong et al. (2012) and Fields and Mais (1991) document positive impact, Li, Liu, and Siganos (2016) and Lewis, Rogalski, and Seward (1999) find negative impact and Duca et al. (2012) and Kang and Stulz (1996) show insignificant impact of issue size on stock price reactions surrounding convertible bond offerings. I thus expect that issue size may have positive or negative impact on the stock price reactions.

Stock run-up is another important determinant of the market reaction of corporate firms issuing convertible bonds. Viswanath (1993) argues that firm with higher stock run-up may indicate the existence of future positive net present value projects and lead to favourable market reaction relative to the announcements of equity offering. However, Lewis, Rogalski, and Seward (2003) suggest that convertible issuers with substantial increase in pre-issue stock run-up are more likely to face higher equity related financing costs. In addition, Dutordoir and Gucht (2007) point out that that a firm with higher pre-issue stock run-up is an indication of experiencing stock overvaluation when issuing a convertible bond. In particular, related convertibles studies find that stock run-up is positively (Dutordoir et al., 2016; Lewis, Rogalski, and Seward, 2003) negatively (Li, Liu, and Siganos, 2016; Dutordoir and Gucht, 2007) and insignificantly (Duca et al., 2012; Lewis, Rogalski, and Seward, 1999) associated with stock price reactions to convertible bond issuance. I therefore expect a negative impact of stock run-up on stock price reactions to convertible debt announcements.

It has become a common practice of event studies to include stock volatility in examining the stock price reaction in response to convertible bond offerings. Brennan and Schwartz (1988) suggest that small and high risk companies tend to benefit more from using convertible financing as their firm value is unaffected to the company risk. Consistently, Lewis, Rogalski, and Seward (1999) explain that a firm with high stock return volatility prefers to choose convertible debt because it resolves asymmetric information problems. However, Chang, Chen, and Liu (2004) point out that firms with high stock return volatility are more likely face cash flows uncertainty and larger costs of financial distress. More specifically, a number of empirical studies focusing on the convertible bond offerings suggest that stock volatility may have positive, negative or no explanatory power on the stock price reactions (see Dutordoir et al., 2016; Marquardt and Wiedman, 2005; Lewis, Rogalski, and Seward, 1999). Therefore, the effect of stock return volatility on the stock price reations of convertible bond issuer is essentially an empirical question.

According to Choe, Masulis, and Nanda (1993) that market expansions are associated with more profitable growth opportunities and lower the adverse selection costs. Consistently, Li, Liu, and Siganos (2016) and Ammann, Fehr, and Seiz (2006) document that market run-up has significant and positive impact on the stock price reactions of convertible bond issuers. On the other hand, the results presented by Dutordoir et al. (2016) suggest that market run-up has insignificant impact on the stock prices of firms issuing convertible bond. I expect a positive impact of market run-up on stock price reactions to convertible bond announcements.

In event study literature, market return volatility is another necessary control variable in determining the market reaction of convertible debt issuers. Based on Choe, Masulis, and Nanda (1993) and Myers and Majluf (1984) studies, Dutordoir et al. (2016) suggest that market return volatility is positively associated with asymmetric information problem which may exacerbate the adverse selection problem faced by convertible bond issuers. Dutordoir et al. (2016) and Duca et al. (2012) find that market return volatility has significant and negative impact on the stock price reactions of convertible bond issuers. In contrast, Li, Liu, and Siganos (2016) document no significant correlation between market return volatility and stock price reactions following the convertible bond announcements. Thus, I predict stock price reactions to convertible bond offerings to be negatively influenced by the market return volatility.

Financial leverage becomes one of the most important consideration in determining the stock price reaction. Stein (1992) argues that a highly leveraged firm issuing convertible bond may signal investors about their future investment opportunities and capability in fulfilling the contractual commitment of debt. On the other hand, firms with a higher financial leverage are vulnerable to asset substitution problem (Green, 1984) and adverse selection costs (Brennan and Kraus, 1987; Brennan and Schwartz, 1988) and thereby more likely to bear greater costs in raising a new debt. While, Lewis, Rogalski, and Seward (1999) and Chang, Chen, and Liu (2004) find highly leveraged firms receive a strikingly less negative market response, Jung and Sullivan (2009) uncover a negative relationship between financial leverage and investor reaction on convertible bond offerings. Dutordoir et al. (2016) and Duca et al. (2012) document insignificant relation between stock price reactions and financial leverage. Therefore, the impact of financial leverage on the stock price reactions of convertible bond announcements remains as an empirical question.

Financial slack accesses the firm capacity in cash flows and liquid assets and it serves as one of the potential determinants of market reaction. Loncarski, Ter Horst, and Veld (2008) suggest that financial slack serves as necessary collateral purposes to alleviate agency costs of debt. However, Duca et al. (2012) point out that firms high in financial slack issuing an additional convertible debt is an indication of experiencing stock overvaluation and more likely to face financial distress. Related event studies on convertible bond offerings suggest a positive (Loncarski, Ter Horst, and Veld, 2008; Lewis, Rogalski, and Seward, 2003), negative (Duca et al., 2012; De Jong et al., 2012) and insignificant (Dutordoir et al., 2016; Dutordoir and Gucht, 2007) link between financial slack and stock price reactions relative to convertible bond announcements. Thus, I do not have clear expectations on the impact of the financial slack. This remains as an empirical question.

Maturity measures the years taken for convertible bond to reach maturity. It is one of the essential control variable in examining the effect of investor reaction of convertible bond offerings. At one hand, Datta, Iskandar-Datta, and Patel (2000) suggest that firms with better performance tend to issue convertible bond with longer maturity in order to postpone the conversion. On the other hand, Datta, Iskandar-

Datta, and Raman (2005) and Rajan and Winton (1995) suggest that short-term debt provides lenders with an effective tool to monitor managersô behaviour and deter adverse asymmetric information as lenders have weak control rights on longer term debt. The evidence presented thus far suggest positive (Li, Liu, and Siganos, 2016; Abhyankar and Dunning, 1999) and insignificant relation between year-to-maturity and investor reactions in response to convertible bond offerings. Therefore, I expect the maturity to have a negative impact on stock price reactions to convertible bond announcements.

According Lewis, Rogalski, and Seward (2003) the market-to-book ratio measures the profitability of future investment decisions. In this respect, firms with high market-to-book ratios are less likely to suffer significant asymmetric information problems particularly concerning the profitability of their future investment opportunities. To the contrary, firms with low market-to-book ratios are likely to experience managerial discretion costs and substitution problems. More precisely, Li, Liu, and Siganos (2016) and Burlacu (2000) find that market-to-book is positively related to and market reactions of convertible bond issuers. However, Lewis, Rogalski, and Seward (2003) argue that stock prices of equity-like convertibles issuers react negatively to market-to-book ratio. In contrast, Dutordoir and Gucht (2007) show that market-to-book is insignificantly related to the stock price reactions following convertible bond offerings. I therefore have no exact expectations on the impact of the market-to-book ratio as it remains an empirical question.

Due to the hybrid nature of the convertible bonds, Lewis, Rogalski, and Seward (2003) introduces DELTA to measure the sensitivity of convertible bond particularly the equity component to its underlying common stock. The detailed definition of DELTA is explained in page 336 under section Appendix A. In other words, DELTA assesses the odds that the bonds are to be converted into equity by bondholders. Higher value in DELTA means that the convertible bond has an equity-like feature and thus it is very sensitive to its underlying stock. Whereas a low value in DELTA represents a bond-like characteristic of convertible bond. Krasker (1986) suggests that firm experience more negative stock price reactions for a larger equity-related offerings due to higher external financing costs. Consistently, Ammann, Fehr, and Seiz (2006) and De Jong et al. (2012) document that DELTA is negatively associated with stock price reactions following the convertible debt announcements. I therefore expect a negative relationship between DELTA and stock price reactions to convertible bond announcements.

Credit quality measures the issuerφs creditworthiness and serves as an important control variable in event study. Brennan and Schwartz (1988) suggest that high risk companies tend to benefit more for using convertible financing because their firm value is not affected by the level of company risk. On the other hand, Lewis, Rogalski, and Seward (1999) point out that issuers issuing speculative grade convertible bond may face fewer financing alternatives or weaker financial condition and thus more negative investor reaction is expected. According to Jen, Choi, and Lee (1997), low level of default risk, proxy by Moodyφs bond rating with Ba or lower ratings, is significantly a positive determinant of stock price reaction to announcement of convertible offerings. On the other hand, Lewis, Rogalski, and Seward (1999) show that speculative-grade convertible debt issuers are likely to have more negative investor reaction. I therefore do not have clear expectations on the impact of credit quality on the stock price reactions of convertible bond offerings.

In empirical literature, a few more additional control variables are introduced into their baseline estimation to control for alternative motivation for stock price reaction following the announcement of convertible debt offerings. While, De Jong et al. (2012) report a positive relation between short-sale constraints and stock price reaction, Dutordoir et al. (2016) show no significant effect of short-sale bans on issuerҫs stock reaction. I therefore expect a positive impact of short-sale constraints on the stock price reactions to convertible bond announcements.

Dutordoir et al. (2016) document that the stated proceeds for capital expenditure is significantly related to the convertible debt announcement returns. By contrast, Mikkelson and Partch (1986) conclude that neither the stated proceeds for capital expenditure nor general corporate purposes enter significantly in the specification of determining the firm overvaluation. Additionally, no significant effect for use of proceeds for finance debt and investment (see Chang, Chen, and Liu, 2004; Davidson, Glascock, and Schwartz, 1995).

Moreover, the inclusion of private placement dummy or 144A dummy as a control variable is found insignificantly associated with stock price reaction (see Duca et al., 2012; Marquardt and Wiedman, 2005). In contrast, Li, Liu, and Siganos (2016)ҫs specification show positive relation between 144A US privately placed convertible debts and firm overvaluation.

2.4 The corporate bond issue process

2.4.1 Roles of bookrunners in convertible bond issuances

Bookrunner is also known as mandated lead arranger (Yasuda, 2005), lead manager (Yasuda, 2005), lead placement agent, lead underwriter Fang (2005) or book manager Corwin and Schultz (2005) interchangeably in the corporate finance literature. Prior to bond issuance, an issuer will have to choose an investment bank or a number of investment banks to manage its bond issue. The agent bank involved in the underwriting and handling the bond issue is known as bookrunner.

A mandate is granted by issuer to the selected bank that meets both partiesô requirements. Judging from an issuer point of view, a bank that offers prospective coupon, lower fees charges, reputation in underwriting, and underwriting involvement in secondary market is more likely to be granted the mandate. However, the issuer selection is subjected to its type of financing and credit rating that may impress the prospective bookrunner. The mandate awarded bookrunner will then work together with the issuer to prepare a detailed financing proposal for the bond issuance. A detailed description of the roles and responsibilities of bookrunners is provided as follows.

Typically, the bookrunner assists issuer to arrange the terms and conditions of the issue by structuring the offer, performing due diligence, conducting bookbuilding process, setting up the syndicate, implementing marketing strategy, preparing the prospectus and legal documents, and negotiating with regulators. The bookrunner is compensated with the gross spread by the issuer for underwriting commitments. In a bookbuilding process, market demand for the selected bond issue places a critical key to ensure its successful issuance. In particular, a bookrunner is required to perform feasibility, sustainability, and marketability analysis on the chosen bond depending on the issuer credit quality and the market condition. Practically, a bookrunner will conduct roadshows to publicize the chosen type of bond to the potential investors and investigate the level of market demand based on a range of offered prices. After reviewing the feedbacks from potential investors, a bookrunner then revises the price to reflect the market demand and expedite the delivery of a bond.

New bond offerings entail considerable uncertainty to the mandated bookrunner. To alleviate the potential risks and increase the marketability across geographic bond markets, bookrunner is responsible to structure a syndicate group by inviting a few banks to join the responsibility in placing the convertible bonds to the marketplace. The decision to syndicate by inviting a few potential investment bankers to join as lead bookrunners depends on the risk and size of the issuance. Bookrunner is responsible to negotiate the terms and conditions of the agreement with issuer and the participating banks. Joint bookrunners, co-lead managers, and co-managers are the typical members in the syndicated bond arrangement. The involvement of the banks in a syndicate provides potential contributions of in depth analyst coverage, information production, certification, and market making capacity Corwin and Schultz (2005).

Bookrunners helps issuers to develop a detailed prospectus on the bond issue and keeps the financial information of issuer confidentially. The prospectus describes the specifications of the convertible bond issuance. A complete guide of prospectus is an important communication tool between issuer and investors. Bookrunner needs to ensure that the prospectus shall include type of offering and its seniority, credit rating analysis, detailed placement strategies, detailed information of underlying shares, security conversion rights, and paragraphs explaining issuer cash alternative option. Furthermore, the a completely detailed prospectus shall also include sales restrictions, listing, events of default, anti-dilution provisions, takeover protection, day count basis and dividend entitlement (see Choudhry, 2010; Iannotta, 2010 for the keys information in prospectus preparation).

Bookrunner is committed to arrange the legal advice in the bond transactions. A legal counsel will be consulted by the bookrunner to prepare the legal documents associated with the bond issue. Specifically, bookrunner has legal obligation to provide the listing particulars as required by the exchange regulator for public offerings. In addition, bookrunner serves as an agent bank acting on the fiduciary services that are associated with the bond issue.

Another principal task of the bookrunner is to gather the potential investor'sô preferences on the targeted bond product via grey market prior to the bond issuance. Grey market is generally formed during the book-building period and it serves as a forward market where investors trade the convertible bond prior to its issuance and the settlement of grey market transactions can only be done following the convertible bond offerings (Iannotta, 2010). To market the bond successfully, bookrunner is liable to make appropriate adjustments on the key terms for instance the coupon and the yield that reflect the market demand.

In the period of bond offerings, the bookrunner is responsible to stabilise the market price of the issued bond by establishing a pool of funds from the syndicate members (see Choudhry, 2010; Iannotta, 2010 for detailed explanation of the price stabilization process). The stabilization mechanism is based on overallotment agreement among the syndicate members. The bookrunner buys shares in the market if the market price falls below the offering price. The bookrunner exercises the overallotment option by increasing the issue size to cover the shortage due to high demand pushes offering price higher than the market price.

2.4.2 Convertible bonds issuance methods

This section summarizes the main issuance methods used in convertible bond issuance. The roles of a bookrunner can be classified explicitly depending on the committed underwriting strategies.

A bought deal is also known as firm commitment approach in which the investment bankers purchase convertible bonds from the issuing firm and reoffer to the public. The investment banks make profit through the difference between the purchase price determined by either competitive bidding or negotiation, and the public offering price. The firm commitment or bought deal method can be quickened via shelf registration or medium-term notes program (MTN) programmes.

Accelerated bookbuilt offering is a substitute to the typical lengthy bookbuilding process that allows issuing company to select the most favourable execution window to issue bond immediately. Underwriting banks are invited to submit proposals specifying the terms of pricing and the offer price (not necessarily) to bid for mandate. Based on the combination of both bought deal and bookbuilding underwriting structure, the winning bank develops a syndicate by inviting a few banks to sell bonds to investors on behalf of an issuer for a sales commission. However, bookrunner spends very little marketing effort to sell bonds. In this approach, bookrunner does not need to conduct a roadshow and the whole underwriting procedures can be completed within 2 days in U.S. Gao and Ritter (2010). According to Chiu, Chiu, and Elder (2017), Taylor and Flanigan (2013), the convertible bond placement under accelerated bookbuilt offer can be executed within a day by Asian and European issuers.

In contrast to bought deal and firm underwritten, best efforts is an underwriting arrangement of having investment banker act as an agent agree to sell convertible bonds to the public with their best marketing approach. The investment bank is not accountable for unsold convertibles and the issuing firm has to do their feasible recommendations to the investment bankers to the potential and interested investors. According to Smith (1986), best efforts is the most preferable choice of underwriting agreement by investment banks in comparison to firm commitment because of market uncertainty and credit risk of issuers that may affect the market making process.

In a similar vein to bought deal and firm commitment, block trade is another underwriting structure whereby the investment banks purchase the specified amount of shares from the issuing firms at a discount to the market price. The investment banks then reoffer the bought shares to potential investors at a profitable price.

Unlike public offerings, private placement is an underwriting agreement between issuer and investment bankers in which convertible bonds are sold to accredited investors only. Accredited investors is also defined as sophisticated investors include institutional investors such as hedge funds, financial institution, pension funds or insurance companies, non-financial firms, managements of issuing firms, and highly net worth individual investors Krishnamurthy et al. (2005). The criteria of accredited investors and private placements differ fundamentally across countries depending on the regulatorsô restrictions and requirements. This method is considered an attractive and effective method as the issuers can raise capital quickly.

A rights offer is an offering technique of convertible bonds to existing shareholders by giving them short-term options or rights to buy a newly issued convertible bonds at a discount from the market price in which the shares are offered to the public later.

Vendor placement is a marketing approach engaged by investment banks acting on behalf of vendors more specifically the issuers of convertible bonds. In this offering method, the convertible bonds are fully allotted to the mandated investment banks as parts for assets acquisitions or future businesses considerations. Third party allotment is a public offering or secondary distribution of convertible bonds with share options subject to Japan Securities Dealers Association (JSDA) regulations.[4]

2.4.3 Methods convertible bond offerings across countries

Table 2.2 presents methods of convertible bond offerings across seven regions covering from year 1984 to 2015. In US, 92.39% in approximately 4,069 deals disclose the offer method, followed by Canada and Australia. In contrast, the disclosure rate of convertible bond underwriting contracts in Western Europe, Asia, and UK is 38.15%, 24.78%, and 22.03%, respectively. Japan provides very little disclosure of the underwriting contracts in convertible bonds with merely 26 deals revealed in a total of 3,751 total deals.

---

[4]See http://www.jsda.or.jp/en/rules-guidelines/content/140101E44.pdf the detailed rules for handling the third party allotment of new securities issuances in Japan.

In US, firm commitment is typically associated with the negotiated sale and it accounts for 95.01% of 4,404 total disclosed deals. Private placement takes about 3.71% in total with accelerated bookbuilt, best efforts, bought deal, issued off MTN programme, offer for sale, and rights accounting for less than 1%, individually.

In Canada region, bought deal (57.02%), firm commitment (16.52%), private placement (15.20%) and best efforts (10.96%) are the four dominant methods of convertible bond offerings used by investment banks. While, the top choices of underwriting contracts by investment banks in European convertible bond market are firm commitment (28.40%), offer for sale (24.06%), private placement (16.37%), best efforts (10.45%), rights (10.26%) and accelerated bookbuilt (6.51%). In Japan region, firm commitment (12 deals), offer for sale (8 deals), private placement (4 deals), bought deal (1 deal) and third party allotment (1 deal) are the only underwritten contracts revealed by investment banks.

In Australia and New Zealand region, a total of 277 deals are disclosed with specific contracts: private placement (46.93%), firm commitment (13.72%), rights (13.72%), issue for cash/subscription (11.55%), best efforts (9.03%), accelerated bookbuilt (1.81%) and offer for subscription (1.81%). In the U.K. region, firm commitment (36.51%), offer for sale (34.92%), private placement (15.87%), accelerated bookbuilt (4.76%), best efforts (3.17%), open offer (3.17%) and rights (1.59%) are the preferred choices by investment banks. In Asian region, firm commitment (69.77%), private placement (15.22%), rights (5.90%) and best efforts (5.07%) are the main four methods of offerings chosen by investment banks.

Taken together, choices of methods of convertible bond issuances by investment banks differ remarkably across these seven regions.

2.4.4 Why study convertible bond financing?

In corporate finance, a convertible bond is classified as a hybrid financial instrument that has both debt-like and equity-like features. More precisely, the debt-like feature of a convertible bond has a maturity date that allows the issuer to redeem the bonds at par value and the bondholder to receive a promised continuous interval coupon payments. The equity-like feature of a convertible bond gives its bondholder the right to convert the bond into common equity via specified conversion option as specified in the prospectus.

One of the main reasons argued by practitioners for why convertible bonds remain an important financing vehicle for corporations is that convertible bond issuance can reduce financing costs because of the lower coupon in comparison to straight debt and the higher conversion price of common equity does not immediately dilute the number of shares outstanding. However, numerous academicians and theorists argue that such explanations are imprecise. More specifically, the risk-shifting model of Green (1984), the sequential-financing model of Mayers (1998) and managerial entrenchment viewpoint of Isagawa (2002) offer an explanation that convertible bond financing is a tool to reduce agency costs.

To resolve the possible conflicts of interest between bondholders and stockholders, Green (1984) proposes a risk-shifting model by arguing that convertible bonds can alleviate inducements of shareholders to engage in bad projects, particularly those with high-risk and negative net present value characteristics. This is mainly because the shareholders engaging in high-risk investment strategies will have to share cash flows with convertible bondholders and thus mitigates their incentives to undertake risky investments. Mayers (1998) suggests a sequential-financing theory that corporations can use convertible debt as a tool to lessen agency problems between management and shareholders. He argues that convertible bonds serve better than short-term straight debt to regulate the overinvestment problems by returning funds to bondholders via redemption when the investment option is not valuable. The call provision of convertible bonds allows managers to force conversion to reduce the cash flow drain and incremental financing costs when the investment is valuable. Isagawa (2002) shows that well designed callable convertibles (unlike straight debt) give advantages to especially entrenched and inefficient managers to secure their position in the firm uninterrupted. More specifically, the Isagawa reasoning is based on the flexibility of convertibles that allows manager to force conversion by calling the bonds if the new project is value-increasing but never to force conversion by calling the bonds if the new project is value-decreasing.

The second group of literature on convertible bond financing provides adverse selection costs alleviation through convertible bonds (see risk uncertainty model by Brennan and Kraus, 1987; Brennan and Schwartz, 1988; signaling model of Constantinides and Grundy, 1989; backdoor-equity model of Stein, 1992; signaling model of Nyborg, 1995; non-signaling model of Chakraborty and Yilmaz, 2011). In particular, Brennan and Kraus (1987) and Brennan and Schwartz (1988) provide a rationale that convertible bond has an important feature that is not affected by the company risk. This condition allows issuer and investors to agree on the value of the bond and protects the bondholder against the costs of adverse selection. This is because higher perceived risk are translated into a higher value of the conversion option and this results in a fairly priced security. As a result, the investors are more interested to invest in convertible bonds with better terms that could alleviate the risk uncertainty. Furthermore, they point out that the use of convertibles financing provides an alternative source of financing to risky issuing companies. It is because risky firms are more likely to bear greater default risk due to high interest cost straight debt financing. Unlike straight bond, Constantinides and Grundy (1989) show that non-callable convertible bonds incorporated with stock repurchase can solve the adverse selection problem and reveal signaling equilibria lead management to invest optimally. Stein (1992) develops a backdoor equity financing model that corporate firms may use convertible bonds as indirect approaches to acquire delayed equity financing when common equity issuance is less attractive. In case of equity offering announcement, the firm is perceived to be overvalued (Loughran and Ritter, 1997). However, convertibles consist only a smaller portion of equity element and thus are less likely to be perceived as a signal of firm overvaluation. The backdoor equity model rests on the assumption of rational managers acting on the trade-off between the asymmetric information associated with the issuance of equity and the financial distress costs associated with the issuance of straight debt. Nyborg (1995) proposes a model whereby the benefits of callable convertible debt can only be materialized if the conversion is voluntary. He argues that risk-averse managers provide a positive signal by not calling convertible debt immediately, but bad managers with value deteriorating equity are expected to send a negative signal of a forced call. As such, forced conversion is associated with a negative stock price reaction. Chakraborty and Yilmaz (2011) present a non-signaling model suggesting that the adverse selection in capital markets due to the presence of informational asymmetries between firms and investors can be costlessly overcome by issuing callable convertible bonds with restrictive call provisions. They argue that the callability feature gives bondholders the right to convert the bond into common stock or tender it to the firm if the convertible is called. In addition, it prevents the manager from calling the bond unless the firm prospects improve and the stock price exceeds the trigger value. This condition allows the payoff to new claimholders independent from the private information of the manager and thereby resolve the adverse selection problems.

Another group of literature highlights that the incentive of convertible bond financing is due to the demand from investors. Lewis, Rogalski, and Seward (2001) suggests that some firms choose convertible bond offering simply because of rationing in credit markets that prevents some issuers particularly risky firms to use equity financing. This is because convertible bond is more senior to common equity and its value is less sensitive to the private information of the issuers. Brown et al. (2012) provide a rationale that hedge fund involvements in convertible securities provide opportunities for firms to issue convertible bonds at a lower cost in comparison to equity offerings. Grundy and Verwijmeren (2018) find that the popularity of call provisions in convertible bond offerings has declined considerably due to the demand preferences of less risky non-callable convertibles by convertible arbitrage hedge funds buyers in implementing convertible arbitrage strategies. This is because convertible arbitrage hedge funds may suffer losses on their long position in the convertible and short position on the issuerôs stock for an unanticipated call redistribution.

This section provides a review from previous research that the choice of issuing convertible bonds by corporate firms are clearly motivated by its features to reduce agency costs, alleviate adverse selection costs and demand from investors and hedge fund managers.

2.5 Data sources and geographical classification

2.5.1 Data sources and sample construction

I obtain firm level announcements of convertible bonds data from the Securities Data Corporation Platinumôs Global New Issues Database (hereafter SDC). This database provides detailed information on convertible bonds including total proceeds, the number of deals, name and number of bookrunners, fees charged, yield to maturity (YTM), credit ratings, issue dates, issuersô name and industry classifications, use of proceeds, time to maturity, marketplace, and shelf registration.

Dutordoir et al. (2016) find no data available for the U.S. prior to 1985 and other countries prior to 1991. Therefore, this study sets the sample period from January 1984 to December 2015.

Unlike much of the bond market studies in the corporate finance literature (see Fang, 2005; Dutordoir et al., 2016), this study includes utilities, banks, and non-bank financial firms in which these classifications may subject to stricter financial regulations to perform comparative study analysis.

Countries with less than 10 convertible bond issues during the sample period are excluded. This results in a sample of the convertible bonds issued by issuers domiciled in 30 countries as follows: Australia, Austria, Belgium, Canada, China, Finland, France, Germany, Greece, Hong Kong, India, Indonesia, Ireland, Italy, Japan, Luxembourg, Malaysia, Netherlands, New Zealand, Norway, Philippines, Singapore, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, United

Kingdom (U.K.), and United States of America (U.S.). This produces a sample of 21,662 deals with accumulated proceeds of USD 2.73 trillion.

To ensure basic information on the underwriting method, I eliminate those observations that contain ñNOTAPPò, ñNOT-AVAILABLEò, ñDIRECTLY-PLACEDò, ñUNKNOWNò, UNDISCLOSEDò, ñNON-UNDERWRITEò, ñTO-BE-ANNOUNCEDò, and ñUNSPECò, descriptions in SDC for the bookrunner field. I also exclude observations in which an issuer is liable as a bookrunner for its own deal. Tables 2.3 and 2.4 show that a total of 7,708 deals worth USD315.90 billion (non-inflation adjusted) are dropped as a result of these initial filters.

Then, I merge the convertible bond issuances dataset obtained from SDC Platinum with total return index (RI) and accounting data of a firm to obtain event abnormal returns and control variables for convertible bonds issuers in Worldscope. Convertible bond issuers are identified by SDC via a Primary SEDOL and an Ultimate Parent SEDOL. I use an issueršs Primary SEDOL as the main key in matching and Ultimate Parent SEDOL will only be used when Primary SEDOL is not available or unmatched with the Worldscope database in Datastream. A total of 12,381 deals in USD2.31 trillion reported in SDC are correctly matched and merged with Worldscope.

A further filter is applied for total return index (RI) availability in Worldscope. In considering 30 countries, I download the return index which is adjusted to the standardized USD currency for comparative analysis purposes. From 12,381 total deals, I then exclude 743 deals in which no stock return index data available during the event window by these particular issuers.

It is common to have multiple bond tranches in the convertible bond market in which issuers tend to have several deals on the same issue date either with similar or different bond characteristics including maturity dates, issuance size, fees charges, yield-to-maturity, years-to-maturity, syndicate size, marketplace, and use of proceeds. In the event study, I treat multiple bond tranches offering as one offering by joining them together. This reduce the sample size to 11,487 deals.

A final filter is applied for deals with insufficient number of days of stock returns in the estimation period. In this study, abnormal return is calculated by using market model on an estimation window of (ī 250 to ī 10) trading days. Thus, any deal with its stock return index less than this required estimation window period is excluded for cumulative abnormal returns estimations. In this respect, the required estimation window period is 240 days and any event with incomplete stock return index, which is less than 240 observations will be dropped automatically in CAR analysis by Stata. These filters produce a final event study sample of 11,350 deals and total issue proceeds of USD2.13 trillion where cumulative abnormal returns can be calculated.

2.5.2 Geographical classification of firms

I classify the 30 sample countries into 7 geographical regions for the ease of making comparisons and policy implications. The geographical classification is motivated by Kim and Weisbach (2008) and Henderson, Jegadeesh, and Weisbach (2006) in new security issuance. These are: Asia, Japan, Australia & New Zealand, Western Europe, U.K., U.S., and Canada. This classification is based on sample country availability after data screening in sample construction section.

Asia includes China, Hong Kong, India, Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. Western Europe comprises of Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Spain, Sweden, and Switzerland. For robust comparison purposes, I also include East-Asian (China, Japan, South Korea, Taiwan and Hong Kong) and Anglo-Saxon (U.K., U.S., Canada, New Zealand, Australia and Ireland) regions.

2.6 Methodology

2.6.1 Abnormal return measures

Total return index (RI) is a theoretical growth value of a shareholding for a specified period by assuming dividends are reī invested to purchase extra units of an equity at the closing price applicable on the prior dividend date. *RI* is constructed using the annualized dividend yield as follows:

$$RI_t = RI_{t-1} \times \frac{PI_t}{PI_{t-1}} \times \left(1 + \frac{DY_t}{100} \times \frac{1}{N}\right) \tag{2.1}$$

where *PI* is price index and *DY* is dividend yield. The daily stock returns, $R_{i,t}$ for each convertible bond issuer are calculated as the continuously compounded by taking the natural logarithms of todayõs return index of an issuer over yesterdayõs return index of an issuer.

$$R_{i,t} = \ln\left(\frac{RI_t}{RI_{t-1}}\right) \tag{2.2}$$

where *RI* is the total return index obtained from Datastream. This method is also used to calculate the daily market return.

Following Alexandridis, Petmezas, and Travlos (2010), the benchmark on the daily market return is proxied by the corresponding countryǿs Datastream valueī weighted market index return. For example, the TOTMKUS Datastream index is used for the U.S.

I follow the standard event study methodology of Brown and Warner (1985) to estimate abnormal stock returns for convertible bond issuers. Let $R_{i,t}$ designate the observed continuous compounded return for convertible bond issued by firm *i* on day *t*. $AR_{i,t}$ is defined as the abnormal return for security *i* on day *t*. For every convertible bond, the abnormal return for each day in the event period is estimated using OLS market model procedures:

$$AR_{i,t} = R_{i,t} - \hat{\alpha}_i - \hat{\beta}_i R_{m,t}, \tag{2.3}$$

where $R_{m,t}$ is the continuous compounded returns on the corresponding countryǿs Datastream value-weighted equity market index for the country in which the underlying stock of a convertible bond issuer is listed for day *t*. $\hat{\alpha}_i$ and $\hat{\beta}_i$ are parameters obtained from an OLS estimator over the window (ī 250, ī 10) prior to the announcement date of convertible bond issuance.

The average abnormal return denoted by *AAR* is then calculated across multiple convertible bond announcements.

$$AAR_t = \frac{1}{N}\sum_{i=1}^{N} AR_{i,t}$$

(2.4)

where AAR_t is the average abnormal return at time *t*, $AR_{i,t}$ is the abnormal return for issuer *i* at time *t*, and *N* is the sample size.

To examine the total impact of convertible bond announcements over a particular event window, I calculate the cumulative abnormal return (CAR) by summing up the individual abnormal returns from one day before the convertible bond announcement to one day after the convertible bond announcement.

$$CAR\left(-1,1\right)_t = \sum_{t=-1}^{t=1} AR_{i,t}$$

(2.5)

where CAR_t is the cumulative abnormal return from time $t = -1$ to $t = 1$ surrounding the announcement date at time $t = 0$.

For the full sample of convertible bond announcements across multiple firms, the cumulative average abnormal return (CAAR) is then calculated.

$$CAAR_t = \frac{1}{N}\sum_{i=1}^{N} CAR\left(-1,1\right)$$

(2.6)

where $CAAR_t$ is the cumulative average abnormal return, *N* is the sample size, and $CAR(-1, 1)$ is the cumulative abnormal return over the three-day window period surrounding the announcement date.

Given the abnormal returns estimated from OLS market model method, the statistical significance of overall abnormal returns of the event period is assessed for each sample. The null hypothesis to be tested is that the average of cumulative abnormal returns over the $(-1, 1)$ window is equal to zero. The three-day cumulative average abnormal returns measure the wealth effect for the issuing firmôs shareholders following the announcements of convertible bonds.

2.6.2 Cross-sectional T test

The cross-sectional *t*-statistic is a non-standardized and nonparametric event study significance test. The test statistic is derived by taking the ratio of the three-day (ī 1, 1) cumulative average abnormal return to its estimated standard deviation estimated from time-series of average abnormal returns. Specifically, the test statistic for testing $CAAR = 0$ is constructed as:

$$t_{CAAR} = \sqrt{N}\frac{CAAR}{S_{CAAR}} \tag{2.7}$$

where S_{CAAR} is the standard deviation of the three-day cumulative abnormal returns across the sample, and N is number of events.

The variance of the cumulative abnormal returns, S^2_{CAAR} is computed as:

$$S^2_{CAAR} = \frac{1}{N-1}\sum_{i=1}^{N}\left(CAR_i - CAAR\right)^2 \tag{2.8}$$

where S_{CAAR} can be obtained by taking square root of the variance estimated from the three-day time-series cumulative abnormal returns.

2.6.3 Patell (1976) test

Kolari and Pynnönen (2010) find that parametric tests with standardized abnormal returns have superior power relative to a parametric test setting using cross-sectional *t*-statistics. Patell (1976) proposes the use of a standardized abnormal return to calculate the *t* statistic with T ï 2 degrees of freedom:

$$V_{it} = \frac{AR_{it}}{s_i \sqrt{C_{it}}} \sim t\left(T-2\right), \tag{2.9}$$

where variance of the residuals for the estimation period, $s_i^2 = \frac{\sum_{\tau=1}^{T} AR_{i\tau}^2}{T-2}$ and s_i can be obtained by taking the square root of the variance.

As the prediction of event window abnormal returns falls outside the estimation period, Patell (1976) adjusts the standard error by using the forecast error:

$$C_{it} = 1 + \frac{1}{T} + \frac{\left(R_{mt} - \bar{R}_m\right)^2}{\sum_{\tau=1}^{T}\left(R_{m\tau} - \bar{R}_m\right)^2}, \tag{2.10}$$

where T = number of days in estimation period, and $\bar{R}_m = \frac{1}{T}\sum_{\tau=1}^{T} R_{m\tau}$.

The cumulative standardized abnormal return can be formed by introducing the number of days (L) in the accumulation (event window) to construct a second *t* statistic. The normalized cumulative abnormal return is as follows:

$$W_{iL} = \sum_{t=1}^{L} \frac{AR_{it}}{s_i \sqrt{LC_{it}}} \sim t\left(T-2\right), \tag{2.11}$$

The $Z_{patell,t}$ and $Z_{patell,L}$ are Zī tests for testing whether the null hypothesis of AAR and CAAR equal to zero, respectively:

$$Z_{patell,AAR} = \frac{\sum_{i=1}^{N} V_{it}}{\sqrt{\left(\sum_{i=1}^{N} \frac{T_i - 2}{T_i - 4}\right)}}.$$

(2.12)

$$Z_{patell,CAAR} = \frac{\sum_{i=1}^{N} W_{iL}}{\sqrt{\left(\sum_{i=1}^{N} \frac{T_i - 2}{T_i - 4}\right)}}.$$

(2.13)

2.6.4 Corrado (1989) rank test

It is worth to point out that parametric tests depend strongly on a stable variance assumption and are more likely to suffer event-induced volatility and cross-correlation (Brown and Warner, 1985; Kolari and Pynnönen, 2010). Nonparametric tests, by contrast, do not use return variance and therefore perform better even with the presence of variance inflation.

The Corrado (1989) rank test is a nonparametric test and robust against event-induced volatility and cross-sectional correlation of abnormal returns. In this procedure, time series abnormal returns obtained from market model are transformed into respective ranks. Let K_{it} denote the rank of the excess return A_{it} in security *I*ôs time series of 256 excess returns:

$$K_{it} = rank\left(A_{it}\right), \quad t = -250, ..., +5,$$

(2.14)

where $A_{it} > A_{ij}$ implies $K_{it} > K_{ij}$ and $256 > K_{it} > 1$. The average rank is calculated by summing oneī half to the average number of observed returns, or 128 to be specific.

The rank statistic substitutes $\left(K_{it} - 128\right)$ for the excess return A_{it} and computes a one-day event window at day 0 test statistic as:

$$T_2 = \frac{1}{N}\sum_{i=1}^{N}\left(K_{it} - 128\right) \Big/ S\left(K\right)$$

(2.15)

where standard deviation $S\left(K\right)$ is calculated using the entire 256-day sample period:

$$S\left(K\right) = \sqrt{\frac{1}{256}\sum_{t=-250}^{+5}\left(\frac{1}{N}\sum_{i=1}^{N}\left(K_{it} - 128\right)\right)^2}$$

(2.16)

This study follows Cowan (1992)ôs technique to extend the rank test to a multiple event window. This rank test treats the 240-day as estimation period and the three day event period as a single time series. The rank test statistic for cumulative abnormal returns composed of days D_1 through D_d is calculated as:

$$T_{Rank} = d^{\frac{1}{2}}\frac{\bar{K}_D - 122}{\sqrt{\left(\sum_{t=1}^{243}\left(\bar{K}_t - 122\right)^2 \Big/ 243\right)}}$$

(2.17)

where $\bar{K}_D$ is the average rank across the *n* stocks and *d* days of the event window $\left(-1 \le d \le 1\right)$. By construction, $\bar{K}_t$ is the average rank across *n* stocks on day *t* of the 243 trading days combined estimation and event period.

2.6.5 Cowan (1992) generalized sign test

Kolari and Pynnönen (2010) argue that Corrado (1989) rank test is prone to incremental misspecification in the standard deviation especially for longer period CARs. Additionally, Cowan (1992) proves that generalized sign test is more powerful than the rank test and less sensitive to length of event window, variance inflation, and thin trading in simulations using NASDAQ stocks.

The generalized sign test by Cowan (1992) is a nonparametric significance test for event studies. More specifically, the generalized sign test examines whether the number of events with positive cumulative abnormal returns in the event window exceeds the number expected in the absence of abnormal performance. The number expected is based on the fraction of positive abnormal returns in the 240-day estimation period,

$$\hat{p} = \frac{1}{n}\sum_{j=1}^{n}\frac{1}{240}\sum_{t=E_1}^{E_{100}} S_{jt},$$

(2.18)

where

$$S_{jt} = \begin{cases} 1\ if\ \ AR_{jt} > 0 \\ 0\ otherwise \end{cases}$$

(2.19)

The test statistic uses the normal approximation to the binomial distribution with parameter $\hat{p}$. The generalized sign test statistic of whether the CAAR is equal to zero is:

$$Z_G = \frac{w - n\hat{p}}{\sqrt{n\hat{p}(1-\hat{p})}},$$

(2.20)

where w is defined as the number of stocks in the event window for which the cumulative abnormal return $CAR_{j,(D_1,D_d)}$ is positive, and n is the sample size.

2.7 Results

2.7.1 Stock-price reactions to convertible bond announcements worldwide

In Table 2.6, I report mean, median, and standard deviation of CAARs in response to convertible bond announcements by country. In addition, I also present the significance tests for the t-test, Patell (1976), Corrado (1989) rank test, and Cowan (1992) generalized sign test. The inclusion of both parametric and non-parametric tests are motivated by prior event studies on convertible bond announcements (see for instance, Fenech, Skully, and Xuguang, 2014; Ammann, Fehr, and Seiz, 2006; Marquardt and Wiedman, 2005; Cheng, Visaltanachoti, and Kesayan, 2005; Kang and Stulz, 1996). Brown and Warner (1985) and Kolari and Pynnönen (2010) highlight that parametric significance tests may suffer event-induced volatility and cross-correlation problems as they depend strongly on a stable variance asumption. Thus, I include two additional non-parametric tests Corrado (1989) rank and Cowan (1992) to mitigate the potential bias. Based on the simulation experiments, Cowan (1992) show that generalized sign test is more powerful than the rank test and less sensitive to length of event window, variance inflation, and thin trading. The main purpose of having non-parametric tests is to check the robustness of the results obtained from the parametric tests.

The mean (median) of three-day CAR for the whole sample of convertible bond market is ī 1.15% (ī 0.87%) and significant against T-test, Patell (1976) test, Corrado (1989) rank test, and Cowan (1992) generalized sign test. Judging from mean CAR, convertible bond issuers in general experience negative market reaction. Akerlof (1970) argues that security offerings are often viewed as ñlemons problemò by the investors where equity offering is perceived as bad news to the firm. Both Myers and Majluf (1984) and Miller and Rock (1985) offer theoretical explanations that the negative reaction of the security offerings is mainly due to security price discount demanded by investors in considering the risky securities investment for compensating the potential overvaluation of the firm.

The main striking pattern from Table 2.6 is that convertible issuers in different regions experience significantly different market reactions in response to the announcements of convertible bond. More specifically, Asia and Australia & New Zealand regions report significantly positive three-day CAR of 0.25% and 0.41%, respectively. While, Japan, Western Europe, U.K., U.S., and Canada report significantly negative CAR at ī 0.28%, ī 0.99%, ī 3.09%, and ī 0.55%, respectively. This pattern is consistently observed in a wider event window at (ī 2, 2).

The differences could be possibly due to the difference in corporate governance systems in different countries (Rahim, Goodacre, and Veld, 2014; Moerland, 1995). In particular, market-oriented systems have better financial markets and more dispersed share of ownership in corporations in comparison to network-oriented systems with stronger banks ownership and thereby provides better roles in monitoring. Kang et al. (1995) argue that the difference in stock price reaction between American issues and Japanese issues are due to investorsô wealth maximization policy pursuit by Japanese manager and greater role of banks in issuing process. However, De Roon and Veld (1998) point out that the differences in corporate governance structure between the United States and the Netherlands cannot explain the difference impact of announcement effects of convertible bonds. Ammann, Fehr, and Seiz (2006) argue that institutional difference may possibly explain why the German market reacts significantly stronger than the Swiss market.

Consistent with Dutordoir et al. (2016), another interesting pattern is that Japanese convertible bond issuers record significantly less negative market reaction in comparison to U.S. issuers and other developed countries. Dutordoir et al. (2016) argue that the difference in abnormal returns arises where Japanese domiciled issuers are more likely to issue convertible bond for the purpose of capital expenditure in comparison to U.S. issuers who issue convertible bond for general corporate purposes. They further point out that the disclosure of the use of proceeds is mainly voluntary for U.S. firms but under Japan Securities Dealers Association (JSDA) regulations the detailed disclosure of the offerings are required for the Japanese firms. Dutordoir et al. (2016) show that the main reason of why Japanese firms choose to issue for capital expenditure because it is associated with lower stock return volatility.

Convertible bond issuers from Anglo-Saxon region comprising U.S., Canada, U.K., Ireland, Australia, and New Zealand present significantly more negative market reaction at ī 2.41% in comparison to East-Asian region at ī 0.01%. This is in line with the existing country level studies (see Dutordoir et al., 2016; Fenech et al., 2014; Duca et al., 2012; Loncarski et al., 2008; Suchard, 2007). Lee, Lee, and Yeo (2009) show that the investor reactions to convertible bond announcements are positively associated with shareholder rights for hedge-like and equity-like issuers and positively associated with creditor rights for debt-like issuers. In addition, La Porta et al. (2002) empirically show that firms in countries with better investor protections experience higher valuation. The law and finance literature by La Porta et al. (1998) could possibly explain the difference of abnormal returns between Anglo-Saxon region and East-Asian region.

2.7.2 Stock-price reactions to financials, industrials, and utilities classifications worldwide

In this section, I follow Linn and Pinegar (1988) and Eckbo and Masulis (1992) on three main categories of SIC industrial classifications; financials, industrials and utilities, to examine the stock price reaction following the announcements of convertible bonds. Public utility issuers are identified by Standard Industrial Classification (SIC) by SDC Platinum ranges from 4,000 to 4,999. While, the SIC for financial specific issuers ranges from 6,000 to 6,799. The industrial category includes all other SIC classifications excluding financials and public utilities. The results from this section is presented in Table 2.7.

The main pattern from the whole sample CAR analysis in Table 2.7 shows that public utility (ī 1.50%) issuers experience more negative and significant market reaction in comparison to industrial (ī 1.17%) issuers and financial (ī 0.91%) issuers report the least negative market reaction. A similar pattern is observed for a wider window at (ī 2, 2). Linn and Pinegar (1988) point out that information effects explain the abnormal returns for industrial firms while tax benefits and regulatory conditions are more likely to explain the abnormal returns for financial and utilities. More specifically, the differences of market reaction across three main categories could be due to leverage effect (Modigliani and Miller, 1958), market value maximization rationale or size maximization rationale (Miller and Modigliani, 1961; McConnell and Muscarella, 1985), dividend related (Impson, 1997), law and finance (La Porta et al.,1998), and firm-specific characteristics and security design (Lewis, Rogalski, and Seward, 2003).

According to proposition II developed by Modigliani and Miller (1958) that the expected rate of return of a common stock is a function of leverage. In particular, their empirical analysis clearly shows that the yield of common stock of both utility and industrial issuer are positively related with financial leverage. Consistently, MuradoỲlu and Sivaprasad (2012) find a positive relation between abnormal equity returns and leverage of UK utility firms. But they find that industrial issuers with high in leverage experience more negative abnormal returns.

Moreover, McConnell and Muscarella (1985) find that industrial firms with an increase (decrease) in capital expenditure are associated with positive (negative) market value of common stock. McConnell and Muscarella (1985) suggest that the capital expenditure policy does not influence the market value of public utility firms because they unlikely to undertake positive net present value investment projects. It is thus expected that firm with capital expenditure driven proceeds of convertible bond offerings tend to experience positive stock price reactions.

Alternatively, Impson (1997) argues that dividend-decrease announcements may result in great disappointment by high yields preference utilityôs clientele, disagreement of shareholders in investment, and higher agency costs. Consistent with this explanation, he documents that dividend-decrease announcements by public utilities produce significantly stronger negative market responses than industrial firms. In addition, cross-country differences particularly the level of investor protection in law and finance (La Porta et al.,1998), and firm-specific characteristics and security design (Lewis, Rogalski, and Seward, 2003) could further explain the differences of abnormal returns between industrial classifications and regions.

The difference between financial and industrial issuers is striking as financial issuers domiciled in Western Europe, U.K., U.S., and Canada regions report less negative market reaction in comparison to industrial issuers. In contrast, Japanese financial issuers face a more negative market reaction in comparison to industrial issuers. On the other hand, both Asia and Australia and New Zealand regions report positive stock price reaction at 0.21% and 0.61%, respectively. In the context of Australia convertible market, Fenech, Skully, and Xuguang (2014) shows that financial firms compared to non-financial firms are associated with less negative abnormal returns for convertibles announcements. They offer a possible explanation that financial firms may encounter less asymmetric information than non-financial firms because they perform more regular capital raising activities compliant to regulatory capital requirements (Bøhren, Eckbo, and Michalsen, 1997). Consistently, Li, Liu, and Siganos (2016) find that the U.S. stock market reactions to convertible bond issuance announcement by financials firms with more stringent regulation are less negative than for non-financial firms.

Another interesting pattern can be observed from Table 2.7 is that industrial firms in Western Europe and U.S. experience more negative market reaction in comparison to public utility issuers. Smith (1986) points out that managers of utilities are strictly regulated and they need to seek for permissions from respective regulatory authorities to issue new securities. The petitioning process could reduce the asymmetric information between manager and investors, limit managersô discretion to decide what to sell, and reduce managersô ability to time security offerings. Consequently, the information asymmetry problem in utilities is greatly alleviated and result in smaller price changes associated for utilities than industrials.

To the contrary, Japan, U.K., and Canada report that industrial firms face less negative market reaction in comparison to utility issuers. The reported CAR for Asia and Australia and New Zealand regions are not significant and thus comparison between industrial classifications cannot be made.

Moreover, public utility issuers domiciled in Western Europe, U.K., U.S., and Canada are found to experience more negative market reaction in comparison to financial issuers. Japan is the only region show that both financial and utility issuers report similar stock price reaction at ī 0.82% associated with convertible bond announcements. The differences could be explained by the fact that financial firms in comparison to utilities firms are more scrutinized through effective monitoring by regulatory bodies (Li, Liu, and Siganos, 2016; Fenech, Skully, and Xuguang, 2014)

In summary, the results in Table 2.7 indicate that the stock prices react differently across countries and regions. More specifically, financial issuers in Anglo-Saxon are reported experience less negative market reaction in comparison to industrial issuers. However, industrial issuers in East-Asian region are shown to have undergone positive market reaction in industrial category and negative reaction in financial category. The differences may be due to the above-mentioned factors which to be examined.

2.7.3 Stock-price reactions to use of proceeds of convertible bonds worldwide

In this section, I thus explore whether convertible bond issuers from industrial category experience different stock price reactions in response to different purposes of convertible bond offerings worldwide. McConnell and Muscarella (1985) argue that an increase in capital expenditure announcement by firm conveys a positive market value signal that firm is capitalizing and increasing investment in positive net present value projects. In a similar vein, Dutordoir et al. (2016) argue that Japanese convertible bond issuers experience more favourable announcement effects because of using capital expenditure as stated uses of proceeds. But they do not provide a detailed analysis of CARs between capital expenditure and other purposes of convertible bond offerings. Abhyankar and Dunning (1999) find that convertible bond issuers in the U.K have a positive market reaction when the stated use of proceeds of convertible bond is to finance capital expenditure. Negative stock price reactions are documented when issuers choose convertible bond to finance acquisition, debt, general corporate and mixed purposes.

In Table 2.8, for the whole sample, capital expenditure is the second most commonly stated reason by convertible bond issuers and they face the least negative three-day stock price reactions of ī 0.27%, while general corporate purpose records the most negative at ī 1.62%. This finding confirms prediction by McConnell and Muscarella (1985) that capital expenditure is an indication for the presence of profitable investment opportunities.

Debt refinancing and working capital purposes of convertible bond offerings show insignificant stock price reactions. General corporate purpose and acquisition stated use of proceeds appear with significant negative announcement return of ī 1.52% and ī 1.11%, respectively. Surprisingly, general corporate purpose is the most commonly stated use of proceeds given by convertible bond issuers even though it has large negative impact on the stock price reactions. Dutordoir et al.

(2016) also argue that agency cost of fulfilling the requirements of capital providers and ex ante uncertainty associated with specific purposes are two additional reasons for imperfect disclosure. They point out that general purposes description allow securities issuers to easily involve in more opportunistic timing motives and they find expansions in asset size, capital expenditure, and research and development following the convertible bond offerings by U.S. firms who use general corporate purpose as the main description of use of proceeds.

Convertible bond issuers domiciled in Asia experience significantly positive stock price reactions of 1.10% to debt refinancing motivations for convertible bond issuance. This corroborates explanation of a standard trade-off model of dynamic capital structure that firms only refinance to exploit tax benefits of debt due to the presence of adjustments costs in pursuing optimal capital structure (see Fischer, Heinkel, and Zechner, 1989, Welch, 2004, Leary and Roberts, 2005). A comparison of stock price reactions among purposes of offerings cannot be inferred due to insignificant stock price reactions other than debt refinancing.

In contrast, stock prices of Japanese issuers react significantly negatively to debt refinancing (ī 1.35%) and other (ī 1.24%) purposes of convertibles issuances. In a wider window, issuers with working capital show significant stock price reactions at ī 1.68%. General corporate purpose is the most preferred choice by issuers domiciled in Australia and New Zealand as it conveys significantly positive stock price reactions at 1.27%. This is followed by acquisition purpose with 1.14% significant positive stock price reactions. Sudarsanam, Holl, and Salami (1996) point out that shareholders of bidder companies may either experience a small synergistic gain or a loss to merger announcements.

Convertible bond issuers in Western Europe with general corporate purpose appear to have experienced significantly negative stock price reactions (ī 1.33%). The main reason of this choice could be due to agency cost, uncertainty and market timing reasons. Both acquisition and capital expenditure purposes record weakly significant negative stock price reactions at ī 1.32% and ī 2.55%. Extensive mergers and acquisitions literature suggest that the loss resulted in negative market reaction could be due to various reasons for example hubris hypothesis (Roll, 1986), agency costs of free cash flow (Jensen, 1986) or bad managerial objectives (Morck, Shleifer, and Vishny, 1990). The negative capital impact of capital expenditure is in line with Titman, Wei, and Xie (2004) argument that firms with substantially increase in capital investments are likely to experience negative stock returns as investors tend to underreact to the empire building implications of increased capital investment.

On the other hand, convertible bond issuers in the U.K. react significantly negative to acquisition (ī 5.25%) and general corporate purpose (ī 1.39%) and weakly significant to other (ī 2.87%) and debt refinancing (ī 1.92%) purposes. Canadian issuers experience less negative stock priced reactions for general corporate purpose at ī 0.15% as compared to debt refinancing at ī 0.93%. While, capital expenditure and working capital purposes of offerings by Canadian firms record weakly significant negative stock price reactions at ī 0.85% and ī 3.95%, respectively.

However, the U.S. issuers suffer rather more negative and significant stock price reactions for capital expenditure (ī 7.77%) and working capital (ī 6.11%) purposes. By contrast, issuers based in the U.S. experience less negative stock price reactions for debt refinancing (ī 2.12%), acquisition (ī 2.27%), other (ī 3.25%) and general corporate purposes (ī 3.84%) of offerings. The negative stock price reaction of capital expenditure corroborates Titman, Wei, and Xie (2004) argument on the empire building implications of increased capital investment. Alternatively, it may be due to optimistic managers of taking some negative net present value projects (see, Heaton, 2002). General corporate purpose serves the most favourite choice among U.S. issuers and this pattern could be due to agency cost, uncertainty and market timing reasons as ruled out by Dutordoir et al. (2016).

Firms in Anglo-Saxon region experience significantly less negative stock price reactions when the convertible bond offerings are designed for acquisition (ī 1.27%), debt refinancing (ī 1.84%) and working capital (ī 2.23%). Issuers face more negative stock price reactions approximately at ī 3.10% when the purpose of issuances are for capital expenditure and general corporate purposes. By contrast, East-Asian issuers react significantly positive at 0.30% for general corporate purpose but respond insignificantly to acquisition, capital expenditure, debt refinancing and working capital purposes of convertible bond issuances. The results suggest that the convertible bond issuers domiciled in Anglo-Saxon region have to wisely choose the best reason for deciding convertible bond offerings as it conveys significantly different impact to their stock price reactions. Undoubtedly, general corporate purpose may continue to serve as the top choice among convertible bond issuers in East-Asian region due to its positive impact on the shareholder wealth effect.

2.7.4 Regression results of determinants of stock price reactions around convertible bond announcements.

In this section, I examine the potential impact of firm and market characteristics on the stock price reaction to convertible bond announcements. The inclusion of the potential determinants are mainly motivated by Dutordoir et al. (2016), Duca et al. (2012) and Lewis, Rogalski, and Seward (2003). In particular, Dutordoir et al. (2016) find negative impacts of firm size and stock return volatility and positive impacts of stock return run-up and market volatility on the stock price reactions around convertible bond offerings for a sample of nine developed countries. However, financial leverage, market run-up, financial slack, issue size and year-to-maturity enter insignificantly in their baseline regression results. Duca et al. (2012) document that financial slack and stock return volatility of issuer-specific and market volatility are negatively associated with the convertible debt announcement returns. They document insignificant effects of most of the included issuer-specific factors of stock price reactions. By contrast, Lewis, Rogalski, and Seward (2003) show that financial slack and stock price run-up are the only two firm-specific factors that have a significant and positive impact on the announcement return of convertible debt offerings. They document no significant effects of market-to-book, net income/total assets, change in total assets, long-term debt/total assets, firm size, stock volatility, issue size and market return run-up.

Table 2.9 presents the results of two-dimensional clustered standard errors regressions on the three-day (-1, 1) window CAR corresponding to the convertible bond announcement. In this table, I control for firm-specific (firm size, financial leverage, stock run-up, stock return volatility and financial slack), market-specific (market run-up and market return volatility) and bond-specific (issue size and year-to-maturity) characteristics.

In column (1), I find that the CAR is negatively and significantly influenced by firm size, financial leverage, stock run-up, financial slack and year-to-maturity. The negative relation between firm size and the CAR contradicts Chae (2005) and Elliott et al.'s (1984) arguments that larger firms are closely monitored by more analysts and regulators and more likely to have lower asymmetric information problem that may hamper the stock price reactions. However, the negative impact of firm size is consistent with De Jong et al. (2012) who argue that stockholders from smaller companies value convertible bond as a potential financing tool to alleviate high external financing costs. In addition, the negative finding confirms Brennan and Schwartz (1988) explanation that small and high risk companies benefit most for using convertible financing as the firm value is insensitive to the company risk. A more recent study by Dutordoir et al. (2016) provide further confirmation of negative effect of firm size on stock price reaction of convertible bond issuers.

The negative relation between stock price reactions and financial leverage measured by debt/TA is in contrast to rationale of Stein (1992) that a highly leveraged firms issuing convertible bond may signal investors about their future investment opportunities because firms with poor future prospects will choose to forgo new debt issuance. He then argues that the managers from highly leveraged firms particularly those issuing additional debt provide strong signal that firms are capable to fulfil the contractual commitment of debt. By contrast, the negative impact of financial leverage on the stock price reactions following the announcement of convertible bond is consistent to Jung and Sullivan (2009)ǿs explanation that an additional increase of financial leverage to the existing leverage may exacerbate the financial risk of firm particularly the costs of financial distress.

According to Lewis, Rogalski, and Seward (2003) convertible issuers with substantial increase in pre-issue stock run-up are more likely to face higher equity related financing costs and particularly they find that this relation holds strongly for hedge-like issuers and hot issue period. Dutordoir and Gucht (2007) suggest that firms with higher pre-issue stock run-up are perceived to be overvalued when issuing a convertible bond. Similarly, Li, Liu, and Siganos (2016) find that non-financials issuers are more likely to time the issuance of convertible bond when their stocks are overvalued. The negative impact of stock run-up I presented in Table 2.9 supports these explanations.

In line with Lewis, Rogalski, and Seward (2003, 1999), I include financial slack as a proxy for equity-related financing costs faced by convertible bond issuers. I find that financial slack has a significant negative impact on stock price reaction. Relying on the adverse selection costs explanation by Myers and Majluf (1984), Duca et al. (2012) and De Jong et al. (2012) point out that firms with high financial slack issuing convertible debt is an indication that the firms are overvalued and more negative impact on stock price reactions are expected. However, Lewis, Rogalski, and Seward (2003) find positive impact of financial slack on share price reactions of U.S. convertible issuers and they suggest that investors view firms offering convertible bond as a good news.

Short-term debt provides lenders with an effective tool to monitor managersô behaviour and deter adverse asymmetric information (Datta, Iskandar-Datta, and Raman, 2005; Rajan and Winton, 1995). On the other hand, lenders have weak control rights on longer term debt (Rajan and Winton, 1995). Thus, this explanation yields a prediction that issuers of shorter debt maturity offerings are associated with less adverse impact on their stock price reactions.

CAR is positively and significantly influenced by market run-up. Market run-up measures the overall market and economic conditions prior to the securities offerings by firms. Consistent to Choe, Masulis, and Nanda (1993), market expansions are associated with more profitable growth opportunities and lower the adverse selection costs. Moreover, Lewis, Rogalski, and Seward (2003) find that hedge-like convertible issuers and convertible issuance during hot issue periods experience less negative stock price reactions during market expansions period as indicated by higher market run-up. Furthermore, Li, Liu, and Siganos (2016) provide consistent finding that convertible issuer are more likely to issue convertible bond during positive market condition. However, Lewis, Rogalski, and Seward (2003) document no significant impact of market run-up in the full sample, suggesting that stock price reactions following convertible bond issuance is not affected by the market conditions. I do not find any significant impact of stock return volatility, market return volatility and issue size on the CAR.

In Column (2), I include two-digit SIC industry dummies and obtain consistent findings. In Column (3), similar findings as in Column (1) and (2) continue to hold with the inclusion of year dummies. The only difference is that financial leverage has a significant coefficient and market return volatility is reported with a positive and significant coefficient. In Column (4), I report consistent findings as in Column (3) after including both year and industry dummies. In addition, financial leverage enters significantly negative. Stock return volatility and firm size consistently show insignificant impact on the CAR.

In terms of economic effects based on Column (4), a one standard deviation (2.11) increase in the firm size is associated with a decrease in stock price reaction of 0.563%. A one standard deviation (0.44) increase in firm leverage is associated with 0.240% negative stock price reaction. The coefficient on stock run-up is ī 0.014(t= ī 5.826), indicating that a one standard deviation (51.95 in percentage points) increase in the stock run-up of a firm is associated with a decrease in the stock price reaction of ī 0.014%. I find that market run-up is positively related to stock price reaction, with a one standard deviation (21.35 in percentage points) increase in market run-up results in an increase in stock price reaction of around 0.3%. I also verify that financial slack is negatively related to stock price reaction. Specifically, a one standard deviation (0.59) increase in financial slack leads to decline in stock price reaction of 1.05%. I also show that a one standard deviation (0.62) increase in years-to-maturity results in a decline in stock price reaction by 0.9 percentage points. Taken together, I find that a one standard deviation change in financial slack has the highest economic impact on stock price reaction.

In summary, firm size, financial leverage, stock run-up, market run-up, market return volatility, financial slack and year-to-maturity are the main explanations to the stock-price reactions relative to convertible bond announcement. Typically, the inclusion of both year and industry dummies are important to address time-series dependence and cross-sectional dependence.

2.7.5 Regression results of determinants of stock price reactions around convertible bond announcements between financials, industrials and utilities issuers.

In this section, I explore the differences of determinants of stock price reactions relative to convertible bond offerings between financials, industrials and utilities issuers. Table 2.10 reports the results of regression analysis of CARs and its potential determinants separately for financials, industrials and utilities issuers. Linn and Pinegar (1988) and Eckbo and Masulis (1992) point out that stock prices across financials, industrials and utilities react differently when issuing preferred stock. They rule out that the differences are due to information effects faced by industrial issuers and tax benefits and regulatory conditions faced by financials and utilities issuers. Eckbo and Masulis (1992) also highlight that stock prices react differently between industrials and utilities issuers in response to seasoned common stock offerings. They argue that utilities issuers are less likely to experience adverse selection risk as they are highly regulated than industrials firms are more likely to take advantage during good market conditions. Their regression results show that the firmφs abnormal stock return of industrials is significantly and negatively affected by stock run-up and positively influenced by the marketφs ex ante assessment of the probability of an equity issue. Abnormal stock return of utilities issuers are negatively associated with firm size, stock volatility, stock run-up, probability of an equity issue and share-concentration.

Stock run-up and year-to-maturity have statistically significant negative coefficients, while market run-up appears significantly positive related to stock price reactions in financials, industrials and utilities samples. Consistent to Eckbo and

Masulis (1992), the negative impact of stock run-up shows that industrial issuers are more likely to gain from market timing than financial and utility issuers. In addition, I find that industrial issuers suffer more negative stock price reactions for issuing a longer maturity term convertible bond than more regulated financial firms and utility firms. The negative effect of maturity is consistent to Datta et al. (2005) and Rajan and Winton (1995) explanations that a shorter debt maturity offers lender a better monitoring. The positive market run-up evidence suggests that utilities gain more than financial and industrial issuers gain the least in time of market expansions.

I find that firm size and financial leverage have statistically significant negative coefficients in the financials and industrials sample but appear insignificantly in the public utility sample. Based on the magnitude of firm size, industrial issuers show more negative stock price reactions than financial issuers and this evidence confirms the argument by Linn and Pinegar (1988) that financial firms are highly regulated and face less asymmetric information. The negative impact of financial leverage confirms Jung and Sullivan (2009)ôs explanation that firms are likely to suffer more costs of financial distress when taking an additional debt in considering the financial risk of repayment. Clearly, financials issuers tend to have more negative market reaction for an additional increment in financial leverage.

Furthermore, the stock price reactions of industrial issuers are also significantly positively associated with market return volatility and negatively associated with financial slack. The positive impact of market return volatility implies that industrial issuers during high market volatility experience less asymmetric information in issuing convertible bonds. The negative financial slack confirms that industrial issuers with high financial flack are likely to have overvalued stocks (see Duca et al., 2012; De Jong et al., 2012).

As for the financials sample, I find that stock run-up is the one variable with significant at least 5%, suggesting that a one standard deviation (44.5%) increment is associated with a decline in stock price reaction of 1.02%. In the industrials sample, I find that financial slack has the most economic impact on the stock price reaction. A one standard deviation (0.63) increase in financial slack leading to 1.2% reduction in stock price reaction. While, I reveal that market return volatility has the smallest absolute economic impact on the CARs of issuers. A one standard deviation (0.48) increase in market return volatility is associated with an increase in issuers' CARs by 0.55%. Turning to utilities sample, I find that stock run-up, market run-up and maturity have economic impact on the CARs of issuers. A one standard deviation (51%) increase in stock run-up is associated with reduction in the stock price reaction of 0.92%. I find that a one standard deviation (21.3%) increase in market run-up results in 0.62% positive reaction of stock prices. A one standard deviation (0.68) increase in maturity would imply, on average, a 0.68 reduction in stock price reaction.

The results in this section clearly show that the CAR following convertible bond announcements are explained differently in terms of firm-specific, market-specific and bond-specific characteristics depending on the industry of the issuing firm.

2.7.6 Regression results of determinants of stock price reactions of industrials issuers around convertible bond announcements in main regions.

Kim and Weisbach (2008) and Henderson, Jegadeesh, and Weisbach (2006) argue that the pattern of securities offerings differ significantly across Asia excludes Japan, Japan, Australia & New Zealand, Continental Europe, U.K., Latin America, U.S. and Canada. In convertible bond offerings, most of the studies concentrate on the U.S. and relatively few studies explore the regional differences. Dutordoir et al. (2016), however, document significant differences in the stock price reaction in response to convertible bond issuances across Australia, Canada, France, Germany, Japan, Netherlands, Switzerland, U.K. and U.S. Ammann et al. (2006) argue institutional differences are accountable for the differences market reactions between German and Swiss convertible markets upon the announcement of convertible bonds.

In this section, I report regression results in Table 2.11 of determinants of stock price reactions of industrials issuers around convertible bond announcements separately in seven main regions including US, Japan, Canada, UK, AU&NZ, Western Europe and Asia. These regional settings are motivated by Kim and Weisbach (2008) and Henderson, Jegadeesh, and Weisbach (2006) in new securities offerings. Following Dutordoir et al. (2016), Duca et al. (2012) and Lewis, Rogalski, and Seward (2003), I include firm-specific (firm size, financial leverage, stock run-up, stock return volatility and financial slack), market-specific (market run-up and market return volatility) and bond-specific (issue size, and year-to-maturity) characteristics.

I find that the stock price reactions U.S. convertible bond issuers are significantly positively associated with firm size and issue size and negatively associated with stock return volatility. While stock price reactions of Japanese issuers are determined negatively by stock run-up and issue size and positively by market run-up. Canadian issuers with bigger firm size and heavily leveraged firm characteristics are likely to experience more negative and significant stock price reactions. Convertible bond issuers based in the U.K. have their stock prices react significantly and negatively to firm size, stock return volatility and issue size. The magnitude of stock return volatility indicates that U.K. issuers as compared to U.S. issuers suffer more negative announcement returns particularly issuers with highly volatile stocks.

Convertible bond issuers domiciled in Australia and New Zealand region react most negative to market run-up and market return volatility. This may be due to convertible market in this region is still in its infancy growing period as compared to more established and mature Japanese, European and Asian convertible markets. Stock price reactions of issuers in Western Europe are positively associated with issue size and negatively associated with market return volatility. This indicates that European convertible bond issuers can design the ideal size of issuance and avoid placing convertibles during high market fluctuations period. The stock price reactions of Asian convertible bond issuers are positively influenced by financial leverage and financial slack and negatively influenced by firm size, stock run-up and market return volatility.

The most obvious difference is that firm size has significant positive impact on the stock prices of U.S. issuers but appears with negative impact on stock price reactions of convertible bond issuers domiciled in Canada, U.K. and Asia. This suggests that smaller firms in Canada, U.K. and Asia tend to value more from convertible financing. Another notable difference is that Canadian issuers with high in financial leverage are likely to experience more negative stock price reactions but highly leveraged Asian issuers enjoy positive announcement returns. In addition, I find that Asian issuers with high in financial slack tend to experience more positive stock price reactions. One last notable difference is that convertible bond issuers in U.S. and Western Europe report positive impact of issue size while issuers in Japan and U.K. exhibit negative impact of issue size on the stock price reactions. Taken together, the observed different patterns across regions are not surprisingly because different regions show remarkable different level of convertible market development, corporate governance practices and investor protection.

The inclusion of both East-Asian (China, Japan, South Korea, Taiwan and Hong Kong) and Anglo-Saxon (U.K., U.S., Canada, New Zealand, Australia and Ireland) regions are for robustness comparison purposes. In East-Asian region, firm size and stock run-up are significantly negatively associated with CAR while market run-up appears with significant and positive coefficient. In contrast, the CAR of Anglo-Saxon region is negatively explained by firm size, financial leverage, stock run-up, financial slack and issue size and positively explained by market return volatility and issue size. This suggests that convertible bond issuers domiciled in Anglo-Saxon region have their stock prices react not only to firm- and market-specific as exhibited in East-Asian but also respond to bond-specific characteristics.

In the US region, I find that market volatility has the highest economic impact on the CARs of issuers. A one standard deviation (1.75) increase in market volatility results in 1.08% negative stock price reaction. Issue size ranks second with a one standard deviation (1.84) increase in proceeds is associated with an increase of CARs of 1.07%. In Japan region, I find that stock run-up would have the most economic impact on the issuers' CARs. A one standard deviation increase in stock run-up is associated with a decrease in the stock price reaction of 0.6%. In Canada, firm size and financial leverage are the only two significant determinants of stock price reactions of convertible bond issuers. Economically, a one standard deviation increase of both firm size (2.15) and firm leverage (2.15) would imply 3.8% and 3.0% decrease in stock price reactions, respectively. In the UK region, I find that a one standard deviation (2.41) increase in the firm size is associated with -4.28% change in the CARs of issuers. I also find that a one standard deviation increase in stock volatility may result in -3.0% change in stock prices of the issuing firms. In Australia and New Zealand region, I find that a one standard deviation (0.63) increase in market volatility is associated with 8.87% decline of issuers' CARs. In European region, I find that issue size is the only significant determinant with an economic impact of one standard deviation increase in size of offerings implies an increase in issuers' CARs by 0.26%. In Asian region, I find that firm size, financial leverage and stock run-up are the only significant determinants that have economic impact on the CARs of convertible bond issuers. In particular, a one standard deviation increase in firm size (1.84), leverage (0.65) and stock run-up (62.4%) implies a change of stock price reaction by -1.04%, 0.65% and -0.87%, respectively. In East Asian region, I find that stock run-up has the highest economic impact, with a one standard deviation increment leads to a reduction in CARs by 0.82%. While, I find that financial slack tends to have the greatest economic impact on the CARs of issuers in Anglo-Saxon region. In particular, a one standard deviation increase in financial slack implies a decrease in CARs of 1.5%.

2.7.7 Regression results of determinants of stock price reactions of industrials issuers around convertible bond announcements between different time periods.

In Table 2.12, following Duca et al. (2012), I report regression analysis on whether the determinants of stock price reaction of industrials issuers around convertible bond announcements vary across different time periods. Duca et al. (2012) argue that the stock price reactions relative to US convertible offerings vary significantly over three main sample period of the Traditional Investor period (1984-1999), Arbitrage period (2000-September 2008) and Post Lehman period (September 2008-December 2009). In particular, they argue that price pressure resulting from the hedging transactions by convertible arbitrageurs is the main reason why convertible bond issuers during Arbitrage period experience more negative market reactions than the Post Lehman period. They further argue that the short-selling induced price pressure impact due to convertible arbitrage funds remains as a significant explanation to why convertible bond issuers during Post Lehman period suffer even more negative announcement effects. According to Duca et al. (2012), the short-lived downward stock price pressure is due to short-selling activities created by convertible bond buyers who buy convertibles and short the underlying stocks. However, they do not extend the empirical analysis to explore the potential determinants of CARs over different sample periods. The financial crisis 2007/2008 has seen a number of big investment banks bankruptcies and restructuring and newly devised corporate governance policies imposed by most regulators globally (Beber and Pagano, 2013; Humphery-Jenner, Karpavicius, and Suchard, 2018). Humphery-Jenner et al. (2018) highlight that these major corporate events could have significantly influenced the global securitization issuance. However, Carbó-

Valverde, Cuadros-Solas, and Rodríguez-Fernández (2017) find that the financial crisis is unlikely to influence their main findings of the determinants of reputable underwriters in European debt markets. This section adds to this literature to show whether the potential explanation of CAR vary across different sample time periods.

I find that the stock price reactions during 1984-1989 are influenced positively by market run-up and market return volatility and negatively by financial leverage, stock run-up, stock return volatility, issue size and time-to-maturity. This period gives issuers more choices to design the best features of convertible bonds and best market timing to place them in the market. During 1990-1994 period, the stock prices react significantly negatively to firm size and stock run-up and positively to market return volatility and issue size. This suggests that the potential determinants of stock price reactions following convertible bond offerings differ remarkably from those of 1980s period.

In 1995-1999 period, the market specific factors do not have any impact on the CAR in response to convertible bond announcements. I find that financial leverage has significant and positive impact while stock return volatility and year-to-maturity have negative impact on the stock prices of issuers. In addition, I find that a highly leveraged firm in this period is likely to experience more favourable stock price reaction. Turning to 2000-2004 period, the stock prices of convertible bond issuers again react differently. In particular, stock-run up, stock return volatility and year-to-maturity appear with significantly negative and market return volatility appears with positive coefficient. At the same period, convertible bond issuers are more likely to gain more due to better economic and market condition. However, issuers with high stock volatility are likely to suffer more negative stock price reactions.

Stock price reactions around convertible bond announcements during 2005-2009 period are negatively related to firm size, stock run-up, financial slack and year-to-maturity. In this period, I show that bigger firm and firm with high in financial slack prior to issuance are likely to suffer more negative stock price reactions than other periods. In 2010-2016 period, stock prices of firms issuing convertible bonds are negatively influenced by firm size, financial leverage, stock return volatility and year-to-maturity. One notable difference is that issuer issuing convertible bond with longer maturity in this period is likely to suffer greater negative stock price reactions than those of in other sample periods.

In the column (7), I find that firm size, financial leverage, stock run-up, financial slack and year-to-maturity have significantly and negatively explanatory power on the stock price reactions. While, market run-up reports significantly positive coefficient. The magnitude of dummies for 1990-1994 and 1995-1999 are reported much lower than magnitude reported for 2000-2004 and 2005-2009 dummies. The magnitude of 2010-2015 dummy is greater than 1990s dummies but lower than 2000s dummies. This finding may possibly in line with Duca et al. (2012) explanation that arbitrage induced short selling is the main explanation to why announcement return of convertible bond differs substantially between traditional, investor and post Lehman period.

One of the most obvious differences between pre-crisis in column (8) and post-crisis column (9) of Table 2.12 is that smaller firms issuing convertible bonds after 2007/2008 financial crisis tend to experience more favourable stock price reactions in comparison to issuers with larger firm size. This finding is expected as larger firms with better credit rating tend to perform better by using straight debt to prevent potential equity dilution and asymmetric information problem. Another notable difference is that issuers with higher financial leverage are generally have higher probability of default risk tend to experience more negative stock price reactions after financial crisis. Pre-crisis period, convertible bond issuers could obtain more favourable stock price reactions during market higher market-run and higher market volatility but this effect disappears in the post-crisis. I find that issuers with greater financial slack and longer maturity bonds are more likely to suffer more negative stock price reactions in the post-crisis period. This could be due to the potential indication of stock overvaluation of higher financial slack and monitoring problem over bonds with longer maturity period by underwriters.

In pre-crisis period, stock run-up has the highest economic effect on the CARs. A one standard deviation increase in stock run-up is associated with 0.79% decline in CARs of issuers. While, financial slack shows the lowest impact, with a one standard deviation increase in financial slack is associated with a decline in CARs by 0.37%. In post-crisis period, firm size has the greatest economic impact on the CARs, with a one standard deviation increase in firm size leading to 1.44% decline in stock prices of convertible bond issuers. However, stock run-up records the lowest impact. A one standard deviation increase in stock run-up would imply a 0.63% decrease in stock price reaction.

2.7.8 Regression results of the relation between country level factors and stock price reactions of industrials issuers around convertible bond announcements.

In this section, I examine whether country level factors have some power in explaining the stock price reactions of industrials issuers following the convertible bond offerings. Thus, in Table 2.13 I report the regression results of the relation between country level variables and stock price reactions of industrial issuers around convertible bond announcements.

For instance, De Jong et al. (2012) argue that short selling by convertible arbitrageurs is the main culprit of creating more negative stock price reactions on convertible issuers in countries without imposing short-sale bans. Following Bayless and Chaplinsky (1996) argument that stockholders react more favourable for SEO offerings during hot equity windows, Dutordoir and Gucht (2007) show that hot convertible markets are associated with positive growth of leading economic indicator, lower financing costs and lower Treasury bill yields. The stockholder reaction to convertible bond announcements are positively related to growth of economic leading indicator and insignificantly correlated to TB yields. Moreover, De Jong et al. (2012) suggest that convertible bond issuers face less negative stock price reactions in a country with better developed financial market. Furthermore, Graham, Leary, and Roberts (2014) find that government debt has negative impact on the corporate debt. Additionally, Badoer and James (2016) point out that the supply of government debt could crowd out corporate borrowing.

In Column (1), I find that short-selling bans significantly and negatively affects CAR which is consistent with Beber and Pagano (2013) that short-selling bans worldwide are associated with a decline in stock returns. In addition, Beber and Pagano (2013) show that short-selling bans are detrimental for stock liquidity and slower price discovery and fail to support stock prices. This is in contrast to the positive effect of short-sale constraints on convertible bond issuance stock price effects by De Jong et al. (2012) who argues higher involvement of hedge funds in convertible offerings causes downward price pressure. The negative impact of short-sale constraints as compared to the documented positive one by De Jong et al. (2012) are likely explained by different sample size, and sample period. In this study, my sample period and size are 1985-2015 and 6,073, are much greater than that of De Jong et al. (2012) with 1990-2009 period and 4,103. Furthermore, I use various comprehensive sources of measuring short-sale bans across worldwide including Beber and Pagano (2013).

In Column (2), the coefficient of GDP is negative and significant at 1% level. This indicates that convertible issuers domiciled in a country with higher GDP tends to suffer more negative stock price reaction in comparison to a country with lower GDP. In Column (3), I use GDP growth as an alternative measure of overall economic performance. In line with Dutordoir and Gucht (2007), I find that GDP growth positively and significantly affects the stock price reactions. This suggests that firms issuing convertible bond during good economic growth experience more favourable stock price reactions. Consistent with Duca et al. (2012) cross-country studies, in Column (4) I show that CAR is statistically significantly and positively affected by 10 year government bond yield. This suggests that convertible issuers view convertible bonds may serve as an alternative financing tool during high financing cost inflicted by high government bond yield. Dutordoir and Gucht (2007) find no relation to Treasury bill yields in their U.S. sample.

In Column (5), I find that coefficient of stock market capitalization is positive and significant, which is consistent with empirical evidence presented by De Jong et al. (2012). In Column (6), I show that government debt is negative associated with CAR of convertible offerings. According to Friedman (1978), government debt could have significant change on the assets returns depending on the relative substitutability of assets in investorǿs portfolio. Graham, Leary, and Roberts (2014) argue that corporate debt has the closer substitutes for government debt and is expected to react more strongly to the supply of government debt. They show that government debt is strongly negatively correlated with corporate debt. Furthermore, Badoer and James (2016) find that changes in the in the supply of long-term government bonds affect the overall corporate borrowing. In light with these arguments, I show that government debt undeniably has a significant negative impact particularly on the stock price reactions of convertible bond issuers during the announcements of convertible bonds.

In terms of economic effects, GDP has the higher impact while short-selling ban has the lowest impact on the CARs of issuing firms. In particular, a one standard deviation increase in GDP (1.30) and Short-selling ban (0.08) is associated with a decline in stock price reaction of 1.33% and 0.17%, respectively. Additionally, I find that other country-level variables have significant economic impact on the CARs of convertible bond issuers. In particular, a one standard deviation increase in GDP growth, government bond yield, stock market capitalization and government debt is associated with a change in stock prices of issuers by 0.45%, 0.37%, 0.34% and -0.56%, respectively.

2.7.9 Regression results of the relation between investor protection and stock price reactions of industrials issuers around convertible bond announcements.

In this section, I examine whether convertible bond issuers in countries with better investor protection and effective legal enforcement have their stocks react less negatively to the convertible bond offerings. La Porta et al. (2000) highlight that investor protection for both creditors and shareholders is important to encourage the development of financial markets. In particular, La Porta et al. (1997) show that countries with better protection of creditor rights have large credit markets, while countries that protect shareholders have more valuable stock markets. Moreover, La Porta et al. (2002) find evidence of higher valuation of firms in countries with better shareholder rights protection. In a similar vein, Djankov, McLiesh, and Shleifer (2007) show that legal creditor rights are important determinants of private credit development in 129 countries. La Porta et al. (2000) also point out that the effectiveness of the enforcement for the written rights for both shareholders and creditors is key to reinforce the investor protection. In Table 2.14, I report the regression results whether investor protection matters for stock price reactions relative to convertible bond announcements.

Column (1) shows that shareholder protection measured by the antidirector rights index of La Porta et al. (1998) has a negative effect on CARs and this effect is statistically significant. However, Spamann (2010) argues that the original antidirector rights index suffers shortcomings of conceptual obscurities and outright mistakes in coding protocol. To address these concerns, in Column (4), I use the revised antidirector rights index of Djankov et al. (2008). As predicted, investor protection measured by antidirector rights has positive effect on stock price reaction and its effect is significant at 1% level. Consistently, a related study by Lee, Lee, and Yeo (2009) document that the investor reaction to convertible issuance is positively associated with shareholder rights.

In Column (2), as expected I find creditor rights index of La Porta et al. (1998) has a positive coefficient on CARs and the effect is statistically significant. Similarly, the positive effect of creditor right protection remains unchanged when I use creditor right index of Djankov et al. (2007). Column (3) shows that the CAR is negatively and significantly influenced by legal enforcement. Contrary to my expectation, the negative effect of legal enforcement implies that a country with a better legal enforcement leads to more negative stock price reactions surrounding the convertible bond offerings. However, the counterintuitive evidence of legal enforcement I leave for future research to construct a better indicator of measuring the effectiveness of legal enforcement as it is not the aim of this study to further investigate this issue.

In terms of economic interpretation, a one standard deviation increase in legal enforcement (1.24), Antidirector rights of Djankov et al. (2008) (0.85) and Creditor rights of Djankov et al. (2007) (0.86) is associated with a change of stock price reaction by -0.62, 0.43 and 0.77%, respectively.

2.7.10 Regression results of the relation between convertible bond specific factors and stock price reactions of industrials issuers around convertible bond announcements.

In this section, I explore the possible determinants of stock price reactions from the convertible bond characteristics. For instance, Lewis, Rogalski, and Seward (1999) suggest credit quality rating of issuers is one of the important driving factors of stock price reactions. However, its impact in the literature of convertible bond event studies remains mixed (see Lewis, Rogalski, and Seward, 1999; Jen, Choi, and Lee, 1997; Mikkelson and Partch, 1986). According to Duca et al. (2012) a convertible bond with a high conversion premium is assumed to be less equity-like and lead to less negative stockholder wealth effects. Alternatively, De Jong et al. (2012) and Ammann, et al., (2006) suggest high in Delta convertible bond is likely to experience more negative stock price reactions. In addition, Stein (1992) document that a convertible bond offering with call provision is likely to face less negative price reactions. Yasuda (2005) suggests that first-time issuers and issuers offer higher yields bond offerings are more likely to face more informational sensitivity. As evidenced in Fields and Mais (1991) and Li, Lin, and Tucker (2016), privately placed convertible bonds may have positive or negative impact on market reactions. Godlewski (2014) empirically shows that bank loans with multiple tranches offerings have positive impact on stock market reaction but its effect in convertible bond offerings remains unexplored. Lastly, Dutordoir et al. (2016) point out that the stated use of proceeds may have significant impact on the stock price reactions.

In Table 2.15a and Table 2.15b, I present regression results for 15 convertible bond specific factors on the stock price reaction to convertible offerings by industrial issuers. In Column (1), the coefficient of S&P rating measured with 1 for AAA rating and a consecutive number for the following lower rating, is negative and significant implying that the convertible issuers with lower credit rating experience negative stock price reaction. Consistent with Myers and Majluf (1984) prediction that the price response to security offerings depends on the sensitivity of the value of the new securities relative to firm value, in Column (2), the issuers with investment grade rating tend to have less stock price reaction. Consistently, Lewis, Rogalski, and Seward (1999) empirically show that issuers with speculative grade credit quality suffer a more negative investor reaction. By contrast, Mikkelson and Partch (1986) and Jen, Choi, and Lee (1997) find that market reacts more favourably for convertible issuers with lower credit ratings. Jen, Choi, and Lee (1997) suggest that the convertible debt offering benefits firms not only to alleviate equity overpricing but to reduce information costs and to protect firmôs growth opportunities.

Column (3) presents an insignificant coefficient of conversion premium. Duca et al. (2012) and Chang, Chen, and Liu (2004) also present insignificant findings of conversion premium on the CAR. In Column (4) I use DELTA to measure the sensitivity of convertible bond to its underlying common stock. A higher value indicates a larger equity component. Consistent with my prediction, I observe that DELTA has a significant negative impact, implying that equity-like convertible bond experience more negative stock price reactions. This finding is consistent with European convertible studies (see Ammann, et al. 2006; De Jong et al. 2012).

In Column (5), I find that first issue dummy is insignificant, suggesting that issuers issuing convertible bond for the first time in comparison to seasoned issuers do not suffer more negative stock price reaction.

In Column (6), the non-callable dummy is negatively and significantly associated with the CAR, suggesting that issuers issuing non-callable convertible bond are more likely to have more negative stock price reactions. This is consistent with Stein (1992) rationale that a call provision enables early forced conversion and entails less adverse price impact. Years to call protection and gross spread in percent presented in both Column (7) and (8) do not significantly impact CARs. In contrast, Stein (1992) predicts a negative impact of call protection on the stock price reactions.

The yield-to-maturity is examined in Column (9) and has an insignificant impact on CARs. By contrast, the coefficient for coupon rate in Column (10) is significantly negative, indicating that stock price reacts more negatively for convertible bond with higher coupon rate. Investors are more concerned with the interest income earned annually based on convertible bondós face value rather than the estimated rate of return of convertible bond until maturity date. This is accentuated by the fact that higher coupon rates are required by debtholders to compensate for growth firms with high in default risk (see Jen, Choi, and Lee, 1997).

The question whether private placed convertible bond entails less stock price reaction in comparison to publicly offered convertible bond is answered in Column (11). From a cross-country perspective, convertible bonds offered under private placements show significant negative impact on CAR. The is inconsistent with country level studies particularly focusing in the context of US, Fields and Mais (1991) report positive market reaction of privately placed convertible bonds while Li, Lin, and Tucker (2016) present negative effect. In the similar vein, Abhyankar and Dunning (1999) find that private placement in comparison to rights offerings entail more negative UK convertible market reactions.

In Column (12), I find that multiple tranches dummy of convertible bond offerings has positive and significant impact on stock price reactions. This evidence adds to convertible bond literature and supports Maskara (2010) argument that multiple tranches offerings of syndicated loans create economic value and offer benefits particularly riskier borrowers in alleviating the adverse selection effects and potential credit risk diversifications. Godlewski (2014) documents a positive link between bank loans tranches and stock market reaction.

In Column (13), I find that the dummies of acquisition, capital expenditure, general corporate purposes, others, debt refinancing and working capital have insignificant impacts on stock price reactions relative to convertible bond offerings. Mikkelson and Partch (1986) also find insignificant corporate purposes dummies in their regressions. Moreover, the debt refinancing dummy is also insignificantly related to the stock price reaction to convertible issuance (see Chang, Chen, and Liu, 2004; Davidson, Glascock, and Schwartz, 1995; Hansen and Crutchley, 1990).

In terms of economic significance, delta has the greatest economic impact on the CARs of issuers, with a one standard deviation (0.41) rise leads to a decline in stock price reaction by 0.68%. on the other hand, I find that multiple tranches dummy records the smallest economic impact with a one standard deviation (0.23) increment is associated with a change of stock price reaction by 0.16%.

2.7.11 Multilevel regression results of the relation between country level factors and investor protections on stock price reactions of industrials issuers around convertible bond announcements.

In this section, I provide a robustness check on the country level and investor protection factors on stock price reactions by using multilevel regression. Due to the presence of both firm-level variables and country-level variables, I employ multilevel regression to check the robustness of regression results obtained from cross-sectional regression analysis presented in section 2.7.8 and section 2.7.9. Shariff, Wiwad, and Aknin (2016) use the multilevel modelling to account for both individual-level and country-level to examine the income mobility and tolerance for inequality across different countries. Both Table 2.16 and Table 2.17 report the estimation results of multilevel regression for country level factors and investor protection variables on the stock price reactions, respectively. The findings show that the sign and statistical significance of the coefficients are similar to those of Table 2.13 on country-level factors and Table 2.14 on investor protection variables.

2.8. Conclusion

This chapter aims to be descriptive and exploratory. I review the stock price reaction and its potential determinants related to convertible bond offerings and empirically explore the effect of stock price reactions following convertible bond offerings across different regions, different industrial classifications and different purposes of convertible bond offerings.

From the review, I find that convertible bond issuers react differently to either positively or negatively to the announcements of convertible bond in different countries. In particular, Dutordoir et al. (2016) and Ammann et al. (2006) are the only two related studies which document that convertible bond issuers in different countries experience different stock price reactions. The determinants of stock price reactions between different industrial categories, different main regions and different time periods in respond to convertible bond offerings are largerly underexplored. In addition, the question of whether stock price reactions are significantly explained by a comprehensive set of country level factors, investor protection and convertible bond specific factors remains as a gap. Thus, this chapter serves to provide answers to the research questions.

I find that firms domiciled in Asia and Australia & New Zealand regions experience significantly positive stock price reactions following the announcements of convertible bond issuance. By contrast, convertible bond issuers from Japan, Europe, U.K., Canada and U.S. report significantly negative stock price reactions. This result highlights that shareholders of firms issuing convertible bond in the U.S. generally suffer more negative returns as compared to other regions. Furthermore, I show that stock prices of convertible bond issuers react differently to different industrial categories and purpose of convertible bond offerings in different regions. This finding highlights that the differences of stock price behaviour around convertible bond announcements could be due to firm-characteristics, market-characteristics or convertible bond design characteristics.

Using of two-dimensional clustered standard errors regression by firm and year Petersen (2009), I find that firm size, financial leverage, stock run-up, financial slack and year-to-maturity have negative explanatory power on the stock price reactions. On the other hand, market run-up and market return volatility have a positive impact on the stock price reaction to convertible bond issuance. Stock return volatility and relative size of issuance do not have any influential impact on the announcement return.

Further empirical analysis reveals that stock run-up, market run-up and maturity have significant impact on the stock price reactions of utility issuers. While, stock price reactions of financial issuers are determined by firm size and leverage other than that those explain for utility. Moreover, I show that market return volatility and financial slack are two additional determinants of stock price reactions for industrial firms. This suggests that utility issuers can only exploit benefits of offerings from the lens of stock run-up, market run-up and maturity, while financial particularly industrial issuers have more choices to decide the best convertible bond offerings.

In the context of regional comparison, I find that stock price reactions for issuers domiciled in different regions are explained differently by the firm-specific, market-specific and bond-specific factors. In particular, I find that the U.S. issuers react positively to firm size and issue size and negatively to stock return volatility. While stock prices of Japanese convertible issuers are negatively explained by stock run-up and issue size and positively explained by market run-up. In addition, I find that issuers in Anglo-Saxon region react significantly not only to firm- and market-specific as recorded for Asia region but also respond significantly to bond-specific characteristics. The results have important implications to the issuers in these dominant regions to gain benefits from convertible bond offerings.

In further regression analysis, I find that the firm-specific, market-specific and bond-specific factors are the potential determinants of stock price reactions but differ remarkably over time period. For example, I show that the negative impact of firm size in 2005-2016 is more than three times than that of recorded in 1990-1994. I also find that financial leverage appears to have positive impact in 1995-1999 but its impact reverses to negative in 2010-2016. Moreover, I document that year-to-maturity has an increasing negative impact on the stock price reactions. This result suggests that stock prices of convertible bond issuing firms in different time period react differently to firm-specific, market-specific and bond-specific factors.

I document that convertible bond issuers experience favourable stock price reactions in countries with high economic growth, high government bond yield and better stock market capitalization. By contrast, I find that convertible bond issuers experience more negative stock price reactions for countries that prohibit short selling activities, greater size of economic and large government debt. Moreover, I show that convertible bond issuers respond more favourably in countries that provide better investor protection for both creditors and shareholders. However, effectiveness of legal enforcement presents a rather counterintuitive negative evidence on the stock price reactions.

From the convertible bond characteristics, I find that firms with better credit rating particularly investment grade tend to experience more favourable stock price reactions. Moreover, multiple tranche offerings perform better due to less adverse selection effects and prospective credit risk diversifications. In contrast, I document that stock price reactions with respect to convertible bond offerings are negatively associated with equity-like and non-callable features. Private placement and high coupon rate convertible bond offerings are negatively associated with stock price reactions. I find no relation between stock price reactions and other bond specific factors including conversion premium, first issue, year-to-call protection, gross spread, yield-to-maturity and purposes of issuance. This result provides further information to convertible bond issuers to carefully design the best features of convertible bond offerings that can enhance wealth of shareholders and alleviate asymmetric information.

Taken together, the evidence presented in this chapter shows that firm-specific, market-specific and issue-specific factors can explain why different stock price reactions of convertible bond issuers are documented across different regions, different industrial classifications and different purpose of offerings. However, these potential determinants vary remarkably across different industrials classifications, different time period and different regions. This result provides important knowledge for convertible bond issuers to study the firm-specific, market-specific and issue-specific factors that can enhance wealth effect of shareholders and overcome unnecessary asymmetric information.

Table 2.1: Summary of the market reaction results and methods of issuance of convertible bonds announcements.

Author(s)	Country	Sample period	Sample size	Event window	CAARs (%)	Method of issue
Dann and Mikkelson (1984)	US	1970ï 1979	132	(ī 1,0)	ī 2.31***	FC
			38	(ī 1,0)	ī 1.23	R
Eckbo (1986)	US	1964ï 1981	53	(ī 1,0)	ī 1.90***	FC
			14	(ī 1,0)	ī 0.77	R
Mikkelson and Partch (1986)	US	1972ï 1982	33	(ī 1,0)	ī 1.97***	FC
Janjigian (1987)	US	1968ï 1983	234	(ī 1,0)	ī 1.71***	FC
Hansen and Crutchley (1990)	US	1975ï 1982	67	(ī 1,0)	ī 1.45***	FC
Long and Sefcik (1990)	US	1965ï 1984	134	(ī 1,0)	ī 0.61***	N
Billingsley, Lamy, and Smith (1990)	US	1971ï 1986	104	(ī 1,0)	ī 2.04***	PO
Fields and Mais (1991)	US	1970ï 1987	61	(ī 1,0)	+1.80**	PV
Kim and Stulz (1992)	US	1965ï 1987	166	(ī 1,0)	ī 0.47***	PO
Davidson, Glascock, and Koh (1993)	US	1980ï 1985	146	(ī 1,0)	ī 1.44***	N
Asquith (1995)	US	1980ï 1982	183	(0)	ī 1.03***	N
Davidson, Glascock, and Schwartz (1995)	US	1980ï 1985	118	(ī 1,0)	ī 1.40***	N
Jen, Choi, and Lee (1997)	US	1976ï 1985	158	(ī 1,0)	ī 2.15***	PO
Lewis, Rogalski, and Seward (2003)	US	1978ï 1992	588	(ī 1,0)	ī 1.09nr	PO
Marquardt and Wiedman (2005)	US	2000ï 2002	207	(ī 1,0)	ī 5.50***	PO+PV
Jung and Sullivan (2009)	US	1985ï 2003	790	(ī 2,0)	ī 2.49***	PO
Duca, Dutodoir, Veld, and Verwijmeren (2012)	US	1984ï 1999	727	(ī 1,1)	ī 1.69***	PO+PV
		2000ï 2008	645	(ī 1,1)	ī 4.59***	PO+PV
		2008ï 2009	64	(ī 1,1)	ī 9.12***	PO+PV
Dutordoir, Li, Liu, and Verwijmeren (2016)	US	1982ï 2012	1,119	(ī 1,1)	ī 3.18***	N
Li, Lin, and Tucker (2016)	US	2005ï 2006	164	(ī 1,1)	ī 2.10***	PV
Li, Liu, and Siganos (2016)	US	1982ï 2013	2,250	(ī 1,1)	ī 2.72nr	PO+PV
		1982ï 2013	317	(ī 1,1)	ī 1.31nr	PO+PV
Kang, Kim, Park, and Stulz (1995)	Japan	1977ï 1989	83	(ī 1,0)	ī 0.22	PO
Christensen, Faria, Kwok, and Bremer (1996)	Japan	1984ï 1991	35	(ī 1,0)	ī 0.60	PO
Kang and Stulz (1996)	Japan	1985ï 1991	561	(ī 1,1)	+1.05***	PO
Cheng, Visaltanachoti, and Kesayan (2005)	Japan	1996ï 2002	172	(0,1)	ī 0.92***	PO
Dutordoir, Li, Liu, and Verwijmeren (2016)	Japan	1982ï 2012	1,806	(ī 1,1)	ī 0.80***	N
Magennis et al. (1998)	Australia	1986ï 1995	45	(ī 1,1)	ī 1.08nr	PV+R
Suchard (2007)	Australia	1980ï 2002	58	(0,1)	ī 0.40	R

Table 2.1: (continued)

Author(s)	Country	Sample period	Sample size	Event window	CAARs (%)	Method of issue
Arsiraphongphisit (2008)	Australia	1991ï 2003	43	(ī 1,0)	ī 0.61**	PO
Fenech, Skully, and Xuguang (2014)	Australia	2001ï 2010	37	(ī 1,1)	+0.85	PV
			12	(ī 1,1)	ī 3.31*	R
			30	(ī 1,1)	ī 1.09	PO
Dutordoir, Li, Liu, and Verwijmeren (2016)	Australia	1982ï 2012	198	(ī 1,1)	ī 0.26	PO
De Roon and Veld (1998)	Netherlands	1976ï 1996	47	(ī 1,0)	+0.16	N
Dutordoir, Li, Liu, and Verwijmeren (2016)	Netherlands	1982ï 2012	16	(ī 1,1)	ī 2.06	PO
Abhyankar and Dunning (1999)	UK	1982ï 1996	8	(ī 1,0)	+2.37*	MO
			53	(ī 1,0)	ī 0.95**	R
			47	(ī 1,0)	ī 1.51**	PV
			4	(ī 1,0)	ī 8.27**	OO
Dutordoir, Li, Liu, and Verwijmeren (2016)	UK	1982ï 2012	12	(ī 1,1)	ī 0.30	PO
Burlacu (2000)	France	1981ï 1998	141	(ī 1,0)	ī 0.20***	PO
Dutordoir, Li, Liu, and Verwijmeren (2016)	France	1982ï 2012	72	(ī 1,1)	ī 2.48***	PO
	Germany	1982ï 2012	21	(ī 1,1)	ī 3.01**	PO
Ammann et al. (2006)	Germany	1996ï 2003	34	(0,1)	ī 2.43***	N
	Switzerland	1996ï 2003	49	(0,1)	ī 1.03*	N
Dutordoir, Li, Liu, and Verwijmeren (2016)	Switzerland	1982ï 2012	13	(ī 1,1)	ī 3.01**	PO
Loncarski, Ter Horst, and Veld (2008)	Canada	1991ï 2004	86	(ī 1,0)	ī 0.54*	PO
Dutordoir, Li, Liu, and Verwijmeren (2016)	Canada	1982ï 2012	122	(ī 1,1)	ī 2.25***	PO
Chang, Chen, and Liu (2004)	Taiwan	1990ï 1999	109	(ī 1,1)	+2.02**	PO
Rahim (2012)	Malaysia	1996ï 2009	105	(ī 1,1)	ī 1.67*	PV+R
Wang, Miao, and Wang (2014)	China	2007ï 2012	52	(0)	ī 1.87***	N
Dutordoir and Gucht (2007)	13 W.E.[a]	1990ï 2002	188	(ī 1,0)	ī 1.35***	N
De Jong et al. (2012)	35 countries[b]	1990ï 2009	4,148	(ī 1,0)	ī 0.66***	PO
Liao, Mehdian, and Rezvanian (2016)	16 countries[c]	2010ï 2014	68	(0)	+0.08	PO
Ammann, Blickle, and Ehmann (2017)	18 countries[d]	2009ï 2014	87	(ī 1,0)	+0.29*	PO

Table 2.1: (continued)

Author(s)	Country	Sample period	Sample size	Event window	CAARs (%)	Method of issue

Notes: Abbreviations for methods of convertible bond issuances are used as follows: FC is firm commitment, R is rights, PO is public offering and PV is private placement, MO is mixed offer, OO is open offer, and N indicates that issuance method is not reported by the author. + denotes combines of two or more methods of convertible bonds issuances. [nr] indicates that author do no compare the CAARs to significance level. ***, **, * indicates statistically significant at 1%, 5%, and 10% level, respectively.

[a] refers to a total of thirteen Western Europe countries including Austria, Belgium, Denmark, Finland, France, Germany, Italy, The Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom.

[b] refers Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, China, Denmark, Finland, France, Germany, Greece, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, Norway, Philippines, Poland, Singapore, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, United Arab Emirates, United Kingdom, and United States.

[c] indicates Australia, China, India, and Malaysia categorized as Asia Pacific region. The other twelve countries are from Europe region including Belgium, Britain, Denmark, France, Germany, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, and Switzerland.

[d] denotes the detailed information of the 18 countries included in their study are not provided.

Table 2.2: Methods of convertible bond offerings

	US		Canada		Europe		Japan		AU&NZ		UK		Asia	
Methods of Offerings	Deals	%	Deals	%	Deals	%	Deals	%	Deals	%	Deals	%	Deals	%
Accelerated Bookbuilt	5	0.12			33	6.51			5	1.81	3	4.76	6	0.62
Best Efforts	32	0.79	75	10.96	53	10.45			25	9.03	2	3.17	49	5.07
Block Trade									1	0.36				
Bought Deal	5	0.12	390	57.02	1	0.20	1	3.85					4	0.41
Firm Commitment	3,866	95.01	113	16.52	144	28.40	12	46.15	38	13.72	23	36.51	674	69.77
Issue for Cash/Subscription									32	11.55				
Issued off MTN programme	1	0.02			18	3.55			3	1.08				
Offer for Sale	4	0.1	1	0.15	122	24.06	8	30.77			22	34.92	2	0.21
Offer for Subscription			1	0.15					5	1.81			17	1.76
Open Offer											2	3.17	8	0.83
Placement	151	3.71	104	15.20	83	16.37	4	15.38	130	46.93	10	15.87	147	15.22
Qualified Institutional Placement													2	0.21
Rights	5	0.12			52	10.26			38	13.72	1	1.59	57	5.90
Third Party Allotment							1	3.85						
Vendor Placing					1	0.20								
Total Disclosed	4,069	92.39	684	88.83	507	38.15	26	0.69	277	61.28	63	22.03	966	24.78
Total Undisclosed	335	7.61	86	11.17	822	61.85	3,751	99.31	175	38.72	223	77.97	2,933	75.22
Total Deals	4,404	100	770	100	1,329	100	3,777	100	452	100	286	100	3,899	100

Source: Thomson Platinum SDC Global New Issues Database

Table 2.3: Total deals of convertible bonds filters.

The table presents sample construction and filtering of deals for a worldwide sample of convertible bond issues. The details of the total deals filters are reported according to seven main regions. Asia consists of China, Hong Kong, India, Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. Western Europe comprises of Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Spain, Sweden, and Switzerland. The third column presents the number of convertible bond announcements obtained from SDC Platinum and any country with fewer than ten deals for the sample period spanning from January 1984 to December 2015 is dropped. The fourth column presents the remaining number of deals after filtering for availability of bookrunners. Next, filters are applied to screen for Issuer/Borrower SEDOL or Issuer/Borrower Ultimate Parentôs SEDOL matching. In sixth column, the sample is then filtered with total return index availability from Datastream. The sample size is then cleaned for multiple tranches offerings. In the last column, the total deals reflect the final sample after screening out insufficient number of stock returns in the estimation period.

No	Region	Raw data of SDC	Filtered for bookrunners	Filtered for Issuer/Borrower SEDOL or Issuer/Borrower Ultimate Parentôs SEDOL matching	Filtered for Total Return Index (RI) availability in Datastream	Filtered for multiple bond tranches	Filtered for insufficient number of stock returns in the estimation period
1	Asia	4,808	2,924	2,774	2,709	2,551	2,534
2	Japan	4,588	3,780	3,686	3,354	2,902	2,867
3	Australia & New Zealand	1,287	452	416	402	358	353
4	Western Europe	3,552	1,334	1,131	1,070	997	989
5	UK	509	287	271	252	247	244
6	US	5,295	4,406	4,100	3,883	3,740	3,677
7	Canada	1,623	771	746	711	692	686
	Total deals	21,662	13,954	13,124	12,381	11,487	11,350

Table 2.4: Total proceeds of convertible bonds filters.

The details of the total proceeds (US$ million) filters are reported according to seven main region. Asia consists of China, Hong Kong, India, Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. Western Europe comprises of Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Spain, Sweden, and Switzerland. The third column presents the raw data of convertible bond announcements obtained from SDC Platinum and any country with fewer than ten deals for a sample period spanning from January 1984 to December 2015 is dropped. The fourth column present the remaining proceeds after cleaning for bookrunners. Next, filters are applied to screen for Issuer/Borrower SEDOL or Issuer/Borrower Ultimate Parentôs SEDOL matching. In sixth column, the sample is then filtered with total return index availability from Datastream. The sample size is then cleaned for multiple tranches offerings. In the last column, the total proceeds reflect the final sample after screening out insufficient number of stock returns in the estimation period.

No	Region	Raw data of SDC	Filtered for bookrunners	Filtered for Issuer/Borrower SEDOL or Issuer/Borrower Ultimate Parent's SEDOL matching	Filtered for Total Return Index (RI) availability in Datastream	Filtered for multiple bond tranches	Filtered for insufficient number of stock returns in the estimation period
1	Asia	373,949.23	318,419.03	304,426.49	296,024.39	296,024.39	293,324.29
2	Japan	524,928.64	471,670.64	465,002.70	436,401.30	436,401.30	434,412.20
3	Australia & New Zealand	68,051.10	54,431.40	49,878.30	48,744.50	48,744.50	45,556.60
4	Western Europe	536,054.80	425,854.70	383,800.30	371,645.40	371,645.40	368,611.40
5	UK	85,691.64	74,685.20	72,190.50	69,497.40	69,497.40	69,279.70
6	US	1,069,276.13	1,007,795.33	973,360.13	932,852.83	932,852.83	868,215.03
7	Canada	69,772.70	58,967.80	57,175.90	54,691.40	54,691.40	54,359.10
Total proceeds (US$ million)		2,727,724.23	2,411,824.09	2,305,834.32	2,209,857.22	2,209,857.22	2,133,758.32

Table 2.5: Summary statistics for convertible bond issuers.

This table reports the total observations, mean, median, and standard deviation (Std. Dev.) values of firm and convertible bond characteristics for whole sample. The detailed definition of variables can be found in Appendix A. Total assets, market value and proceeds are in millions of U.S. dollars.

	Whole sample				Industrials issuers sample			
Variable	Obs	Mean	Median	Std. Dev.	Obs	Mean	Median	Std. Dev.
CAR(-1,1)	11,350	-1.15	-0.87	6.65	8,069	-1.17	-0.90	6.95
Total assets	9,973	13,452.25	1,100.00	78,307.00	7,013	3,993.65	720.00	14,767.74
Market value	11,097	3,534.33	613.10	13,479.99	7,883	2,499.97	490.00	10,154.87
Leverage/TA	9,473	0.31	0.28	0.44	6,610	0.30	0.26	0.51
Stock run-up	11,350	18.00	17.44	51.95	8,069	17.69	17.31	53.93
Market run-up	11,350	12.94	13.20	21.35	8,069	12.49	12.68	21.56
Stock volatility	11,350	2.90	2.52	1.69	8,069	3.05	2.63	1.71
Market volatility	11,350	1.17	1.06	0.47	8,069	1.17	1.06	0.48
Financial slack/TA	9,164	0.21	0.12	0.59	6,944	0.23	0.14	0.63
Proceeds/TA	9,971	0.24	0.09	1.81	7,012	0.30	0.11	2.14
Proceeds	11,350	181.50	93.40	306.73	8,068	154.46	76.90	263.58
Years-to-maturity	10,172	7.74	5.25	5.40	7,472	7.65	5.17	5.31
Fees in percent	5,887	2.58	2.50	1.39	4,048	2.55	2.50	1.45
Coupon	9,611	3.30	2.63	2.90	7,079	3.13	2.38	2.88
Yield-to-maturity	8,351	4.29	3.50	5.06	6,064	4.20	3.25	5.28
Conversion premium	7,406	22.89	21.70	39.98	5,054	22.50	22.00	37.25
Leverage/ME	9,337	1.30	0.41	5.46	6,511	0.99	0.31	4.49
Book leverage	9,952	0.61	0.60	0.60	6,995	0.58	0.56	0.69
Market leverage	9,953	0.48	0.47	0.26	6,995	0.43	0.41	0.25
Net debt ratio	9,824	0.23	0.21	0.46	6,884	0.21	0.19	0.52
Net debt book ratio	9,954	0.55	0.55	0.62	6,996	0.51	0.51	0.71
Net debt market ratio	9,955	0.00	0.42	41.58	6,996	-0.23	0.36	49.59
Capital Expenditure	8,559	0.07	0.09	0.09	6,091	0.07	0.05	0.09
Market-to-book-ratio	9,753	2.82	2.94	20.28	6,873	3.14	1.93	23.66
Delta	8,957	0.41	0.85	0.41	6,671	0.43	0.42	0.41

Table 2.6: Stock−price reactions to convertible bond announcements by issuer country.

The table presents market model event study cumulative abnormal returns (CARs) surrounding the announcement day 0. The market model is estimated by ordinary least squares over the estimation window of (ī 250, ī 10) trading days prior to the announcement of convertible bonds. The benchmark on the daily market return is proxied by the corresponding countryȏs Datastream valueī weighted market index return. Significance of event study returns is determined using the T-test and Patell (1976) test parametric tests and the Corrado (1989) rank test and Cowan (1992) generalized sign test. *, **, *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

Region	Country	Event window	Number of events	Mean CAR	Median CAR	Std. dev. CAR	T_test	Patell	Corrado	GenSign
Whole sample		(ī 1,1)	11,350	ī 1.15%	ī 0.87%	6.65%	ī 22.7525***	1.9479*	ī 10.7445***	ī 15.7791***
		(ī 2,2)	11,350	ī 1.29%	ī 0.99%	7.92%	ī 19.7010***	ī 27.7063***	ī 9.0657***	ī 14.3694***
Asia		(ī 1,1)	2,534	0.25%	ī 0.20%	7.05%	2.0528**	4.2009***	0.5967	0.8156
		(ī 2,2)	2,534	0.12%	ī 0.25%	8.54%	0.7634	0.8833	ī 0.1765	0.8156
	China	(ī 1,1)	202	ī 1.26%	ī 0.97%	7.03%	ī 3.2971***	ī 2.8264***	ī 3.0175	ī 2.6520**
		(ī 2,2)	202	ī 1.86%	ī 1.50%	8.40%	ī 3.7827***	ī 4.0326***	ī 2.9909*	ī 3.3562***
	Hong Kong	(ī 1,1)	363	1.60%	0.09%	12.03%	3.5617***	2.6033***	0.8208	1.7161*
		(ī 2,2)	363	2.12%	0.31%	13.46%	3.6616***	ī 1.0302	0.5393	1.1905
	India	(ī 1,1)	231	ī 0.52%	ī 0.79%	4.38%	ī 1.3368	ī 0.6164	ī 0.7725	ī 2.0557**
		(ī 2,2)	231	ī 1.23%	ī 1.55%	5.94%	ī 2.4316**	ī 2.6422***	ī 2.2333**	ī 1.5259
	Indonesia	(ī 1,1)	29	ī 0.05%	ī 0.43%	6.30%	ī 0.0427	ī 1.5642	ī 0.3168	ī 1.6610*
		(ī 2,2)	29	0.25%	ī 1.40%	8.00%	0.1686	ī 0.7085	ī 0.0115	ī 0.5468
	Malaysia	(ī 1,1)	63	ī 0.41%	ī 0.52%	4.97%	ī 0.6775	ī 0.7739	ī 0.9182	ī 0.8783
		(ī 2,2)	63	ī 0.65%	ī 0.08%	5.45%	ī 0.8275	0.2298	ī 0.5642	0.1317
	Philippines	(ī 1,1)	31	0.74%	ī 0.39%	4.31%	0.9871	1.2156	0.441	0.1259
		(ī 2,2)	31	ī 0.05%	ī 1.08%	4.97%	ī 0.0552	ī 0.1946	ī 0.2695	ī 0.5936
	Singapore	(ī 1,1)	75	ī 1.13%	ī 1.48%	6.07%	ī 1.4342	ī 2.9901***	ī 2.4089**	ī 2.1647**
		(ī 2,2)	75	ī 1.01%	ī 1.69%	6.77%	ī 0.9949	ī 2.4717**	ī 1.4480	ī 1.7021*

Table 2.6: (continued)

Region	Country	Event window	Number of events	Mean CAR	Median CAR	Std. dev. CAR	T_test	Patell	Corrado	GenSign
	South Korea	(ī 1,1)	803	ī 0.17%	ī 0.43%	6.77%	ī 0.7199	ī 0.3617	ī 0.7743	ī 0.8017
		(ī 2,2)	803	ī 0.49%	ī 0.54%	8.86%	ī 1.6148	ī 2.2251**	ī 1.1911	ī 1.0137
	Taiwan	(ī 1,1)	685	0.84%	0.39%	4.31%	5.7343***	8.4270***	4.3859***	5.0207***
		(ī 2,2)	685	0.93%	0.48%	5.32%	4.8756***	8.6553***	4.2020***	5.3270***
	Thailand	(ī 1,1)	52	1.37%	ī 0.11%	5.81%	2.4244**	4.8237***	0.8733	0.3586
		(ī 2,2)	52	1.24%	ī 0.27%	7.99%	1.6961*	3.1291***	0.431	ī 0.1968
Japan		(ī 1,1)	2,867	ī 0.28%	ī 0.32%	4.22%	ī 3.6717***	ī 4.2173***	ī 2.6974***	ī 1.3101
		(ī 2,2)	2,867	ī 0.33%	ī 0.39%	5.31%	ī 3.3570***	ī 3.2619***	ī 2.0753**	ī 1.3850
AU & NZ		(ī 1,1)	353	0.41%	0.04%	7.57%	1.1393	2.6779***	0.6648	0.4771
		(ī 2,2)	353	ī 0.01%	ī 0.16%	9.60%	ī 0.0163	1.581	ī 0.0459	ī 0.4809
	Australia	(ī 1,1)	332	0.47%	0.04%	7.69%	1.2406	2.5489**	0.4891	0.4201
		(ī 2,2)	332	0.06%	ī 0.30%	9.41%	0.1206	1.0686	ī 0.4273	ī 1.0069
	New Zealand	(ī 1,1)	21	ī 0.54%	0.80%	5.47%	ī 0.5858	0.8443	0.6855	0.2859
		(ī 2,2)	21	ī 1.07%	0.79%	12.36%	ī 0.9029	2.2331**	1.4062	2.0318**
Western Europe		(ī 1,1)	989	ī 0.99%	ī 1.01%	4.90%	ī 6.9125***	ī 10.8002***	ī 6.9077***	ī 7.7669***
		(ī 2,2)	989	ī 1.05%	ī 0.89%	5.99%	ī 5.6663***	ī 9.2227***	ī 5.9524***	ī 5.4130***
	Austria	(ī 1,1)	23	ī 2.60%	ī 1.28%	5.91%	ī 2.3003**	ī 3.4422***	ī 2.2454**	ī 0.8952
		(ī 2,2)	23	ī 4.33%	ī 0.70%	8.04%	ī 2.9687***	ī 4.1287***	ī 2.3991**	ī 1.7297*
	Belgium	(ī 1,1)	35	ī 1.00%	ī 0.65%	3.90%	ī 1.6142	ī 1.9684**	ī 0.9522	ī 1.2865
		(ī 2,2)	35	ī 1.50%	ī 0.99%	5.91%	ī 1.8766*	ī 2.3032**	ī 0.5639	ī 1.6248
	Finland	(ī 1,1)	11	ī 0.60%	ī 0.82%	3.22%	ī 0.4061	ī 0.4566	ī 0.2575	ī 0.9045
		(ī 2,2)	11	ī 1.49%	ī 1.72%	3.29%	ī 0.7848	ī 1.0076	ī 0.4200	ī 1.5076

Table 2.6: (continued)

Region	Country	Event window	Number of events	Mean CAR	Median CAR	Std. dev. CAR	T_test	Patell	Corrado	GenSign
	France	(ī 1,1)	280	ī 1.44%	ī 1.32%	4.06%	ī 5.7566***	ī 8.5083***	ī 5.6849***	ī 5.6768***
		(ī 2,2)	280	ī 1.52%	ī 1.34%	5.12%	ī 4.7179***	ī 7.5450***	ī 4.6298***	ī 5.0787***
	Germany	(ī 1,1)	145	ī 0.78%	ī 1.09%	5.20%	ī 2.2471**	ī 5.1914***	ī 2.4921**	ī 2.1724**
		(ī 2,2)	145	ī 1.10%	ī 1.12%	5.78%	ī 2.4446**	ī 4.1892***	ī 2.3370**	ī 2.0061**
	Greece	(ī 1,1)	19	ī 2.61%	ī 1.42%	5.27%	ī 1.4938	ī 1.8898*	ī 1.8310*	ī 0.9057
		(ī 2,2)	19	ī 2.51%	ī 0.74%	5.74%	ī 1.1154	ī 1.7499*	ī 1.4134	ī 0.9057
	Ireland	(ī 1,1)	10	0.52%	0.38%	3.47%	0.3106	1.4083	0.9154	0.5712
		(ī 2,2)	10	1.81%	0.92%	4.62%	0.8381	1.1724	0.4048	0.5712
	Italy	(ī 1,1)	82	ī 0.40%	ī 0.97%	7.35%	ī 0.9706	ī 1.1158	ī 2.3524**	ī 3.3714***
		(ī 2,2)	82	ī 0.72%	ī 0.94%	7.80%	ī 1.3471	ī 1.8258*	ī 2.8898***	ī 0.9397
	Luxembourg	(ī 1,1)	27	ī 0.67%	ī 0.73%	3.75%	ī 0.5992	ī 1.0590	ī 0.8360	0.0902
		(ī 2,2)	27	ī 1.11%	ī 0.49%	4.73%	ī 0.7698	ī 2.3627**	ī 1.2748	ī 0.2953
	Netherlands	(ī 1,1)	109	ī 0.40%	ī 0.60%	4.77%	ī 0.9196	ī 1.6182	ī 1.4923	ī 1.3330
		(ī 2,2)	109	ī 0.20%	ī 0.54%	6.55%	ī 0.3604	ī 1.6146	ī 1.9561*	ī 0.7577
	Norway	(ī 1,1)	31	ī 1.82%	ī 2.06%	5.33%	ī 1.4732	ī 4.2228***	ī 3.0273***	ī 1.5413
		(ī 2,2)	31	ī 1.43%	ī 0.81%	5.88%	ī 0.8955	ī 2.5413**	ī 2.2312**	ī 0.4636
	Spain	(ī 1,1)	51	ī 1.80%	ī 1.10%	2.66%	ī 3.7571***	ī 5.0737***	ī 2.9732***	ī 3.7587***
		(ī 2,2)	51	ī 1.88%	ī 0.82%	3.61%	ī 3.0224***	ī 3.6718***	ī 1.8010*	ī 1.2359
	Sweden	(ī 1,1)	26	0.91%	ī 2.37%	9.28%	0.6254	ī 0.1583	ī 0.7004	ī 0.7548
		(ī 2,2)	26	2.24%	ī 0.34%	13.10%	1.1956	0.8068	ī 0.4007	0.0297

Table 2.6: (continued)

Region	Country	Event window	Number of events	Mean CAR	Median CAR	Std. dev. CAR	T_test	Patell	Corrado	GenSign
	Switzerland	(ī 1,1)	140	ī 0.56%	ī 0.41%	3.86%	ī 1.7893	ī 0.4268	ī 1.4421	ī 1.2238
		(ī 2,2)	140	ī 0.25%	ī 0.34%	4.32%	ī 0.6136	1.116	ī 0.3779	ī 0.5471
U.K.		(ī 1,1)	244	ī 1.49%	ī 1.37%	5.82%	ī 6.1538***	ī 8.8235***	ī 4.7535***	ī 4.8794***
		(ī 2,2)	244	ī 1.64%	ī 1.66%	6.27%	ī 5.2233***	ī 7.9986***	ī 3.8756***	ī 4.2384***
U.S.		(ī 1,1)	3,677	ī 3.09%	ī 2.31%	7.28%	ī 33.7022***	13.3052***	ī 10.8790***	ī 20.1323***
		(ī 2,2)	3,677	ī 3.30%	ī 2.40%	8.66%	ī 27.8437***	ī 37.5192***	ī 8.8071***	ī 18.7456 ***
Canada		(ī 1,1)	686	ī 0.55%	ī 0.77%	9.08%	ī 1.9750**	ī 6.1208***	ī 4.2559***	ī 4.7983***
		(ī 2,2)	686	ī 0.67%	ī 0.91%	10.08%	ī 1.8618*	ī 6.3253***	ī 4.0546***	ī 4.4163***
Anglo-Saxon		(ī 1,1)	4,970	ī 2.41%	ī 1.74%	7.61%	ī 29.0430***	7.9397***	ī 11.0733***	ī 19.9207***
		(ī 2,2)	4,970	ī 2.62%	ī 1.86%	8.91%	ī 24.4050***	ī 36.0201***	ī 9.0816***	ī 18.927***
East-Asian		(ī 1,1)	4,920	ī 0.01%	ī 0.21%	5.79%	ī 0.0967	ī 0.0872	ī 1.2477	0.4759
		(ī 2,2)	4,920	ī 0.06%	ī 0.27%	7.08%	ī 0.6867	ī 1.2566	ī 1.0008	0.1618

Table 2.7: Stock-price reactions to financials, industrials, and utilities classifications from 30 cross-countries convertible bond announcements.

The table presents market model event study cumulative abnormal returns (CARs) surrounding the announcement day 0 for utility, financial, and industrial firms. Utility issuers are firms with SIC codes between 4,000 and 4,999. Financial firm are those with SIC codes between 6,000 and 6,799. Industrial firms are those with any other SIC code. The market model is estimated by ordinary least squares over the estimation window of (ī 250, ī 10) trading days prior to the announcement of convertible bonds. The benchmark on the daily market return is proxied by the corresponding countryôs Datastream valueī weighted market index return. Significance of event study returns is determined using the T-test and Patell (1976) test parametric tests and the Corrado (1989) rank test and Cowan (1992) generalized sign test. *, **, *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

Region	SIC categories	Event window	Number of events	Mean CAR	Medium CAR	S.D. CAR	T_test	Patell	Corrado	GenSign
Whole	Financial	(ī 1,1)	2,184	ī 0.91%	ī 0.70%	5.81%	ī 9.3705***	ī 16.5835***	ī 7.9156***	ī 6.9836***
		(ī 2,2)	2,184	ī 1.03%	ī 0.84%	6.53%	ī 8.2609***	ī 17.2025***	ī 6.4465***	ī 6.5553***
	Industrial	(ī 1,1)	8,071	ī 1.17%	ī 0.90%	6.95%	ī 18.6212***	ī 27.8657***	ī 9.8726***	ī 12.9923***
		(ī 2,2)	8,071	ī 1.30%	ī 1.04%	8.34%	ī 16.0039***	ī 25.0652***	ī 8.4465***	ī 11.5879***
	Utility	(ī 1,1)	1,095	ī 1.50%	ī 0.97%	5.90%	ī 9.8457***	15.3486***	ī 6.4669***	ī 5.6661***
		(ī 2,2)	1,095	ī 1.71%	ī 1.09%	7.23%	ī 8.7054***	3.1445***	ī 5.4920***	ī 5.5451***
Asia	Financial	(ī 1,1)	365	0.49%	ī 0.35%	8.33	1.5487	0.9321	-0.7898	-0.2766
		(ī 2,2)	365	0.38%	ī 0.37%	8.42	0.9338	-5.3796***	-0.6235	-0.2766
	Industrial	(ī 1,1)	1,996	0.21%	ī 0.17%	6.94	1.5128	4.0783***	0.9639	0.9686
		(ī 2,2)	1,996	0.07%	ī 0.21%	8.74	0.3856	2.8592***	0.0502	0.9686
	Utility	(ī 1,1)	173	0.21%	ī 0.18%	5.06	0.4968	0.8711	0.4609	0.2323
		(ī 2,2)	173	0.16%	ī 0.16%	6.18	0.2931	1.4836	0.2432	0.2323
Japan	Financial	(ī 1,1)	350	ī 0.82%	ī 0.34%	4.14%	ī 3.7177***	ī 3.3663***	ī 2.3734**	ī 1.1696
		(ī 2,2)	350	ī 1.03%	ī 0.62%	5.77%	ī 3.6236***	ī 2.7214***	ī 1.8017*	ī 1.1696
	Industrial	(ī 1,1)	2,326	ī 0.15%	ī 0.31%	4.18%	ī 1.8132*	ī 2.4750**	ī 1.5887	ī 0.7491
		(ī 2,2)	2,326	ī 0.19%	ī 0.36%	5.20%	ī 1.6893*	ī 1.6900*	ī 1.1457	ī 0.9153
	Utility	(ī 1,1)	191	ī 0.82%	ī 0.45%	4.73%	ī 2.9947***	ī 3.1447***	ī 2.1920**	ī 0.8813
		(ī 2,2)	191	ī 0.81%	ī 0.38%	5.75%	ī 2.2870**	ī 3.0559***	ī 1.9714**	ī 0.5915
Australia &	Financial	(ī 1,1)	118	0.37%	0.13%	3.99%	1.1097	0.4762	0.4794	1.0603
NZ		(ī 2,2)	118	0.66%	ī 0.03%	6.21%	1.5121	1.5557	0.0496	0.1396

Table 2.7: (continued)

Region	SIC categories	Event window	Number of events	Mean CAR	Medium CAR	S.D. CAR	T_test	Patell	Corrado	GenSign
Australia & NZ	Industrial	(ī 1,1)	209	0.61%	0.03%	9.21%	1.0842	2.7914***	0.3517	0.0779
		(ī 2,2)	209	ī 0.18%	ī 0.28%	11.37%	ī 0.2430	0.9515	ī 0.0040	ī 0.6138
	Utility	(ī 1,1)	26	ī 1.00%	ī 0.69%	4.84%	ī 0.8189	0.9379	0.3904	ī 0.7209
		(ī 2,2)	26	ī 1.68%	ī 0.28%	5.90%	ī 1.0610	ī 0.1861	ī 0.2651	ī 0.3286
Western Europe	Financial	(ī 1,1)	326	ī 0.63%	ī 0.61%	4.77%	ī 3.0180***	ī 5.0524***	ī 4.1232***	ī 3.7906***
		(ī 2,2)	326	ī 0.89%	ī 0.63%	5.54%	ī 3.2749***	ī 5.7353***	ī 3.9616***	ī 2.4605**
	Industrial	(ī 1,1)	546	ī 1.16%	ī 1.18%	5.06%	ī 5.5524***	ī 8.3781***	ī 5.7790***	ī 6.2342***
		(ī 2,2)	546	ī 1.11%	ī 1.00%	6.25%	ī 4.1138***	ī 6.4390***	ī 4.6656***	ī 4.6080***
	Utility	(ī 1,1)	117	ī 1.12%	ī 1.10%	4.40%	ī 2.6700***	ī 4.6091***	ī 3.0826***	ī 2.0588**
		(ī 2,2)	117	ī 1.10%	ī 1.25%	5.93%	ī 2.0346**	ī 3.0091***	ī 2.5312**	ī 1.6887*
U.K.	Financial	(ī 1,1)	73	ī 1.30%	ī 1.69%	4.97%	ī 3.2624***	ī 6.4721***	ī 3.8520***	ī 2.7520***
		(ī 2,2)	73	ī 1.57%	ī 1.42%	5.26%	ī 3.0344***	ī 6.0329***	ī 3.1476***	ī 3.2207***
	Industrial	(ī 1,1)	129	ī 1.51%	ī 1.00%	6.35%	ī 4.4325***	ī 5.3891***	ī 3.4196***	ī 3.5661***
		(ī 2,2)	129	ī 1.67%	ī 1.73%	6.66%	ī 3.7800***	ī 5.3811***	ī 2.9790***	ī 2.8609***
	Utility	(ī 1,1)	42	ī 1.76%	ī 1.61%	5.60%	ī 2.7114	ī 3.2898	ī 1.7963	ī 1.8828
		(ī 2,2)	42	ī 1.66%	ī 1.65%	6.80%	ī 1.9884	ī 1.8947	ī 1.1225	ī 0.9562
U.S.	Financial	(ī 1,1)	735	ī 2.04%	ī 1.41%	6.05%	ī 12.8072***	ī 20.2954***	ī 6.8279***	ī 7.0550***
		(ī 2,2)	735	ī 2.19%	ī 1.59%	6.68%	ī 10.6864***	ī 18.0272***	ī 5.0883***	ī 7.2028***
	Industrial	(ī 1,1)	2,470	ī 3.49%	ī 2.67%	7.64%	ī 29.3182***	ī 45.1372***	ī 10.9014***	ī 18.0979***
		(ī 2,2)	2,470	ī 3.67%	ī 2.79%	9.17%	ī 23.8671***	ī 39.7813***	ī 8.8794***	ī 16.1642***
	Utility	(ī 1,1)	472	ī 2.64%	ī 1.71%	6.91%	ī 10.6760***	165.7079***	ī 6.4380***	ī 5.9876***
		(ī 2,2)	472	ī 3.07%	ī 1.95%	8.50%	ī 9.6097***	8.7776***	ī 5.3502***	ī 6.3561***
Canada	Financial	(ī 1,1)	218	ī 0.52%	ī 0.39%	3.45%	ī 1.6287	ī 2.5677**	ī 2.2829**	ī 1.7885*
		(ī 2,2)	218	ī 0.42%	ī 0.57%	4.37%	ī 1.0060	ī 1.6438	ī 2.1456**	ī 0.9749
	Industrial	(ī 1,1)	393	ī 0.53%	ī 1.05%	11.55%	ī 1.2205	ī 5.2646***	ī 3.4315***	ī 4.4463***
		(ī 2,2)	393	ī 0.77%	ī 1.36%	12.75%	ī 1.3669	ī 6.1373***	ī 3.4361***	ī 4.3454***

Table 2.7: (continued)

Region	SIC categories	Event window	Number of events	Mean CAR	Medium CAR	S.D. CAR	T_test	Patell	Corrado	GenSign
Canada	Utility	(ī 1,1)	75	ī 0.72%	ī 0.61%	4.66%	ī 1.1309	ī 2.0827**	ī 1.5967	ī 1.2808
		(ī 2,2)	75	ī 0.88%	ī 0.63%	4.86%	ī 1.0668	ī 2.2786**	ī 1.1431	ī 1.7434*
Anglo-Saxon	Financial	(ī 1,1)	1,149	ī 1.44%	ī 1.03%	5.45%	ī 11.3849***	ī 18.5924***	ī 7.2751***	ī 6.6560***
		(ī 2,2)	1,149	ī 1.50%	ī 1.07%	6.24%	ī 9.1614***	ī 15.9540***	ī 5.7115***	ī 6.7741***
	Industrial	(ī 1,1)	3,206	ī 2.78%	ī 2.25%	8.38%	ī 24.5598***	ī 41.8762***	ī 10.8767***	ī 18.1203***
		(ī 2,2)	3,206	ī 3.00%	ī 2.40%	9.82%	ī 20.5403***	ī 37.9519***	ī 9.0701***	ī 16.4588***
	Utility	(ī 1,1)	615	ī 2.28%	ī 1.49%	6.54%	ī 10.5625***	14.7588***	ī 6.3424***	ī 6.3329***
		(ī 2,2)	615	ī 2.65%	ī 1.58%	7.96%	ī 9.5187***	6.3004***	ī 5.4093***	ī 6.5751***
East-Asian	Financial	(ī 1,1)	589	ī 0.16%	ī 0.24%	6.83%	ī 0.7174	ī 1.7757*	ī 1.5464	ī 0.2891
		(ī 2,2)	589	ī 0.32%	ī 0.53%	7.43%	ī 1.1505	ī 6.1682***	ī 1.2504	ī 0.8665
	Industrial	(ī 1,1)	4,014	0.04%	ī 0.21%	5.68%	0.4458	0.9284	ī 0.4531	0.6647
		(ī 2,2)	4,014	ī 0.01%	ī 0.26%	7.10%	ī 0.1058	1.14	ī 0.3967	0.3801
	Utility	(ī 1,1)	317	ī 0.27%	ī 0.15%	5.07%	ī 1.0264	ī 1.2263	ī 1.3220	ī 0.0968
		(ī 2,2)	317	ī 0.25%	ī 0.08%	6.12%	ī 0.7488	ī 0.5970	ī 1.1664	0.4653

Table 2.8: Stock-price reactions to use of proceeds of convertible bonds across industrials classification from 30 cross-countries convertible bond announcements.

The table presents market model event study cumulative abnormal returns (CARs) surrounding the announcement day 0 for acquisition (ACQ), capital expenditure (CE), general corporate purposes (GCP), others, debt refinancing (DR), and working capital (WC). The use of proceeds are classified by SDC Platinum. The F, I, U indicate financials, industrials, and utilities classifications, respectively. The market model is estimated by ordinary least squares over the estimation window of (ī 250, ī 10) trading days prior to the announcement of convertible bonds. The benchmark on the daily market return is proxied by the corresponding countryȏs Datastream valueī weighted market index return. Significance of event study returns is determined using the Tī test and Patell (1976) test parametric tests and the Corrado (1989) rank test and Cowan (1992) generalized sign test. *, **, *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

Region	Use of proceeds	Event window	Number of events	Mean CAR	Medium CAR	Std. dev. CAR	T_test	Patell	Corrado	GenSign
Whole	ACQ	(ī 1,1)	174	ī 1.11%	ī 1.44%	8.15%	ī 2.2572**	ī 5.0157***	ī 3.5974***	ī 2.6932***
		(ī 2,2)	174	ī 1.41%	ī 1.42%	8.37%	ī 2.2227**	ī 4.1857***	ī 3.1594***	ī 1.3251
	CE	(ī 1,1)	1,552	ī 0.27%	ī 0.20%	4.92%	ī 2.2499**	ī 1.6634*	ī 0.9923	0.2557
		(ī 2,2)	1,552	ī 0.34%	ī 0.27%	6.01%	ī 2.2008**	ī 1.9056*	ī 0.5605	0.2048
	GCP	(ī 1,1)	4,199	ī 1.62%	ī 1.20%	7.66%	ī 18.0325***	ī 27.4907***	ī 9.3966***	ī 13.3544***
		(ī 2,2)	4,199	ī 1.74%	ī 1.42%	9.11%	ī 15.0225***	ī 24.253***	ī 8.0836***	ī 12.1185***
	Others	(ī 1,1)	419	ī 2.02%	ī 1.62%	6.48%	ī 6.6606***	ī 11.3981***	ī 6.3565***	ī 5.0365***
		(ī 2,2)	419	ī 2.10%	ī 1.87%	8.42%	ī 5.3835***	ī 9.8787***	ī 5.0933***	ī 3.9603***
	DR	(ī 1,1)	1,090	ī 0.91%	ī 0.72%	6.18%	ī 6.0374	ī 10.1539	ī 5.4861	ī 4.3822
		(ī 2,2)	1,090	ī 1.13%	ī 0.98%	7.44%	ī 5.8243	ī 9.2577	ī 4.5211	ī 4.0182
	WC	(ī 1,1)	636	ī 0.36%	ī 0.57%	7.16%	ī 1.2701	ī 0.8401	ī 1.2412	ī 1.1086
		(ī 2,2)	636	ī 0.49%	ī 0.67%	9.02%	ī 1.3411	ī 1.6459*	ī 1.4754	ī 1.2674
Asia	ACQ	(ī 1,1)	37	ī 0.62%	0.00%	6.90%	ī 0.5661	ī 0.9661	ī 0.646	0.7589
		(ī 2,2)	37	ī 0.76%	ī 0.28%	8.36%	ī 0.5332	ī 1.4696	ī 1.0537	0.0982
	CE	(ī 1,1)	227	ī 0.40%	ī 0.37%	5.41%	ī 1.1654	ī 0.5776	ī 0.8011	ī 0.4114
		(ī 2,2)	227	ī 0.59%	ī 0.39%	6.80%	ī 1.3202	ī 0.6280	ī 0.7004	ī 0.1452
	GCP	(ī 1,1)	903	0.26%	ī 0.36%	8.20%	1.1631	1.5372	0.3608	ī 0.8795
		(ī 2,2)	903	ī 0.15%	ī 0.68%	9.99%	ī 0.5185	ī 0.7371	ī 1.2802	ī 1.4127

Table 2.8: (continued)

Region	Use of proceeds	Event window	Number of events	Mean CAR	Medium CAR	Std. dev. CAR	T_test	Patell	Corrado	GenSign
Asia	Others	(ī 1,1)	59	0.21%	0.11%	6.58%	0.2547	1.4928	0.1504	1.0065
		(ī 2,2)	59	0.67%	0.50%	7.97%	0.6271	2.8352***	1.0675	1.7902*
	DR	(ī 1,1)	270	1.10%	0.73%	5.17%	4.0711***	7.5614***	3.3185***	3.8163***
		(ī 2,2)	270	1.29%	0.80%	6.49%	3.6822***	8.0412***	3.4402***	4.0602***
	WC	(ī 1,1)	500	ī 0.02%	ī 0.40%	5.85%	ī 0.0638	0.6662	ī 0.3794	0.0389
		(ī 2,2)	500	0.09%	ī 0.27%	8.23%	0.2409	0.6443	ī 0.3623	0.3076
Japan	ACQ	(ī 1,1)	10	ī 0.72%	ī 1.26%	3.77%	ī 0.5505	ī 0.2496	ī 0.4555	ī 0.3557
		(ī 2,2)	10	ī 2.11%	ī 3.33%	5.02%	ī 1.2453	ī 1.5066	ī 1.0386	ī 0.9906
	CE	(ī 1,1)	1,230	ī 0.02%	ī 0.13%	3.81%	ī 0.2117	ī 0.1287	0.0673	1.2031
		(ī 2,2)	1,230	0.00%	ī 0.17%	4.80%	ī 0.0253	0.0616	0.4211	1.0316
	GCP	(ī 1,1)	719	0.19%	ī 0.23%	4.48%	1.1235	1.5713	0.6521	0.5951
		(ī 2,2)	719	0.22%	ī 0.22%	5.53%	1.0401	2.3247**	0.4982	0.3710
	Others	(ī 1,1)	78	ī 1.24%	ī 1.49%	5.52%	ī 2.9024***	ī 4.3349***	ī 2.0855**	ī 1.5558
		(ī 2,2)	78	ī 1.18%	ī 1.5%	5.92%	ī 2.1424**	ī 2.9866***	ī 1.3149	ī 1.5558
	DR	(ī 1,1)	231	ī 1.35%	ī 1.17%	4.24%	ī 4.9447***	ī 7.0874***	ī 4.6500***	ī 4.5618***
		(ī 2,2)	231	ī 1.62%	ī 1.51%	5.00%	ī 4.5896***	ī 6.3090***	ī 4.1051***	ī 4.1663***
	WC	(ī 1,1)	57	ī 0.79%	ī 0.73%	4.78%	ī 1.2715	ī 1.3425	ī 1.0379	ī 1.2473
		(ī 2,2)	57	ī 1.68%	ī 0.71%	7.20%	ī 2.0905**	ī 2.4974**	ī 1.1871	ī 1.2473
AU&NZ	ACQ	(ī 1,1)	14	1.14%	0.72%	10.45%	0.5820	2.4562**	ī 0.0505	0.5332
		(ī 2,2)	14	3.51%	2.64%	6.12%	1.3911	4.1063***	0.5265	2.6929***
	CE	(ī 1,1)	21	ī 0.70%	ī 1.09%	5.82%	ī 0.4099	ī 0.8358	ī 0.9413	ī 1.3672
		(ī 2,2)	21	ī 0.83%	ī 2.30%	7.93%	ī 0.3768	ī 1.4964	ī 0.8845	ī 0.4938

Table 2.8: (continued)

Region	Use of proceeds	Event window	Number of events	Mean CAR	Medium CAR	Std. dev. CAR	T_test	Patell	Corrado	GenSign
AU&NZ	GCP	(ī 1,1)	94	1.27%	0.64%	6.68%	1.8645*	2.5826***	0.8004	1.8050*
		(ī 2,2)	94	1.05%	0.62%	9.41%	1.1895	1.6144	0.7450	0.7735
	Others	(ī 1,1)	11	2.66%	ī 0.69%	13.57%	0.9718	0.5480	0.0868	ī 1.2868
		(ī 2,2)	11	1.85%	ī 0.39%	23.38%	0.5231	0.4305	0.5940	ī 0.6799
	DR	(ī 1,1)	20	0.52%	ī 0.23%	8.79%	0.3292	1.5727	0.4200	ī 0.3123
		(ī 2,2)	20	0.65%	ī 2.44%	11.46%	0.3190	1.6048	0.3355	ī 1.2301
	WC	(ī 1,1)	49	ī 0.69%	ī 0.72%	12.88%	ī 0.4268	ī 0.0181	ī 0.2445	ī 1.0802
		(ī 2,2)	49	ī 4.09%	ī 1.79%	12.86%	ī 1.9626*	ī 2.7382***	ī 1.3092	ī 2.5089**
Western Europe	ACQ	(ī 1,1)	15	ī 1.32%	ī 2.18%	5.73%	ī 1.1379	ī 0.0739	ī 1.2802	ī 1.7640*
		(ī 2,2)	15	ī 2.18%	ī 2.52%	9.19%	ī 1.4516	ī 0.9929	ī 1.7570*	ī 0.7312
	CE	(ī 1,1)	4	ī 2.55%	ī 2.02%	7.66%	ī 1.0351	ī 2.6079***	ī 0.5965	0.1080
		(ī 2,2)	4	ī 1.00%	0.41%	7.75%	ī 0.3139	ī 1.0553	0.3226	0.1080
	GCP	(ī 1,1)	473	ī 1.33%	ī 1.24%	4.71%	ī 6.2235***	ī 8.7647***	ī 5.5799***	ī 5.8068***
		(ī 2,2)	473	ī 1.31%	ī 1.01%	5.42%	ī 4.7354***	ī 6.7914***	ī 4.5836***	ī 4.7943***
	Others	(ī 1,1)	13	0.44%	ī 0.49%	5.84%	0.2903	ī 0.7270	ī 0.4290	ī 1.2157
		(ī 2,2)	13	1.26%	ī 0.73%	8.50%	0.6481	0.4650	ī 0.1749	ī 0.6604
	DR	(ī 1,1)	41	0.79%	ī 0.65%	7.35%	0.8023	0.5297	ī 0.7776	ī 1.2369
		(ī 2,2)	41	1.12%	0.16%	10.95%	0.8838	0.3080	ī 0.2630	0.3254
U.K.	ACQ	(ī 1,1)	2	ī 5.25%	ī 5.25%	5.81%	ī 1.9472*	ī 3.8087***	ī 0.6409	ī 1.3123
		(ī 2,2)	2	ī 5.22%	ī 5.22%	7.78%	ī 1.4975	ī 2.4721**	ī 0.1963	0.1059
	GCP	(ī 1,1)	117	ī 1.39%	ī 0.84%	6.52%	ī 3.8443***	ī 4.5117***	ī 3.3259***	ī 3.2467***
		(ī 2,2)	117	ī 1.55%	ī 1.56%	6.81%	ī 3.3142***	ī 4.7090***	ī 2.8976***	ī 2.6913***

Table 2.8: (continued)

Region	Use of proceeds	Event window	Number of events	Mean CAR	Medium CAR	Std. dev. CAR	T_test	Patell	Corrado	GenSign
	Others	(ī 1,1)	3	ī 2.87%	ī 4.66%	3.13%	ī 1.6917*	ī 1.4770	ī 0.4318	ī 0.4846
		(ī 2,2)	3	ī 3.16%	ī 4.69%	3.32%	ī 1.4428	ī 1.4196	ī 0.5249	ī 0.4846
	DR	(ī 1,1)	7	ī 1.92%	ī 3.07%	4.61%	ī 1.1949	ī 1.6868*	ī 0.6223	ī 1.0173
		(ī 2,2)	7	ī 1.99%	ī 2.97%	5.50%	ī 0.9627	ī 1.5981	ī 0.6365	ī 1.0173
U.S.	ACQ	(ī 1,1)	64	ī 2.27%	ī 2.24%	7.12%	ī 2.3786**	ī 7.6785***	ī 3.4909***	ī 3.0065***
		(ī 2,2)	64	ī 3.16%	ī 2.24%	7.58%	ī 2.5621**	ī 6.9760***	ī 3.2370***	ī 2.7560***
	CE	(ī 1,1)	30	ī 7.77%	ī 4.30%	14.47%	ī 4.7464***	ī 5.6790***	ī 3.5442***	ī 2.0471**
		(ī 2,2)	30	ī 7.23%	ī 4.11%	14.83%	ī 3.4201***	ī 4.3628***	ī 2.3639**	ī 2.0471**
	GCP	(ī 1,1)	1,682	ī 3.84%	ī 2.98%	7.97%	ī 26.5621***	ī 39.2843***	ī 10.3127***	ī 16.2122***
		(ī 2,2)	1,682	ī 3.96%	ī 3.09%	9.49%	ī 21.1980***	ī 33.6781***	ī 8.2586***	ī 14.1622***
	Others	(ī 1,1)	244	ī 3.25%	ī 2.55%	6.10%	ī 7.8716***	ī 12.9274***	ī 6.8564***	ī 5.6141***
		(ī 2,2)	244	ī 3.44%	ī 2.93%	7.85%	ī 6.4451***	ī 12.4731***	ī 5.8794***	ī 4.8446***
	DR	(ī 1,1)	439	ī 2.12%	ī 1.62%	6.21%	ī 8.8546***	ī 15.228***	ī 6.6213***	ī 5.0040***
		(ī 2,2)	439	ī 2.45%	ī 1.88%	8.17%	ī 7.9316***	ī 14.5145***	ī 5.6317***	ī 5.0040***
	WC	(ī 1,1)	11	ī 6.11%	ī 5.94%	4.77%	ī 3.5684***	ī 5.6138***	ī 2.3118**	ī 2.0053**
		(ī 2,2)	11	ī 7.26%	ī 6.61%	6.07%	ī 3.2877***	ī 5.1956***	ī 2.0585**	ī 2.6086***
Canada	ACQ	(ī 1,1)	32	ī 0.08%	ī 1.06%	11.79%	ī 0.0902	ī 0.2795	ī 0.8457	ī 1.4541
		(ī 2,2)	32	0.01%	ī 0.77%	10.42%	0.0106	1.1102	0.1277	ī 0.0377
	CE	(ī 1,1)	40	ī 0.85%	ī 2.52%	10.58%	ī 0.4630	ī 1.9241*	ī 0.8991	ī 1.3626
		(ī 2,2)	40	ī 3.62%	ī 3.82%	13.82%	ī 1.5096	ī 5.5196***	ī 1.5630	ī 1.9951**
	GCP	(ī 1,1)	210	ī 0.15%	ī 1.18%	11.98%	ī 0.2764	ī 3.0545***	ī 2.324**	ī 3.0954***
		(ī 2,2)	210	0.06%	ī 1.43%	14.25%	0.0857	ī 3.2824***	ī 2.3042**	ī 3.0954***

Table 2.8: (continued)

Region	Use of proceeds	Event window	Number of events	Mean CAR	Medium CAR	Std. dev. CAR	T_test	Patell	Corrado	GenSign
Canada	Others	(ī 1,1)	10	1.17%	1.46%	5.46%	0.3178	0.2239	0.2522	0.3039
		(ī 2,2)	10	ī 1.15%	0.11%	8.40%	ī 0.2413	ī 0.6281	ī 0.3219	0.3039
	DR	(ī 1,1)	82	ī 0.93%	ī 0.70%	9.77%	ī 1.1911	ī 4.4013***	ī 2.3245**	ī 2.4596**
		(ī 2,2)	82	ī 2.15%	ī 1.23%	6.98%	ī 2.1347**	ī 4.7285***	ī 2.3489**	ī 2.9015***
	WC	(ī 1,1)	19	ī 3.95%	ī 0.98%	17.27%	ī 1.1490	ī 1.6528*	ī 1.4051	ī 1.1903
		(ī 2,2)	19	0.89%	ī 0.75%	16.99%	0.1999	ī 0.1523	ī 1.2308	ī 0.7314
Angloī Saxon	ACQ	(ī 1,1)	112	ī 1.27%	ī 1.75%	9.09%	ī 1.9705**	ī 5.5948***	ī 3.3923***	ī 3.0393***
		(ī 2,2)	112	ī 1.46%	ī 1.61%	8.57%	ī 1.7468*	ī 3.5589***	ī 2.4219**	ī 1.1447
	CE	(ī 1,1)	91	ī 3.10%	ī 2.17%	11.59%	ī 2.9764***	ī 4.9378***	ī 2.7111***	ī 2.7351***
		(ī 2,2)	91	ī 4.17%	ī 3.40%	13.17%	ī 3.0885***	ī 6.8834***	ī 2.5539**	ī 2.7351***
	GCP	(ī 1,1)	2,108	ī 3.10%	ī 2.50%	8.46%	ī 23.2677***	ī 36.5806***	ī 10.3288***	ī 15.8216***
		(ī 2,2)	2,108	ī 3.19%	ī 2.57%	10.05%	ī 18.5352***	ī 31.9165***	ī 8.3810***	ī 14.1215***
	Others	(ī 1,1)	269	ī 2.85%	ī 2.40%	6.61%	ī 6.9092***	ī 12.4302***	ī 6.3830***	ī 5.6507***
		(ī 2,2)	269	ī 3.14%	ī 2.92%	8.95%	ī 5.9028***	ī 12.1507***	ī 5.7209***	ī 4.7962***
	DR	(ī 1,1)	548	ī 1.84%	ī 1.36%	6.94%	ī 7.961***	ī 15.1700***	ī 6.6229***	ī 5.5590***
		(ī 2,2)	548	ī 2.29%	ī 1.80%	8.10%	ī 7.6621***	ī 14.6876***	ī 5.8537***	ī 5.9011***
	WC	(ī 1,1)	79	ī 2.23%	ī 1.39%	13.35%	ī 1.7067*	ī 2.9195***	ī 1.8515*	ī 2.1817**
		(ī 2,2)	79	ī 3.33%	ī 1.97%	13.42%	ī 1.9780**	ī 4.1696***	ī 2.4789**	ī 3.3068***
East-Asian	ACQ	(ī 1,1)	34	ī 1.05%	ī 0.37%	7.06%	ī 0.9100	ī 0.8822	ī 1.3269	0.1344
		(ī 2,2)	34	ī 1.07%	ī 1.42%	8.51%	ī 0.7154	ī 1.4670	ī 1.3419	ī 0.8981
	CE	(ī 1,1)	1,417	ī 0.08%	ī 0.14%	4.05%	ī 0.7581	ī 0.4867	ī 0.2497	1.0345
		(ī 2,2)	1,417	ī 0.08%	ī 0.20%	5.10%	ī 0.5543	ī 0.1406	0.2806	0.8215

Table 2.8: (continued)

Region	Use of proceeds	Event window	Number of events	Mean CAR	Medium CAR	Std. dev. CAR	T_test	Patell	Corrado	GenSign
East-Asian	GCP	(ī 1,1)	1,392	0.30%	ī 0.23%	7.1%	1.9561*	2.2593**	0.8427	0.3762
		(ī 2,2)	1,392	0.14%	ī 0.3%	8.58%	0.7044	1.4604	ī 0.2324	ī 0.2142
	Others	(ī 1,1)	130	ī 0.52%	ī 0.37%	6.06%	ī 1.3197	ī 2.2457**	ī 1.3802	ī 0.3800
		(ī 2,2)	130	ī 0.24%	ī 0.12%	6.94%	ī 0.4748	ī 0.2697	ī 0.2820	0.1471
	DR	(ī 1,1)	489	ī 0.04%	ī 0.24%	4.79%	ī 0.2271	0.6001	ī 0.7350	ī 0.1668
		(ī 2,2)	489	ī 0.07%	ī 0.34%	5.97%	ī 0.2838	1.5937	ī 0.2561	0.1050
	WC	(ī 1,1)	552	ī 0.05%	ī 0.43%	5.74%	ī 0.1833	0.4389	ī 0.4552	ī 0.1629
		(ī 2,2)	552	ī 0.04%	ī 0.32%	8.16%	ī 0.1189	ī 0.0248	ī 0.5027	0.0929

Table 2.9: Determinants of stock price reactions around convertible bond announcements.

This table presents the results of two-dimension clustered standard errors by Peterson (2009) regression analyses of stock price reactions around convertible bond announcements. The detailed stata programming code of two-dimension clustered standard errors estimators can be found at his homepage. The dependent variable is the cumulative abnormal return (CAR) measured over the window (ī 1, 1) relative to the announcement date of convertible bond , measured using market model regressions for the estimation period of ī 250 to ī 10 trading day. The detailed definitions of variables can be found in Appendix A. *t*-statistics are reported in parentheses. *, **, and *** indicate significant at 10%, 5%, and 1% significance level, respectively.

Variables	1	2	3	4
LnTA	ī 0.302***	ī 0.317***	ī 0.240***	ī 0.267***
	(ī 4.006)	(ī 3.883)	(ī 3.243)	(ī 3.293)
Debt/TA	ī 0.574**	ī 0.614***	ī 0.482	ī 0.545*
	(ī 2.190)	(ī 2.589)	(ī 1.497)	(ī 1.849)
Stock run-up	ī 0.015***	ī 0.015***	ī 0.014***	ī 0.014***
	(ī 5.346)	(ī 5.800)	(ī 5.408)	(ī 5.826)
Market run-up	0.028***	0.028***	0.015***	0.016***
	(3.396)	(3.574)	(2.671)	(2.822)
Stock return volatility	ī 0.291	ī 0.250	ī 0.150	ī 0.128
	(ī 1.526)	(ī 1.266)	(ī 0.803)	(ī 0.656)
Market return volatility	ī 0.004	ī 0.049	0.743***	0.761***
	(ī 0.014)	(ī 0.161)	(3.071)	(3.000)
Financial slack/TA	ī 1.991***	ī 1.729***	ī 2.053***	ī 1.779***
	(ī 4.853)	(ī 4.006)	(ī 5.229)	(ī 4.273)
Proceeds/TA	0.036	0.073	0.106	0.118
	(0.179)	(0.385)	(0.590)	(0.683)
LnMaturity	ī 0.907***	ī 0.885***	ī 1.457***	ī 1.455***
	(ī 4.181)	(ī 4.206)	(ī 8.758)	(ī 9.056)
Industry dummies	No	Yes	No	Yes
Year dummies	No	No	Yes	Yes
Constant	6.062***	ī 2.619*	5.460***	11.000***
	(3.879)	(ī 1.751)	(3.916)	(7.668)
Observations	7,908	7,908	7,908	7,908
F-statistics	22.500***	131.440***	13.430***	155.040***
Adjusted R^2	0.037	0.039	0.062	0.063

Table 2.10: Determinants of stock price reactions around convertible bond announcements between financials, industrials and utilities issuers.

This table presents the results of two-dimension clustered standard errors by Petersen (2009) regression analyses of stock price reactions around convertible bond announcements between financials, industrials and utilities issuers. The detailed stata programming code of two-dimension clustered standard errors estimators can be found at his homepage. The dependent variable is the cumulative abnormal return (CAR) measured over the window (−1, 1) relative to the announcement date of convertible bond , measured using market model regressions for the estimation period of −250 to −10 trading day. The detailed definitions of variables can be found in Appendix A. *t*-statistics are reported in parentheses. *, **, and *** indicate significant at 10%, 5%, and 1% significance level, respectively.

Variables	Financials	Industrials	Utilities
LnTA	−0.202*	−0.306***	0.042
	(−1.768)	(−3.235)	(0.268)
Debt/TA	−1.630*	−0.494*	0.351
	(−1.884)	(−1.901)	(0.296)
Stock run-up	−0.023***	−0.013***	−0.018***
	(−2.875)	(−4.661)	(−2.606)
Market run-up	0.027*	0.013*	0.029**
	(1.903)	(1.715)	(2.528)
Stock return volatility	0.422	−0.213	−0.211
	(0.560)	(−1.222)	(−0.840)
Market return volatility	−0.463	1.146***	−0.919
	(−0.355)	(4.674)	(−1.508)
Financial slack/TA	−1.339	−1.950***	−0.780
	(−1.171)	(−4.677)	(−0.608)
Proceeds/TA	−0.620	0.136	1.620
	(−0.755)	(0.813)	(1.626)
LnMaturity	−1.128*	−1.513***	−1.002***
	(−1.784)	(−8.279)	(−2.751)
Industry dummies	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Constant	0.633	11.609***	3.082
		(7.795)	(1.123)
Observations	1,035	6,073	800
F-statistics	7.550**	15, 513.750***	141.890***
Adjusted R^2	0.048	0.070	0.052

Table 2.11: Determinants of stock price reactions of industrials issuers around convertible bond announcements in main regions.
This table presents the results of two-dimension clustered standard errors by Petersen (2009) regression analyses of stock price reactions around convertible bond announcements of industrial issuers in seven main regions of US, Japan, Canada, UK, AU&NZ, Western Europe, and Asia. East-Asian and Anglo-Saxon regions are included for robustness checking purposes. The detailed stata programming code of two-dimension clustered standard errors estimators can be found at his homepage. The dependent variable is the cumulative abnormal return (CAR) measured over the window (ī 1, 1) relative to the announcement date of convertible bond , measured using market model regressions for the estimation period of ī 250 to ī 10 trading day. The detailed definitions of variables can be found in Appendix A. *t*-statistics are reported in parentheses. *, **, and *** indicate significant at 10%, 5%, and 1% significance level, respectively.

Variables	US	Japan	Canada	UK	AU&NZ	Western Europe	Asia	East-Asian	Anglo-Saxon
LnTA	0.542***	ī 0.137	ī 1.771***	ī 1.382**	ī 1.445	ī 0.016	ī 0.562***	ī 0.387***	ī 0.281*
	(3.740)	(ī 1.411)	(ī 3.533)	(ī 2.259)	(ī 1.652)	(ī 0.090)	(ī 4.310)	(ī 3.474)	(ī 1.692)
Debt/TA	1.189	ī 0.998	ī 1.384***	9.778	ī 5.375	1.206	2.734***	1.225	ī 0.546***
	(1.448)	(ī 1.559)	(ī 3.559)	(1.635)	(ī 1.208)	(1.142)	(3.027)	(1.602)	(ī 3.598)
Stock run-up	ī 0.006	ī 0.017***	0.001	ī 0.015	0.004	ī 0.011	ī 0.014***	ī 0.017***	ī 0.007**
	(ī 1.633)	(ī 3.878)	(0.039)	(ī 0.585)	(0.233)	(ī 0.981)	(ī 3.737)	(ī 5.020)	(ī 2.024)
Market run-up	ī 0.005	0.028*	ī 0.055	0.021	ī 0.111*	ī 0.006	0.011	0.020**	ī 0.007
	(ī 0.158)	(1.887)	(ī 1.206)	(0.327)	(ī 1.726)	(ī 0.339)	(1.296)	(2.366)	(ī 0.298)
Stock return volatility	ī 0.618***	0.244	0.137	ī 2.564***	0.077	0.002	ī 0.069	0.147	ī 0.193
	(ī 2.638)	(0.877)	(0.272)	(ī 4.272)	(0.139)	(0.005)	(ī 0.176)	(0.350)	(ī 0.782)
Market return volatility	ī 1.085	0.285	14.636	ī 2.011	ī 14.090**	ī 1.069*	ī 1.456*	ī 0.630	1.768**
	(ī 0.649)	(0.532)	(1.432)	(ī 0.814)	(ī 2.499)	(ī 1.747)	(ī 1.953)	(ī 1.082)	(2.338)
Financial slack/TA	0.165	0.081	ī 5.827	ī 5.175	ī 0.252	ī 1.976	2.116*	0.404	ī 1.572***
	(0.273)	(0.151)	(ī 1.364)	(ī 0.957)	(ī 0.104)	(ī 1.332)	(1.726)	(0.557)	(ī 2.581)
Proceeds/TA	0.583***	ī 1.932***	0.119	ī 1.273*	ī 0.957	0.285***	ī 0.163	0.223	0.284*
	(6.189)	(ī 3.545)	(0.580)	(ī 1.660)	(ī 1.593)	(2.952)	(ī 0.190)	(0.182)	(1.905)
LnMaturity	0.151	ī 0.180	ī 0.912	2.168	0.733	ī 0.402	0.159	ī 0.183	ī 0.940***
	(0.483)	(ī 0.805)	(ī 0.905)	(0.957)	(0.279)	(ī 0.737)	(0.227)	(ī 0.479)	(ī 2.653)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	ī 13.096**	ī 7.630***	24.070	19.462**	59.340***	5.691	14.812***	ī 7.147**	13.729***
	(ī 2.479)	(ī 15.556)	(1.529)	(2.216)	(2.696)	(0.942)	(4.856)	(ī 2.328)	(6.428)
Observations	1,654	1,907	255	109	110	505	1,533	3,180	2,132
F-statistics	11.310***	473.010***	14.780***	15.250***	11.580***	47.850***	47.850***	1,246.160***	422.600***

Table 2.11: (continued)

Variables	US	Japan	Canada	UK	AU&NZ	Western Europe	Asia	East-Asian	Anglo-Saxon
Adjusted R^2	0.092	0.096	0.101	0.296	ī 0.083	0.035	0.041	0.053	0.053

Table 2.12: Determinants of stock price reactions of industrials issuers around convertible bond announcements between different time periods

This table presents the results of two-dimension clustered standard errors by Petersen (2009) regression analyses of stock price reactions around convertible bond announcements of industrial issuers between different sample periods. The detailed stata programming code of two-dimension clustered standard errors estimators can be found at his homepage. The dependent variable is the cumulative abnormal return (CAR) measured over the window (ī 1, 1) relative to the announcement date of convertible bond , measured using market model regressions for the estimation period of ī 250 to ī 10 trading day. Pre-crisis is a sample period covering 1984 to 2006 prior to 2007/2008 financial crisis. Post-crisis has a sample covers from 2009 to 2015 to account for 2007/2008 financial crisis. The detailed definitions of variables can be found in Appendix A. *t*-statistics are reported in parentheses. *, **, and *** indicate significant at 10%, 5%, and 1% significance level, respectively.

	1	2	3	4	5	6	7	8	9
	1984-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2016	All years	Pre-crisis	Post-crisis
LnTA	ī 0.010	ī 0.234***	ī 0.069	ī 0.364	ī 0.774***	ī 0.712***	ī 0.337***	-0.112	-0.670***
	(ī 0.137)	(ī 4.051)	(ī 0.649)	(ī 1.373)	(ī 2.925)	(ī 4.787)	(ī 3.432)	(-1.529)	(-5.971)
Debt/TA	ī 1.501*	1.664	3.451***	1.992	ī 0.646	ī 0.734***	ī 0.492*	0.654	-0.888***
	(ī 1.814)		-7.013	-1.44	(ī 0.354)	(ī 4.082)	(ī 1.836)	(1.033)	(-4.392)
Stock run-up	ī 0.020***	ī 0.016***	ī 0.001	ī 0.018**	ī 0.014***	ī 0.003	ī 0.012***	-0.016***	-0.010**
	(ī 2.921)	(ī 4.070)	(ī 0.102)	(ī 2.532)	(ī 4.111)	(ī 0.485)	(ī 4.580)	(-4.817)	(-2.412)
Market run-up	0.032***	0.012	0.002	0.02	0.019	0.006	0.015**	0.035***	0.008
	-3.817	-1.404	-0.325	-0.892	-1.039	-0.287	-2.427	(4.261)	(0.793)
Stock return volatility	ī 0.390*	ī 0.232	ī 0.375*	ī 0.727**	0.273	ī 0.384***	ī 0.272	-0.462*	-0.217
	(ī 1.712)	(ī 1.454)	(ī 1.927)	(ī 2.041)	-0.369	(ī 2.739)	(ī 1.610)	(-1.894)	(-0.635)
Market return volatility	0.808**	0.932*	0.556	2.074***	ī 1.196	0.424	0.225	0.722*	-0.469
	-2.44	-1.656	-1.003	-3.142	(ī 1.467)	-0.662	-0.743	(1.916)	(-1.155)
Financial slack/TA	0.529	0.462	0.454	ī 1.569	ī 3.693***	ī 0.927	ī 1.917***	-1.320**	-1.613**
	-0.557	-1.626	-0.707	(ī 1.562)	(ī 4.683)	(ī 1.407)	(ī 4.605)	(-2.180)	(-2.057)
Proceeds/TA	ī 2.607***	0.491***	ī 0.091	ī 1.065	ī 0.440	0.226	0.137	0.176	0.102
	(ī 5.791)	-24.131	(ī 0.137)	(ī 0.643)	(ī 1.215)	-1.295	-0.844	(0.518)	(0.462)
LnMaturity	ī 0.375*	ī 0.143	ī 0.775*	ī 1.432***	ī 1.925***	ī 2.648***	ī 1.540***	-0.752***	-2.020***
	(ī 1.765)	(ī 0.481)	(ī 1.784)	(ī 3.987)	(ī 8.247)	(ī 2.886)	(ī 8.176)	(-3.737)	(-3.277)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	No	No	No	No	No	No	No	No	No
1990-1994							ī 0.803***		
							(ī 3.540)		

Table 2.12: (continued)

	1984-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2016	All years	Pre-crisis	Post-crisis
1995-1999							ī 1.965***		
							(ī 7.276)		
2000-2004							ī 2.926***		
							(ī 10.480)		
2005-2009							ī 2.869***		
							(ī 6.807)		
2010-2016							ī 2.330***		
							(ī 5.953)		
Constant	4.994***	ī 1.611	0.654	21.939***	14.033**	16.661***	14.693***	2.964**	10.295***
	-2.587	(ī 0.826)	-0.286	-6.438	-2.3	-6.321	-8.256	(2.228)	(4.852)
Observations	1,147	849	945	1,009	923	1,200	6,073	5,404	1,958
F-statistics	10.020***	507.330***	156.210***	74.070***	82.380***	93.550***	282.010***	10.17***	8.27***
Adjusted R^2	0.081	0.049	0.026	0.09	0.041	0.073	0.063	0.050	0.072

Table 2.13: Country level factors and stock price reactions of industrials issuers around convertible bond announcements.
This table presents the results of two-dimension clustered standard errors by Petersen (2009) regression analyses of fundamental factors and stock price reactions around convertible bond announcements of industrial issuers. The detailed stata programming code of two-dimension clustered standard errors estimators can be found at his homepage. The dependent variable is the cumulative abnormal return (CAR) measured over the window (ī 1, 1) relative to the announcement date of convertible bond , measured using market model regressions for the estimation period of ī 250 to ī 10 trading day. The detailed definitions of variables can be found in Appendix A. *t*-statistics are reported in parentheses. *, **, and *** indicate significant at 10%, 5%, and 1% significance level, respectively.

Variables	1	2	3	4	5	6
LnTA	ī 0.364***	ī 0.282***	ī 0.344***	ī 0.373***	ī 0.296***	ī 0.342***
	(ī 3.694)	(ī 3.382)	(ī 3.553)	(ī 3.753)	(ī 2.798)	(ī 3.711)
Debt/TA	ī 0.540**	ī 0.611***	ī 0.517**	ī 0.533***	0.802	ī 0.526***
	(ī 2.570)	(ī 3.777)	(ī 2.409)	(ī 3.172)	(1.024)	(ī 2.855)
Stock run-up	ī 0.014***	ī 0.012***	ī 0.014***	ī 0.013***	ī 0.014***	ī 0.013***
	(ī 4.733)	(ī 4.177)	(ī 4.593)	(ī 4.197)	(ī 4.773)	(ī 4.591)
Market run-up	0.026***	0.019**	0.025***	0.024***	0.031***	0.026***
	(2.963)	(2.109)	(2.911)	(2.641)	(3.012)	(2.966)
Stock return volatility	ī 0.379**	ī 0.303*	ī 0.366**	ī 0.527***	ī 0.420**	ī 0.430**
	(ī 2.174)	(ī 1.876)	(ī 2.101)	(ī 3.444)	(ī 2.084)	(ī 2.447)
Market return volatility	0.205	ī 0.078	0.270	0.442	0.306	0.258
	(0.551)	(ī 0.214)	(0.709)	(1.106)	(0.680)	(0.628)
Financial slack/TA	ī 1.886***	ī 1.135***	ī 1.783***	ī 1.648***	ī 1.989***	ī 1.730***
	(ī 4.407)	(ī 2.723)	(ī 4.245)	(ī 3.889)	(ī 4.319)	(ī 3.867)
Proceeds/TA	0.085	0.119	0.072	0.120	0.066	0.094
	(0.453)	(0.694)	(0.373)	(0.689)	(0.254)	(0.505)
LnMaturity	ī 0.951***	ī 0.056	ī 0.925***	ī 1.157***	ī 0.651***	ī 0.934***
	(ī 4.338)	(ī 0.271)	(ī 4.231)	(ī 4.731)	(ī 2.974)	(ī 4.118)
Short selling ban dummy	ī 2.174***					
	(ī 4.206)					
GDP		ī 1.031***				
		(ī 7.741)				
GDP growth			0.146***			
			(3.271)			

Table 2.13: (continued)

Variables	1	2	3	4	5	6
10 year government bond yield				0.143***		
				(2.914)		
Stock market capitalization					0.278**	
					(2.352)	
Government debt/GDP%						ī 0.015***
						(ī 6.156)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	No	No	No	No	No	No
Constant	12.004***	38.731***	ī 2.801	ī 1.909	ī 3.658*	ī 1.111
	(6.486)	(9.186)	(ī 1.568)	(ī 1.077)	(ī 1.774)	(ī 0.618)
Observations	6,073	6,073	6,073	5,813	5,352	6,026
F-statistics	39.810***	139.750***	515.810***	248.790***	844.280***	7,376.000***
Adjusted R^2	0.044	0.073	0.048	0.049	0.039	0.051

Table 2.14: Investor protection and stock price reactions of industrials issuers around convertible bond announcements.
This table presents the results of two-dimension clustered standard errors by Petersen (2009) regression analyses of investor protection and stock price reactions around convertible bond announcements of industrial issuers. The detailed stata programming code of two-dimension clustered standard errors estimators can be found at his homepage. The dependent variable is the cumulative abnormal return (CAR) measured over the window (ī 1, 1) relative to the announcement date of convertible bond , measured using market model regressions for the estimation period of ī 250 to ī 10 trading day. The detailed definitions of variables can be found in Appendix A. *t*-statistics are reported in parentheses. *, **, and *** indicate significant at 10%, 5%, and 1% significance level, respectively.

Variables	7	8	9	10	11
LnTA	ī 0.332***	ī 0.316***	ī 0.291***	ī 0.311***	ī 0.305***
	(ī 3.695)	(ī 3.359)	(ī 3.182)	(ī 3.343)	(ī 3.412)
Debt/TA	ī 0.525**	ī 0.486**	ī 0.522**	ī 0.519**	ī 0.477**
	(ī 2.287)	(ī 2.023)	(ī 2.453)	(ī 2.048)	(ī 2.024)
Stock run-up	ī 0.012***	ī 0.012***	ī 0.012***	ī 0.012***	ī 0.012***
	(ī 4.511)	(ī 4.764)	(ī 4.655)	(ī 4.582)	(ī 4.453)
Market run-up	0.015**	0.010	0.010	0.012	0.012*
	(2.027)	(1.480)	(1.320)	(1.622)	(1.796)
Stock return volatility	ī 0.129	ī 0.223	ī 0.218	ī 0.217	ī 0.235
	(ī 0.721)	(ī 1.251)	(ī 1.186)	(ī 1.229)	(ī 1.361)
Market return volatility	1.060***	0.870***	0.966***	1.029***	0.891***
	(3.638)	(2.680)	(2.994)	(3.996)	(3.639)
Financial slack/TA	ī 1.688***	ī 1.736***	ī 1.633***	ī 1.890***	ī 1.775***
	(ī 4.066)	(ī 4.003)	(ī 3.806)	(ī 4.614)	(ī 4.174)
Proceeds/TA	0.168	0.153	0.146	0.140	0.164
	(1.041)	(0.920)	(0.865)	(0.837)	(1.016)
LnMaturity	ī 1.073***	ī 1.141***	ī 1.302***	ī 1.265***	ī 1.064***
	(ī 5.421)	(ī 6.017)	(ī 7.108)	(ī 6.293)	(ī 5.614)
Antidirector rights (LLSV, 1998)	ī 0.732***				
	(ī 6.613)				
Creditor rights (LLSV, 1998)		0.738***			
		(4.745)			
Legal Enforcement_PCA (LLSV, 1998)			ī 0.498***		
			(ī 3.679)		

Table 2.14: (continued)

Variables	7	8	9	10	11
Antidirector rights (Djankov et al., 2008)				0.508***	
				(4.144)	
Creditor rights (Djankov et al., 2007)					0.893***
					(6.717)
Industry dummies	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Constant	15.239***	8.690***	10.208***	ī 4.164***	9.716***
	(9.026)	(4.867)	(5.596)	(ī 2.617)	(6.898)
Observations	5,926	5,926	5,926	6,061	6,051
F-statistics	153.210***	304.010***	496.710***	750.010***	401.270***
Adjusted R^2	0.081	0.080	0.077	0.074	0.081

Table 2.15a: Convertible bond specific factors and stock price reactions of industrials issuers around convertible bond announcements.

This table presents the results of two-dimension clustered standard errors by Petersen (2009) regression analyses of convertible bond specific factors and stock price reactions around convertible bond announcements of industrial issuers. The detailed stata programming code of two-dimension clustered standard errors estimators can be found at his homepage. The dependent variable is the cumulative abnormal return (CAR) measured over the window (ī 1, 1) relative to the announcement date of convertible bond , measured using market model regressions for the estimation period of ī 250 to ī 10 trading day. The detailed definitions of variables can be found in Appendix A. *t*-statistics are reported in parentheses. *, **, and *** indicate significant at 10%, 5%, and 1% significance level, respectively.

Variables	1	2	3	4	5	6	7	8
LnTA	ī 0.260***	ī 0.337***	ī 0.296***	ī 0.306***	ī 0.309***	ī 0.278***	ī 0.311***	ī 0.296**
	(ī 2.934)	(ī 3.457)	(ī 2.951)	(ī 3.304)	(ī 3.254)	(ī 3.156)	(ī 3.055)	(ī 2.489)
Debt/TA	ī 0.421*	ī 0.496*	ī 0.509**	ī 0.563**	ī 0.498*	ī 0.506**	ī 0.539**	0.112
	(ī 1.724)	(ī 1.870)	(ī 2.365)	(ī 2.449)	(ī 1.960)	(ī 2.121)	(ī 2.485)	(0.304)
Stock run-up	ī 0.011***	ī 0.013***	ī 0.011***	ī 0.014***	ī 0.013***	ī 0.013***	ī 0.011***	ī 0.011***
	(ī 3.627)	(ī 4.666)	(ī 3.321)	(ī 5.306)	(ī 4.681)	(ī 4.689)	(ī 3.721)	(ī 2.989)
Market run-up	0.019**	0.013*	0.017*	0.017**	0.013*	0.015**	0.009	0.018**
	(2.523)	(1.733)	(1.914)	(2.028)	(1.719)	(2.032)	(1.079)	(2.043)
Stock return volatility	ī 0.344*	ī 0.206	ī 0.280	ī 0.033	ī 0.212	ī 0.205	ī 0.144	0.008
	(ī 1.903)	(ī 1.189)	(ī 1.452)	(ī 0.161)	(ī 1.222)	(ī 1.180)	(ī 0.756)	(0.028)
Market return volatility	1.241***	1.215***	0.801**	0.913***	1.143***	1.240***	1.059***	1.670***
	(4.092)	(4.978)	(2.208)	(3.029)	(4.726)	(4.690)	(3.363)	(3.582)
Financial slack/TA	ī 1.586***	ī 1.906***	ī 1.704***	ī 1.947***	ī 1.957***	ī 1.842***	ī 1.842***	ī 2.411***
	(ī 3.748)	(ī 4.601)	(ī 3.595)	(ī 4.741)	(ī 4.649)	(ī 4.251)	(ī 4.386)	(ī 3.885)
Proceeds/TA	0.170	0.113	0.208	0.140	0.136	0.154	ī 0.007	0.352*
	(1.087)	(0.674)	(1.319)	(0.829)	(0.817)	(0.927)	(ī 0.033)	(1.802)
LnMaturity	ī 1.566***	ī 1.573***	ī 1.762***	ī 1.408***	ī 1.512***	ī 1.479***	ī 1.612***	ī 0.905***
	(ī 6.791)	(ī 8.438)	(ī 7.534)	(ī 8.058)	(ī 8.292)	(ī 8.243)	(ī 6.559)	(ī 3.395)
S&P rating dummy	ī 0.038**							
	(ī 2.362)							
S&P rating investment grade dummy		1.226***						
		(4.372)						

Table 2.15a: (continued)

Variables	1	2	3	4	5	6	7	8
Conversion premium			ī 0.334					
			(ī 1.476)					
Delta				ī 1.663***				
				(ī 4.139)				
First issue					ī 0.048			
					(ī 0.308)			
Nonī callable dummy						ī 0.667**		
						(ī 1.984)		
Years to call protection dummy							0.016	
							(0.431)	
Gross spread in percent								ī 0.188
								(ī 0.798)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	ī 5.442***	11.991***	0.072	13.262***	ī 1.907	ī 1.801	4.226**	ī 3.780
	(ī 2.742)	(7.666)	(0.039)	(5.552)	(ī 1.213)	(ī 1.203)	(2.175)	(ī 1.459)
Observations	5,677	6,073	3,919	5,488	6,073	6,073	5,014	3,007
F-statistics	607.650***	197.280***	1,762.830***	160.710***	250.710***	3,337.580***	89.200***	94.640***
Adjusted R^2	0.084	0.072	0.076	0.086	0.070	0.071	0.076	0.080

Table 2.15b: Convertible bond specific factors and stock price reactions of industrials issuers around convertible bond announcements.

This table presents the results of two-dimension clustered standard errors by Petersen (2009) regression analyses of convertible bond specific factors and stock price reactions around convertible bond announcements of industrial issuers. The detailed stata programming code of two-dimension clustered standard errors estimators can be found at his homepage. The dependent variable is the cumulative abnormal return (CAR) measured over the window (ī 1, 1) relative to the announcement date of convertible bond , measured using market model regressions for the estimation period of ī 250 to ī 10 trading day. The detailed definitions of variables can be found in Appendix A. *t*-statistics are reported in parentheses. *, **, and *** indicate significant at 10%, 5%, and 1% significance level, respectively.

Variables	9	10	11	12	13
LnTA	ī 0.182*	ī 0.336***	ī 0.316***	ī 0.318***	ī 0.292***
	(ī 1.851)	(ī 3.453)	(ī 3.394)	(ī 3.355)	(ī 3.082)
Debt/TA	ī 0.485**	ī 0.445*	ī 0.536**	ī 0.493*	ī 0.510**
	(ī 2.202)	(ī 1.903)	(ī 2.118)	(ī 1.892)	(ī 1.981)
Stock run-up	ī 0.012***	ī 0.013***	ī 0.012***	ī 0.013***	ī 0.013***
	(ī 3.862)	(ī 5.057)	(ī 4.604)	(ī 4.673)	(ī 4.668)
Market run-up	0.011	0.011	0.012*	0.013*	0.013*
	(1.320)	(1.511)	(1.667)	(1.694)	(1.874)
Stock return volatility	ī 0.105	ī 0.114	ī 0.179	ī 0.216	ī 0.192
	(ī 0.443)	(ī 0.606)	(ī 1.022)	(ī 1.245)	(ī 1.088)
Market return volatility	1.091***	0.847***	1.001***	1.126***	1.017***
	(3.159)	(2.846)	(3.926)	(4.677)	(3.937)
Financial Slack/TA	ī 1.814***	ī 1.903***	ī 1.793***	ī 1.958***	ī 1.912***
	(ī 4.289)	(ī 4.653)	(ī 4.175)	(ī 4.713)	(ī 4.629)
Proceeds/TA	0.253*	ī 0.057	0.117	0.137	0.151
	(1.887)	(ī 0.251)	(0.689)	(0.823)	(0.930)
LnMaturity	ī 1.452***	ī 1.522***	ī 1.455***	ī 1.526***	ī 1.495***
	(ī 6.005)	(ī 6.446)	(ī 8.494)	(ī 8.355)	(ī 7.468)
Yield-to-maturity	ī 0.012				
	(ī 0.414)				
Coupon		ī 0.195***			
		(ī 3.577)			

Table 2.15b: (continued)

Variables	9	10	11	12	13
Private placement dummy			ī 1.114***		
			(ī 4.578)		
Multiple tranches dummy				0.716***	
				(2.580)	
Acquisition dummy					
Capital Expenditure dummy					0.369
					(0.752)
General Corporate Purposes dummy					ī 0.177
					(ī 0.348)
Others dummy					ī 0.988
					(ī 1.462)
Debt refinancing dummy					0.108
					(0.235)
Working Capital dummy					0.063
					(0.111)
Industry dummies	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Constant	4.003**	7.934***	11.662***	11.817***	ī 2.099
	(1.995)	(4.377)	(8.030)	(7.959)	(ī 1.303)
Observations	4,732	5,648	6,073	6,073	6,073
F-statistics	38.200***	36.500***	81.170***	147.500***	264.970***
Adjusted R^2	0.070	0.075	0.075	0.071	0.071

Table 2.16: Multilevel regression analysis for country level factors and stock price reactions of industrials issuers around convertible bond announcements.

This table presents the results of multilevel regression analyses of country level factors and stock price reactions around convertible bond announcements of industrial issuers. The dependent variable is the cumulative abnormal return (CAR) measured over the window (ī 1, 1) relative to the announcement date of convertible bond , measured using market model regressions for the estimation period of ī 250 to ī 10 trading day. The detailed definitions of variables can be found in Appendix A. *t*-statistics are reported in parentheses. *, **, and *** indicate significant at 10%, 5%, and 1% significance level, respectively.

Variables	1	2	3	4	5	6
Level 1 variables						
LnTA	ī 0.306***	ī 0.220***	ī 0.295***	ī 0.300***	ī 0.211***	ī 0.274***
	(ī 5.749)	(ī 4.162)	(ī 5.537)	(ī 5.638)	(ī 3.554)	(ī 5.121)
Debt/TA	ī 0.522***	ī 0.568***	ī 0.522***	ī 0.517***	1.385***	ī 0.522***
	(ī 3.272)	(ī 3.607)	(ī 3.273)	(ī 3.273)	(3.149)	(ī 3.277)
Stock run-up	ī 0.012***	ī 0.011***	ī 0.012***	ī 0.011***	ī 0.012***	ī 0.012***
	(ī 6.757)	(ī 5.801)	(ī 6.740)	(ī 5.943)	(ī 6.156)	(ī 6.538)
Market run-up	0.014**	0.008	0.012**	0.014**	0.015***	0.014***
	(2.561)	(1.517)	(2.321)	(2.517)	(2.624)	(2.646)
Stock return volatility	ī 0.097	ī 0.088	ī 0.097	ī 0.233***	ī 0.122	ī 0.133*
	(ī 1.417)	(ī 1.298)	(ī 1.423)	(ī 3.343)	(ī 1.573)	(ī 1.931)
Market return volatility	0.518*	0.222	0.455	0.583**	0.757**	0.648**
	(1.815)	(0.792)	(1.598)	(2.005)	(2.460)	(2.232)
Financial slack/TA	ī 1.893***	ī 1.214***	ī 1.814***	ī 1.709***	ī 1.871***	ī 1.755***
	(ī 6.034)	(ī 3.867)	(ī 5.777)	(ī 5.420)	(ī 5.608)	(ī 5.587)
Proceeds/TA	0.187*	0.205*	0.185*	0.239**	0.201	0.209*
	(1.675)	(1.862)	(1.664)	(2.171)	(1.476)	(1.881)
LnMaturity	ī 1.099***	ī 0.484***	ī 1.050***	ī 1.082***	ī 0.919***	ī 0.981***
	(ī 6.064)	(ī 2.619)	(ī 5.787)	(ī 5.858)	(ī 4.840)	(ī 5.384)
Level 2 variables						
Short selling ban dummy	ī 1.050					
	(ī 1.066)					
GDP		ī 0.993***				
		(ī 13.006)				
GDP growth			0.126***			
			(3.842)			

Table 2.16: (continued)

Variables	1	2	3	4	5	6
10 year government bond yield				0.161***		
				(3.094)		
Stock market capitalization					0.518***	
					(6.805)	
Government debt/GDP%						ī 0.015***
						(ī 6.925)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	No	No	No	No	No	No
Constant	7.091	32.203***	6.833	6.960	3.061	7.551*
	(1.559)	(6.601)	(1.504)	(1.553)	(0.661)	(1.662)
Random effects						
Residual	0.057**	0.056**	0.057**	0.057**	0.061**	0.057**
Intercept	0.273**	0.271	0.275**	0.311**	0.299**	0.308**
R-squared	0.073	0.101	0.075	0.074	0.081	0.078
Observations	6,061	6,061	6,061	5,801	5,340	6,015

Table 2.17: Multilevel regression analysis for investor protection and stock price reactions of industrials issuers around convertible bond announcements.

This table presents the results of multilevel regression analyses of investor protection and stock price reactions around convertible bond announcements of industrial issuers. The dependent variable is the cumulative abnormal return (CAR) measured over the window (ī 1, 1) relative to the announcement date of convertible bond , measured using market model regressions for the estimation period of ī 250 to ī 10 trading day. The detailed definitions of variables can be found in Appendix A. *t*-statistics are reported in parentheses. *, **, and *** indicate significant at 10%, 5%, and 1% significance level, respectively.

Variables	1	2	3	4	5
Level 1 variables					
LnTA	ī 0.326***	ī 0.316***	ī 0.330***	ī 0.316***	ī 0.292***
	(ī 6.082)	(ī 5.944)	(ī 6.147)	(ī 5.959)	(ī 5.434)
Debt/TA	ī 0.528***	ī 0.539***	ī 0.508***	ī 0.495***	ī 0.547***
	(ī 3.312)	(ī 3.381)	(ī 3.192)	(ī 3.116)	(ī 3.432)
Stock run-up	ī 0.012***	ī 0.012***	ī 0.012***	ī 0.011***	ī 0.012***
	(ī 6.363)	(ī 6.543)	(ī 6.568)	(ī 6.293)	(ī 6.598)
Market run-up	0.015***	0.012**	0.011*	0.013**	0.011**
	(2.736)	(2.306)	(1.935)	(2.362)	(2.040)
Stock return volatility	ī 0.113*	ī 0.111	ī 0.114*	ī 0.144**	ī 0.107
	(ī 1.650)	(ī 1.619)	(ī 1.660)	(ī 2.100)	(ī 1.555)
Market return volatility	0.965***	0.490*	0.333	0.447	0.435
	(3.326)	(1.727)	(1.111)	(1.577)	(1.456)
Financial slack/TA	ī 1.705***	ī 1.835***	ī 1.656***	ī 1.724***	ī 1.594***
	(ī 5.391)	(ī 5.852)	(ī 5.253)	(ī 5.502)	(ī 5.010)
Proceeds/TA	0.180	0.186*	0.193*	0.195*	0.198*
	(1.619)	(1.674)	(1.741)	(1.756)	(1.778)
LnMaturity	ī 1.024***	ī 0.914***	ī 0.742***	ī 0.771***	ī 0.912***
	(ī 5.652)	(ī 4.906)	(ī 3.968)	(ī 4.146)	(ī 4.958)
Level 2 variables					
Antidirector rights (LLSV, 1998)	ī 0.671***				
	(ī 6.146)				
Antidirector rights (Djankov et al., 2008)		0.455***			
		(4.170)			
Creditor rights (LLSV, 1998)			0.764***		
			(7.318)		
Creditor rights (Djankov et al., 2007)				0.850***	
				(7.508)	

Table 2.17: (continued)

Variables	1	2	3	4	5
Legal Enforcement_PCA (LLSV, 1998)					ī 0.470***
					(ī 5.867)
Industry dummies	Yes	Yes	Yes	Yes	Yes
Year dummies	No	No	No	No	No
Constant	7.992*	6.050	5.453	5.268	6.293
	(1.765)	(1.330)	(1.202)	(1.162)	(1.388)
Random effects					
Residual	0.057**	0.057**	0.056**	0.056**	0.057**
Intercept	0.199	0.328**	0.270	0.290	0.253**
R-squared	0.086	0.078	0.076	0.081	0.080
Observations	5,926	6,061	5,926	6,051	5,926

3 The determinants of geographic proximate and reputable bookrunner selection

3.1 Introduction

Two theoretical seminal papers by Akerlof (1970) and Myers and Majluf (1984) highlight that the information asymmetry between issuers and potential investors lead to market failure because it is difficult for investors to obtain reliable private information when insiders who possess this information may act on their own self-interest. Consequently, corporate firms tend to employ investment banks to alleviate asymmetric information in the process of issuing convertible bonds to potential investors. In particular, corporate firms hire bookrunners to certify the value of the issued debts with a fee for using either proximity or reputation of the bookrunners to effectively place their debts in the marketplace.

A emergent body of literature highlight that soft information production matters for local investment banks to gain more informational advantage and to provide more comparative underwriting services for issuers in bond offerings than nonlocal underwriters (Butler, 2008; Lau and Yu, 2010). Butler (2008) highlights that local investment banks could obtain soft information through daily local news, instantaneous awareness of the local economy, and personal relationship with key local investors and issuing body. Liberti and Petersen (2017) define soft information as that which is usually communicated in text which includes ñopinions, ideas, rumours, economic projections, management statement of managementøs future plans, and market commentaryò. According to Berger and Udell (1995) and Petersen and Rajan (1994) soft information is usually obtained by lenders through lending relationships with firms in the past. In addition, Stein (2002) and Uzzi (1999) suggest that the soft information is difficult to communicate to others, document on written paper or store electronically. For example, a lending officer with a local presence may use subjective judgement through past dealing experiences on the behaviour and attribute of borrower prior to approve or reject the loan request. Consistently, Liberti (2017) finds that soft information plays a crucial role for more authority loan officers to make lending decisions. Rajan, Seru, and Vig (2010; 2015) argue that the statistical default models are blamed for creating subprime mortgage crisis in 2007 because these models fail to make accurate predictions on loan defaults and risk assessment of loans as they rely entirely on hard information[5] variables and ignore soft information.

Another strand of literature suggests that certification provided by reputable investment banks serve as a bonding mechanism to alleviate the asymmetric information problems between shareholders and the investors in capital raising (Booth and Smith, 1986; Carter and Manaster, 1990; Megginson and Weiss, 1991; Chemmanur and Fulghieri, 1994). Moreover, numerous studies suggest that reputable banks have better placement ability in handling complexity design particularly issue size, bond maturity and call option of corporate bond offerings (Carbó-Valverde et al., 2017; Andres et al., 2014; Corwin and Schultz, 2005; Fang, 2005). However, Gopalan, Nanda, and Yerramilli (2011) and Andres, Betzer, and Limbach (2014) argue that dominant lead underwriters have market power that shield

[5] Liberti and Petersen (2017) and Petersen (2004) define hard information as ñfinancial statements, the history of payments which were made on time, stock returns, and the quantity of output as being hard informationò.

them from suffering reputation damage even when borrowers declare bankruptcies in the syndicated loan market.

This study aims to address three central research questions on these two opposing literature of the choice of proximate and reputable bookrunner selections. First, this study examines what determines the geographic choice of underwriter for convertible bonds. Second, this study examines what determines the choice of appointing a reputable bookrunner for convertible bond offerings. Third, I examine whether bank with economies of scale advantage is more likely to be chosen to underwrite convertible bonds. This chapter addresses the above research questions by examining 8,069 convertible bond offerings in 30 countries from January 1984 to December 2015. I obtain firm level announcements of convertible bonds data from the Securities Data Corporation Platinumȏs Global New Issues Database (hereafter SDC). I then merge the announcements data from SDC with accounting data of a firm from Worldscope. Following Lau and Yu (2010) in addressing the impact of geographic proximity on the selection of lead underwriter in the international bond market in 31 countries, I construct two proximity variables of domestic and regional bookrunner and one reputation variable of reputable bookrunner. More specifically, domestic bookrunner is a dummy variable of one if a domestic bank domiciled in the same country with the issuer lead underwrites the deal. Regional bookrunner is a dummy variable equal to one if a bank from the same region with the issuer lead underwrites the deal. The main regional classification is based on Morgan Stanley Capital International (MSCI) in world market classifications. Reputable bookrunner is measured by either Top-3 in country level league table or Top-21 in global league table in convertible bond offerings based on Megginson and Weiss (1991) market share rank.

To answer the first question, I use a number of potential determinants include firm characteristics, bond characteristics, market characteristics and country level factors which are identified from geographic proximate lead underwriter (Lau and Yu, 2010; Butler, 2008) and reputable underwriters (Carbó-Valverde et al.,2017; Fernando et al., 2015; Andres et al., 2014; Corwin and Schultz, 2005; Fang, 2005; Fernando et al., 2005). Using probit regression analysis, I find that domestic and regional bookunners are associated with publicly offered convertible bonds and more number of bookrunners participation. This suggests that domestic and regional bookrunners could easily place debt due to soft information advantage and joint collaboration with other syndicate members in bookbuilding to provide more information production and market making. Economically, predicted probabilities between publicly offered and non-publicly offered by domestic bookrunners differ by approximately 18.90% and regional bookrunners by 16.80%. Consistent to Lau and Yu (2010) and Butler (2008) , I find that domestic and regional bookrunners have better soft informational advantage of convertible issuers and more likely to underwrite longer maturity and risky convertible bonds. The economic impact of predicted probabilities of hiring a domestic and regional bookrunners increases to within a range of 4% to 5% for nonrated and 75th percentile maturity.

To answer the second question, I find that reputable bookrunner is more likely to underwrite convertible bond offerings by convertible bond issuers with larger firm size, higher financial slack and higher stock run-up and lower stock return volatility. Consistent with Fang (2005) argument that reputable banks are more likely to underwriter larger and less risky firm because prestigious investment banks need to maintain its reputation in underwriting by charging a higher fee on their clients. Additionally, I also find that reputable bookrunners underwrite more complex convertible bonds particularly longer maturity and call option. This supports call placement complexity capacity by reputable banks (Carbó-Valverde et al., 2017; Andres et al., 2014; Fang, 2005). However, I find that reputable underwriters tend to place convertible bond with lower or no credit rating. This may suggest that reputable underwriters may shift away from certification role to use market-power resulting from bank consolidation to extract more rents from issuers issuing risky convertible bond as they do not suffer reputational losses when their borrowers are defaulted. Consistent with the prediction of Corwin and Schultz (2005), I find that reputable bookrunners are more likely to have larger syndicate members in bookbuilding. Additionally, I document conflicting findings that reputable bookrunners prefer to underwrite lower risk firms but are also to underwrite risky bonds. This suggests that reputable bookrunners may use market power to underwrite risky bonds but try to reduce their reputational loss to provide more underwriting services to less risky issuing firms.

In response to question three, I follow Fang (2005) and Golubov, Petmezas, and Travlos (2012) to examine the impact of economies of scale on the underwriter selection. The results show that domestic bookrunner and reputable bookrunners with economies of scale are more likely to be hired by convertible bond issuers due to their extensive distributional networks and better informational advantage. After controlling for size of economic and size of convertible bond market, I find that the economies of scale is an insignificant determining factor for regional bookrunner to obtain underwriting contracts in convertible bonds.

An important departure from the literature is that this study examines the determinants of two main contrasting investment bank literature on the geographic proximity and reputable bookrunner selection on global convertible bond offerings. This is usually done separately on literature focus on either reputation (Carbó-Valverde et al., 2017; Andres et al., 2014; Fang, 2005) or geographic proximity in bond offerings (Lau and Yu, 2010; Butler, 2008) explicitly. To my knowledge, there is no study addressing what factors determine the reputable and geographic proximate bookrunner selection in convertible bond offerings. Additionally, this study extends Fang (2005) and Golubov et al. (2012) studies on the U.S. to examine whether underwriters with economies of scale are more likely to obtain underwriting contracts from convertible bond issuers in the context of global convertible bond offerings. This study contributes to investment bank ranking in global capital by constructing the global and country-level league tables to clearly highlight the dominant investment banks in global convertible bond offerings. Finally, I provide detailed geographic distribution of domestic, regional and reputable bookrunner selection in the context of 30 countries in convertible bond offerings.

This study provides several important policy suggestions for the key players in the convertible bond market. In particular, corporate borrowers could benefit from the suggested significant determinants to carefully choose reputable or geographic proximate financial intermediary in convertible bond underwriting. Investors could gain benefit and confidence in investing convertible bonds based on the certification role by reputable bookrunners and soft information advantage by proximate bookrunners. Undoubtedly, bookrunners may benefit from this study as excessive use of market power in underwriting to extract rents from borrowers may prompt legal actions by regulators to strictly regulate the underwriting market.

The remainder of this chapter is organized as follows. Section 2 describes the literature review on the choice of geographic proximate underwriting bank. Section 3 describes literature review on the choice of geographic investment bank reputation. Section 4 describes the data and summary statistics, Section 5 presents and discusses empirical findings. Section 6 concludes.

3.2 Literature review on the choice of geographic proximate underwriting bank

In this section, I provide detailed explanation to why geographic distance matters for investment banks and the potential determinants of choice of geographic proximate underwriting bank in securities underwriting.

Diamond (1984) points out that a financial intermediary is capable of providing delegated monitoring on the private information to effectively resolve moral hazard problems between borrowers and lenders. This is because a viable financial intermediary who monitors many entrepreneurs with independently distributed projects faces less severe trade-off between risk sharing and monitory incentives in providing an efficient delegated monitoring services. He then argues that diversification within an intermediary by hiring more number of agents working together within the intermediary organization to monitor a large number of borrowers is the most viable approach for financial intermediary to provide efficient delegated monitoring services. The choice of underwriting bank is important for issuers to provide information production, certification, analyst coverage and market making (Corwin and Schultz, 2005). The main objective in this study is to explore what determines the selection of a geographically proximate underwriting bank in international convertible bond underwriting.

A burgeoning literature highlights that underwriters with a geographic proximity advantage have comparative advantage to collect soft information to evaluate issuers effectively and to provide better lending and underwriting services (see Stein, 2002; Berger et al., 2005; Corwin and Schultz, 2005; Hauswald and Marquez, 2006; Butler, 2008; Lau and Yu, 2010). Berger, Demsetz, and Strahan (1999) highlight that larger financial institutions created following bank consolidation may suffer organizational diseconomies for providing lending services to informationally opaque small businesses because it requires banks to gain information continuously over time through relationships with the operations, owner and local market of small businesses. In addition, Coval and Moskowitz (2001) demonstrate that physical distance serves an important factor for fund managers to obtain informational advantage and earn substantial abnormal returns in nearby investments. Stein (2002) provides a more concreate theoretical reasoning that distance within that organizational structure of banks matters for line managers particularly in decentralized and less hierarchical banks to use soft information production approach in small-business lending because managers can act on the information they produce. However, he suggests that banks with multiple layers of management may suffer organizational diseconomies that prevent them from providing information-intensive services and as a result they rely on hard information to make lending decision.

Petersen and Rajan (2002) highlight that advances in information technology have gradually shifted the focus of lenders in small business lending in the United States from soft information gathering through geographic proximity to hard information collection for distant lending. As a result, they argue that the nature of lending has changed such that banks now put more emphasis on frequent ex-post monitoring and quick intervention than strict ex-ante screening and costly ex-post monitoring. Consistent to a theoretical rationale of Stein (2002), Berger et al. (2005) find that small banks have a comparative advantage over large banks to collect and act on soft information in lending. By contrast, they find that large banks rely less on lending relationship with borrowers, lend at a greater distance and do not improve credit constraints effectively. Hauswald and Marquez (2006) find that distance between banks and borrowers is an important factor for screening process prior to making efficient lending decisions because banks may obtain less precise information for distant loan applicants. Their model suggests that an increased competition reduces rents of intermediaries and thereby decreases their incentives to produce private information.

Similarly, Mian (2006) shows that foreign banks have limitation in cultural and geographical distance which make them comparatively disadvantaged to lend to informationally difficult but profitable firms that require soft information-based based on relational loans. Liberti and Mian (2009) find that the greater the geographical distance between the information collecting agent and the loan approving officer, the lesser the reliance on subjective information than objective information in decision making. Using small-business lending data, Agarwal and Hauswald (2010) show that the borrower proximity facilitates the soft information collection ability by local lenders and thereby enhances the quality of lending. In addition, they demonstrate that distance between bank and borrower for soft information gathering far outweighs the beneficial impact of subjective intelligence on credit delinquency. They also find that distance creates a trade-off in the availability and pricing of credit faced by firms in getting finance from the banks. In particular, a firm nearer to the bank is more likely to be offered credit but for a higher charges. Arena and Dewally (2017) find that distant firms at an informational disadvantage are more likely to incur higher cost of debt and prevent them from using prestigious banks in underwriting and lending.

In securities underwriting syndicates, however, Corwin and Schultz (2005) find that underwriters located near to an issuer but not based in the issuerǿs state are more likely to be chosen because book managers could identify potential syndicate members easily and place shares effortlessly to local investors. Loughran (2008) suggests that costs of producing information for rural firms is more expensive than urban firms due to fewer investors in their proximity and this leads to rural firms hiring less reputable underwriters to underwrite their equity offerings. Butler (2008) argues that local investment banks have better access to soft information and comparative advantage to evaluate local issuers and place higher credit risk and unrated U.S. municipal bonds. This is because high-risk and unrated bonds are typically difficult for investment banks to evaluate and market to potential investors due to lack of external certification from a bond rating agency. Similarly, Lau and Yu (2010) find that geographically proximate banks are more likely to underwrite risky and un-rated corporate bonds because they have better access to private information on issuing companies in international corporate bond underwriting.

Proximate banks might have better information because they can easily meet and talk to senior management, observe daily events from local news, and make frequent site visits. In addition, corporate bond issuers, particularly with high-risk bonds, are more likely to benefit from using informationally advantageous proximate banks as they expect these banks to offer cheaper but competitive underwriting services.

To my knowledge, Butler (2008) and Lau and Yu (2010) are the only two studies exploring the potential determinants for the choice of underwriter that has geographical proximity advantage in bond underwriting. Using a first-stage probit estimator, Butler (2008) finds that larger issue size and high-volume issuers are significantly and positively associated with local bookrunner selection. In addition, the author finds that bond rating, nonrated bond, underwriter reputation, maturity, credit-enhanced bond are unrelated to the decision to hire a local underwriter.

In a large sample of international corporate bond offerings from 31 countries, Lau and Yu (2010) find that proximate domestic and regional lead underwriters are more likely to be chosen for larger issue size, greater syndicate size, longer maturity, risky bonds and lower bond issue cost because geographic proximity facilitates greater access to issuersô private information. However, they do not provide any theoretical explanations to this finding other than information opaqueness advantage by the local banks in accessing the risky bonds. In addition, they show the selection of proximate banks is negatively associated with the reputation of the lead underwriter. Moreover, Lau and Yu (2010) find no relation between the issuing companyôs credit rating and the selection of both domestic and regional underwriters. Motivated by Butler (2008) and Lau and Yu (2010), this study aims to test a hypothesis that domestic and regional bookrunners are more likely to underwrite larger issue size, longer maturity, risky bonds and deal with larger syndicate size.

The abovementioned studies only focus on offer-specific characteristics while largely ignoring the firm-specific factors and country level factors. In fact, a number of studies focusing on the decision to appoint a high reputation investment bank, have shown that reputable underwriters are more likely to be included in an underwriting syndicate of debt offerings for large firms, experienced firms, issuers with low stock return volatility, low market volatility and profitable (Carbó-Valverde et al., 2017; Corwin and Schultz, 2005; Fang, 2005). Furthermore, it would be interesting to examine whether country-level factors matter differently for local bank selection in considering different level of convertible market development, corporate governance practices and investor protection in different regions. Lau and Yu (2010) find that level of economic and financial development and legal system matter for proximate bank selection in international corporate bond underwriting.

Taken together, there is no study in literature exploring the choice of lead underwriters selection that have geographic proximity advantage in the context of convertible bond offerings. Thus, this study aims to explore whether firm characteristics, offer characteristics, underwriter quality and country-level factors are the potential determinants of choice of geographic proximate underwriting bank selection in international convertible bond underwriting.

3.3 Literature review on the choice of investment bank reputation

In investment bank reputation literature, Carter and Manaster, (1990) and Megginson and Weiss, (1991) are two heavily cited studies to have formally quantified the reputation of underwriters in a wider coverage. Following the spirit of Hayes, (1971) in classifying underwriters into upper bracket and lower bracket of the investment banking hierarchy, Carter and Manaster (1990) develop a more refined approach to quantify the underwriter reputation. The ranking of investment banks is based on the tombstone announcements provided by Investment Dealerǿs Digest and The Wall Street Journal from 1979 to December 1983. The value of the underwriter reputation is then quantified using an ordinal value ranging from zero to nine, with a higher value indicating a more reputable underwriter. In total, Carter and Manaster (1990) has developed a wider coverage to measuring underwriter reputation for a total number of 117 underwriters in the context of US.

On the other hand, Megginson and Weiss (1991) quantify underwriter reputation based on the market share in which the percentage of the total dollar amount of securities brought to market by each underwriter over the sample period. They argue that the measure of underwriter reputation developed by Carter and Manaster is not suitable for two reasons. First, Megginson and Weiss (1991) point out that the Carter and Manaster rankings only measure the underwrite reputation from 1979 to 1983 and they need to make a strong assumption that underwriter reputation remains unchanged over time if Carter and Manaster rankings is used. Second, they argue that their reputation measure rely on market share provides more meaning than ordinal values of Carter and Manaster rankings.

The theoretical rationale explaining the relationship between reputation, product quality, and price was first introduced by Klein and Leffler, (1981) and extended by Allen (1984), Rogerson (1983), and Shapiro (1983) to reflect the complexities of product markets. According to Rogerson (1983), reputation plays an important role in assuring product quality in goods markets. A high quality firm is likely to attract more customers, higher fixed costs in increasing product quality, and greater market outcome via word-of-mouth publicity. However, sellers are in general self-interested to reduce the cost of production and significantly reduce the quality of product for short-run gain since the customers can only judge the product quality after the purchase. Consequently, the act of a self-interested seller indirectly creates moral hazards to the goods sold to customers will have a significant losses to both parties in the long-term. Based on the product quality models, a premium price introduced by sellers to compensate the costs for building and retaining firm reputation serves a reliable signal to customers that firm manufactures superior quality product in the markets.

In financial markets, the existence of informational asymmetry between issuers and potential investors lead to potential market failure sourced from either insiders acting on self-interest may not disseminate credible information about firm value or investors in getting the correct information (see Myers and Majluf, 1984; Akerlof, 1970). Building on reputational signalling of product quality by Klein and Leffler (1981), Booth and Smith (1986) develop a theory that the certification provided by the underwriters is capable to certify the risky issue prices and ameliorate asymmetric information problems between shareholders and the prospective subscribers in the financial markets transactions. As a result, reputation of the underwriters serves as the bonding mechanism for investors to infer the credible inside information about future earnings prospects of firm.

Building on this underpinning reputation theory, Chemmanur and Fulghieri, (1994) develop a reputation acquisition model enabling investment bank to serve as an effective financial intermediary in producing credible information to mitigate moral hazard between entrepreneurs and investors. Investors infer investment bank credibility by evaluating their past performance in equities underwriting and marketing. A dynamic trade-off between short run pain in setting stricter evaluation standards for firms and reputation gain in the long run enable investment bank to act for honest information production for protecting credible reputation. The authors further discuss six empirical implications that reputation matters for investment bank. An investment bank with greater reputation is associated with asymmetric information alleviation, less risky client firms, higher underwriting fees, larger underwritten proceeds, increasing market share in underwriting, and favourable choice for issuers vulnerable to asymmetric information. Chemmanur and Fulghieri, (1994) argue that their reputation model is applicable to other corporate event announcements in light of credibility and reliable building by the underwriters to protect their reputation.

To be more precise, prestigious investment banks are more effective in reducing the information asymmetric between firm insiders and outsiders through greater reduction in underpricing following corporate securities offerings and negative stock price reaction around new corporate securities issuances. Second, a reputable investment bank can clearly certify the uncertainty of the firmsô true value by ameliorating the undepricing problem faced by issuers especially in issuing corporate financial products (see a related empirical evidence provided by Carter and Manaster, (1990) and Johnson and Miller (1988) for IPOs and Schadler and Manuel, (1994) for seasoned equity offerings). Third, underwriters with better reputation are usually charge higher fees to the issuing firms. This empirical implication is closed related to Carter and Manaster, (1990) in which issuers particularly those associated with higher asymmetric information find that it is worthwhile to use a more prestigious underwriters to certify their corporate products offerings as reputable underwriters can significantly alleviate the underpricing. This is mainly because underwriters with greater reputation are adept in identifying the uncertain risk associated with the issuing firm and able to certify the quality of the issuance via stringent evaluation procedure to truly obtain better evaluation of the corporate projects.

Moreover, a reputable investment bank is able to underwrite larger size of securities offerings. This empirical implication is proven in the works of Johnson and Miller (1988) and Carter and Manaster (1990) that most of the larger financial transactions are handled by more prestigious investment banks in comparison to less prestigious ones. According to Hayes, (1971) that more prestigious underwriters are capable to market greater offerings of equity. Fifth, the reputation acquisition model by Chemmanur and Fulghieri, (1994) point out that reputable underwriters are determined to safeguard their reputation in underwriting as they will lose market share tremendously if their underwritten securities suffer greater underpricing or negative stock price reaction. This implication is severe as Beatty and Ritter (1986) empirically show that investment banks lose greater market share if the stock price reaction in response to corporate events does not correspond to the anticipated uncertainty. The sixth empirical implication pointed out by Chemmanur and Fulghieri, (1994) that firms normally prefer to have their corporate securities underwritten by reputable investment banks than directly place to the marketplace putting firm at greater uncertainty about the firm valuation.

However, Gopalan, Nanda, and Yerramilli (2011) empirically show that reputation-based disciplining mechanisms do not work effectively in the loan syndication market. In particular, the dominant lead underwriters are insusceptible to reputation damage following large-scale borrowersô bankruptcies in the U.S. and thereby Gopalan, Nanda, and Yerramilli (2011) argue that reputation may not guarantee adequate screening and monitoring efforts by underwriters to certify their underwriting services. This complication is rather analogous to duplication of monitoring efforts or a ñfree-riderò problem where lenders do not perform delegated intermediary monitoring Diamond (1984). But Gopalan, Nanda, and Yerramilli (2011) argue that if the underwriters are insusceptible to the effects of bankruptcy may not be able to provide proper monitoring. This is in sharp contrast to the delegated monitoring model by Diamond (1984) where financial intermediary are incentivized to perform cost advantage delegated monitoring due to the costly bankruptcy. Consistently, Andres, Betzer, and Limbach (2014) find that high-yield bonds underwritten by the most reputable underwriters are associated with significantly higher downgrade and default risk. They argue that the reputation mechanism does not work for the most dominant banks in the syndicated loan market as dominant lead underwriters do not suffer a loss of reputation when borrowers suffer bankruptcies.

Numerous studies have examined the reputation effect of underwriters on the market reaction to issuersô corporate event announcements. Initial public offerings (IPOs) as one of the most important corporate events that attract a relatively larger body of literature to explore the impact of investment bank reputation on the initial public offerings (see for example Beatty and Ritter, 1986; Johnson and Miller, 1988;

Carter and Manaster, 1990; Megginson and Weiss, 1991; Carter, Dark, and Singh, 1998; An and Chan, 2008; Neupane and Thapa, 2013; Fernando et al., 2015). These studies find that investment bank with higher reputation deliver less underpricing in equity.

For seasoned equity offerings (SEOs), McLaughlin, Safieddine, and Vasudevan, (2000) examine the investment banker reputation and announcement returns from 649 primary SEOs by U.S. firms and preliminary results show that the three-day cumulative prediction errors are less negative for high-prestige bank. The empirical results from their cross-sectional regressions reveal that SEOs underwritten by prestigious underwriters deliver positive abnormal returns over (-1 1) window period. In a separate study, Billett, Flannery, and Garfinkel, (1995) find that lenders with higher reputation significantly bring borrowing firm with positive stock price reaction in a sample of 626 U.S. corporate bank loans. Fernando et al. (2015) find that equity issuers underwritten by higher reputable undewriters receive significant benefits of higher offer values and lower percentage spreads net of reputational premia.

According to Chemmanur and Fulghieri (1994)ôs acquisition model that a more prestigious investment bank is likely to certify better intermediary information to its clients in exchange for premium fees. Remarkably, McLaughlin, (1992), Servaes and Zenner, (1996), Rau (2000), Hunter and Jagtiani (2003), and Ismail, (2010) are a few empirical studies in M&As fail to find supportive evidence that reputation of financial advisors matters for bidder performance. The evidence provided by McLaughlin (1992) suggests that the effectiveness of fee contracts by investment banks only provides a partial solution to the agency problem. Servaes and

Zenner (1996) find that the use of investment banks by firms suffer lower acquisition announcement returns and argue that transaction costs are the main determinant of investment banking choice why investment bank is advised. Rau (2000) finds that clients of top-tier investment banks earn lower announcement-period excess returns than clients of lower-tier investment bank and suggests that the use of top-tier investment banks is to ensure investment banks to complete the acquisition and mergers transactions. Hunter and Jagtiani (2003) find that top-tier advisors are more likely to complete deals and to complete them in less time than lower tier advisors but less synergistic gains realized by the acquirers. Ismail (2010) shows that acquirers advised by tier-one advisors suffered more than $42 billion losses, in contrast deals advised by second tier advisors gained $13.5 billion in response to the merger announcement. Using mergers and acquisitions data on U.S. public firms and targets between 1996 and 2009, Golubov, Petmezas, and Travlos (2012) revisit an empirical study in M&As and find favourable evidence consistent with acquisition conjecture that top-tier financial advisors deliver significantly higher bidder equity returns in public acquisitions.

The above-mentioned empirical studies clearly show that the reputation of investment banks may or may not serves as an important corporate decision to be considered by corporate issuers. At one hand, a group of studies clearly reveal that reputation of investment bank serves as a credible signal to reduce asymmetric information and thereby mitigate the negative effects of stock price reaction in response to securities offerings (see Beatty and Ritter, 1986; Johnson and Miller, 1988; Carter and Manaster, 1990; Megginson and Weiss, 1991; Carter, Dark, and Singh, 1998; McLaughlin, Safieddine, and Vasudevan, 2000; Billett, Flannery, and

Garfinkel, 1995; Chemmanur and Fulghieri, 1994; Golubov, Petmezas, and Travlos, 2012). In addition, Gande et al. (1997), Puri, (1996), Livingston and Miller (2000), and Fang (2005) are the only studies I am aware arguing that the certification role by underwriter reputation is associated with premium underwriting fees for lower yields and lower credit rating in corporate debt issuance. On the other hand, reputation does not seem to be a critical factor for issuers to consider in underwriting their corporate financial products as argued by Gopalan, Nanda, and Yerramilli (2011) that reputation of bank does not assure adequate screening and monitoring efforts by underwriters. However, to the best of my knowledge no prior study found whether reputation of investment banks matter for convertible debt issuers in considering the impact of asymmetric information that may deteriorate the stock price reaction upon convertible bond offerings.

3.4 Data and summary statistics

3.4.1 Sample data construction

In this chapter, I reuse the same dataset of convertible bond offerings obtained from SDC and other explanatory variables of firm obtained from Worldscope as detailed in chapter 1. Following Dutordoir et al. (2016) and Fang (2005), this study excludes utilities, banks, and non-bank financial firms as these group of issuers may subject to stricter financial regulations. I treat multiple bond tranches offering as one offering by joining them together. For example, consider a deal with a tranche of USD$100 million proceeds and 10 years maturity and another tranche of USD$150 million proceeds and 5 years maturity. In this case, I take a weighted average based on the total issuance proceed by calculating the maturity of the deal as $\frac{100}{250}\times 10+\frac{150}{250}\times 5=4+3=7$ years. Fees, yield-to-maturity, years-to-maturity, syndicate size and coupon in the multiple tranches are treated using proceeds weighted average technique. These filters produce a final sample of 8,069 deals and total issue proceeds of USD1.33 trillion. Descriptive statistics for explanatory variables are presented in Table 3.3.

Domestic bookrunner is a dummy variable equals to one for at least one lead underwriter domiciled in the same country with the issuer. Regional bookrunner is a dummy variable equals to one if a bank from the same region as the issuer lead underwrites the deal and zero if otherwise. In this study, I follow Morgan Stanley Capital International (MSCI) world market classifications to classify the regional bookrunners into three main regions of Americas, Europe and Asia Pacific. Underwriter reputation is measured by either Top-3 country level market share in convertible bond offerings or Top-21 in global convertible market share ranking with Megginson and Weiss (1991) rank score ≥ 7

3.4.2 Geographic distribution of domestic, regional and reputable investment bank selection

Table 3.1 presents geographic proximity and underwriter reputation preferences in 30 countries. The proportion of issuers choosing domestic lead underwriters varies remarkably across countries. A total number of twelve countries (for instance, India, Singapore, Belgium and the United Kingdom) rely less on domestic banks to bookmanage their convertible bond offerings. In contrast, the proportion of issuers choosing domestic bookrunners is relatively higher for most of the developed countries such as Canada, United States, Japan and France at 75.3%, 86.2%, 81.2% and 80.9%, respectively. The mean proportion of issuers using domestic bookrunners for the whole sample is 74.7%. Overall, convertible bond issuers domiciled in developed countries in comparison to emerging countries have strong preference towards geographic proximity in choosing bookrunners. A possible explanation is that investment banks in some countries particularly emerging countries do not have enough capital and placement capacity to bookmanage convertible bond offerings.

After incorporating the definition of geographic proximity by including regional boookrunners, the mean proportion of convertible bond issuer using regional bookrunners increases to 79.3%. Interestingly, I find that none of the countries report zero proportion of choosing regional bookrunners. In particular, most of the convertible bond issues in Europe region (for example, Austria, Germany, Netherlands and Norway) and Americas region are underwritten by the investment banks in the same region. However, India, Philippines and Thailand are the countries exhibit relatively weak tendency of geographic proximity with approximately less than 30% of their convertible bond issues managed by regional bookrunners.

Turning to underwriter reputation, approximately 65.4% of the convertible bonds in the sample are underwritten by reputable bookrunners. Luxembourg, Spain and Switzerland have the largest percentage of convertible bonds bookmanaged by reputable bookrunners, with 100%, 94.1% and 90.4%, respectively. Similarly, issuers based in the United States and Japan are more likely to use reputable bookrunners. This suggests that the United States and Japan have well established investment banks capable for providing both geographic proximity and reputation advantages to their convertible bond issuers. While, issuers based in Asia Pacific region (for instance, Malaysia, Taiwan, New Zealand, Hong Kong and South Korea) record fewer bond issues, approximately less than 40%, bookmanaged by reputable bookrunners. A possible explanation is that issuers in some countries may have higher preferences of geographical closeness in selecting bookrunners to reduce information asymmetry faced by them.

The different choices between geographic proximity and underwriter reputation preferences by convertible issuers in global convertible bond offerings produce an interesting question to what are the potential determinants of respective geographic proximity preference and reputation preference in convertible marketplace.

3.4.3 Bookrunner reputation worldwide

Table 3.2 presents summary statistics for the Top 50 bookrunners in convertible bond offerings for the 1984-2015 period over 30 countries. Measuring the reputation of a bookrunner is challenging task since a few major investment banks served as active bookrunners in the convertible bond market, but have been taken over or gone bankrupt. To construct a league table of bookrunners reputation, I carefully track the deals allocation following the major banks restructuring process to better reflect the reputation and capacity of bookrunners in convertible bonds market. Golubov, Petmezas, and Travlos (2012) and Yasuda (2005) perform similar treatment for M&As and corporate bond offerings in the US market.

For example, Salomon Brothers was as Wall Street bulge bracket investment bank acquired by Travelers Group in 1998. Citigroup is then created following the merger of Travelers Group and Citicorp in the same year. Merrill Lynch was acquired by Bank of America Corporation on January, 1 2009. In addition, Lehman Brothers was another bulge bracket investment bank filed bankruptcy on September 15, 2008 and its investment banking operations were acquired by Barclays and Nomura. Nikko Securities Co became a wholly-owned subsidiary of Citigroup in January 2008 and was then sold to Sumitomo Mitsui Financial Group in late 2009.

In constructing the league table of bookrunners, I treat the advised deals separately prior to M&As and I categorize the deals to be incorporated into their successor after M&As processes. For example, Swiss Bank Corporation (SBC) which was acquired by UBS in 1998. Any deals advised by SBC and its associates specifically Warburg Dillon Read are integrated into UBS following the SBC acquisition. All the deals bookmanaged by SBC and UBS prior to merger are counted separately to avoid false classification by treating deals bookmanaged by the parent bank or bulge bracket bank after the merger even with no actual transactions been managed.

Furthermore, I find that some deals are jointly managed by two investment banks in global convertible bond offerings. In this case, I separate the bookmanaged deals by two joint-venture banks equally. For instance, the joint venture banks by both Goldman Sachs and Gao Hua in underwriting a convertible bond deal with 100 million proceeds. To be specific, I divide the proceeds equally by these two banks and assign 50 million proceeds underwritten by Goldman Sachs and another 50 million proceeds bookmanaged by Gao Hua Securities Co, respectively. ABN AMRO Craigs Ltd, ABN AMRO Rothschild, Credit Agricole Indo-Laz Frere, Credit Suisse Founder Sec Ltd, Goldman Sachs Gao Hua, Daiwa Securities SMBC Co Ltd, Mitsubishi UFJ Morgan Stanley, Morgan Stanley Huaxin securities, DSP Merrill

Lynch Ltd, and Lazard-Natixis are among joint venture bookrunners I have identified from the sample.

A striking feature from this table is that bookrunners domiciled in U.S. account for 48.33% of global market share in 5,855 deals in overall convertible bond offerings. While bookrunners headquartered in Japan and Switzerland account for 15.46% (2,886 deals) and 11.19% (1,705 deals) respectively in this line of underwriting. Bookrunners from Germany, France, U.K., Canada, China, Netherlands, Italy, Australia and Taiwan are also listed in Top 50 ranks.

I use Megginson and Weiss (1991) market share rank to classify investment bank reputation because there is no precise definition of top tier bookrunners in global convertible bond markets. Moreover, some existing measures of investment bank reputation may subject to distortions as a few bulge bracket investment banks experienced major restructurings via M&As over the sample period. The rank measure by Megginson and Weiss (1991) is more reasonable as it captures more accurate bookrunners reputation based on their market share of raised proceeds across different countries and years. Megginson and Weiss (1991) point out that the Carter and Manaster rankings only measure the underwrite reputation from 1979 to 1983 and they need to make a strong assumption that underwriter reputation remains unchanged over time if Carter and Manaster rankings is used. Second, they argue that their reputation measure rely on market share provides more meaning than ordinal values of Carter and Manaster rankings. Third, this measure is more suitable in considering different countries with different sample period as most of the existing reputational measure do not capture other global investment banks other than that of the U.S. According to Megginson-Weiss market share rank, a total number of 21 bookrunners has a score more than 7.00 and therefore are categorized as reputable bookrunners in underwriting convertible bond issuances. Megginson-Weiss rank is computed based on Megginson and Weiss (1991) by the market share of the underwritten amount of proceeds by each bank. More specifically, [illegible] = [illegible] × 9, where [illegible] is a set of bookrunners, [illegible] is a market share by bookrunner [illegible], [illegible] equals year, [illegible] equals natural logarithms and [illegible] is the highest market share by the top bookrunner.

In the context of international bond underwriting, Lau and Yu (2010) define Top-15 underwriters as reputable banks but they provide no reason of the selection. Neupane and Thapa (2013) uses a Megginson-Weiss rank score of 7 as a cut-off point to classify high reputation of underwriters in the context of Indian IPOs.

In this respect, Goldman Sachs Group Inc, Morgan Stanley, Merrill Lynch, JP Morgan Chase & Co, Citigroup Inc, Bank of America Merrill Lynch, Lehman Brothers Holdings Inc, Donaldson Lufkin & Jenrette, Salomon Brothers and Bear Sterns & Co Inc are ten bookrunners domiciled in U.S. Additionally, Nomura Holdings Inc, Yamaichi Securities Co, Daiwa Securities Group Inc and Nikko Securities Group Inc are classified as four Japanese reputable bookrunners. Credit Suisse, UBS AG and Swiss Bank Corporation are three reputable bookruners from Switzerland. While, BNP Paribas SA and Societe Generale are two reputable bookrunners from France and Deutsche Bank AG and Barclays are bookrunners classified as reputable lead underwriters from Germany and U.K., respectively.

An interesting question from this pattern is that do convertible bond issuers from different countries have equal access to reputable bookrunners?

3.4.4 Determinants of domestic, regional and reputable bookrunner selection

In this section, I explain the firm-specific, market-specific, convertible bond-specific and instrumental variables examined in prior studies, and their expected relation with respect to domestic, regional and reputable bookrunner selection.

Firms with larger firm size tend to employ international and more prestigious bookrunners due to their comparative advantage in risk-bearing (Fang, 2005) and marketing capability in bookbuilding (Ljungqvist et al., 2003). Issuers may also choose bookrunners with geographic proximity advantage simply because they are reputable investment banks. Thus, firm size is expected to have positive relation with domestic and regional bookrunner selection. Domestic and regional bookrunners are expected to less likely to underwrite firm with high in financial leverage because firms with greater financial leverage more likely to bear greater costs in raising a new debt (Green, 1984; Brennan and Schwartz, 1988). As a result, underwriters who certify them might put their reputation at risk if firms declare default. Lou and Vasvari (2013) highlight that higher leverage is associated with higher credit spreads, reflecting greater credit risk. In contrast, Humphery-Jenner et al. (2018) suggest that financial leverage of firm could indicate that it has more lending relationship with investment banks and more likely to hire reputable banks. Instinctively, profitable firms may seek proximate banks in comparison to reputable underwriters because issuers tend to pay lower fee than premium fee charged by reputable underwriters (Fang, 2005; Lau and Yu, 2010).

According to pecking order theory that greater financial slack is an indication of higher adverse selection costs, which may signal that an offering is driven by overvaluation needs (Bayless and Chaplinsky, 1996). I therefore predict proximate and reputable investment banks are unlikely to underwrite firms with higher financial slack. Firm with higher stock run-up may indicate the presence of future positive net present value projects (Viswanath, 1993). Thus, it is expected that stock run-up is positively associated with domestic, regional and reputable bookrunner selection. Firms with high stock return volatility is expected to be negatively related to domestic, regional and reputable bookrunner selection as Chang, Chen, and Liu (2004) point out that firms with high stock volatility are more likely experience cash flows uncertainty and greater costs of financial distress. It is expected issuers are more likely to hire proximate banks because of informational advantage in underwriting risky and informationally opaque bonds. Due to reputation concerns, Fang (2005) finds that reputable banks underwrite less risky and lower stock return volatilities.

Choe, Masulis, and Nanda (1993) argue that market expansions provide investors with more profitable growth opportunities and lower the adverse selection costs. Thus, it is expected that more underwriting activities provided by domestic and regional and reputable bookrunners during good market run-up. In contrast, it is expected that market volatility is negatively related to domestic, regional and reputable bookrunner selection as Dutordoir et al. (2016) suggest that convertible bond issuers tend to experience more severe asymmetric information problem during a period of highly volatile market.

Convertible bond factors include relative issue size, years-to-maturity, S&P credit rating ranking, credit enhancement dummy, call protection dummy, public offering dummy, number of bookrunner(s), rated bonds dummy, S&P investment grade dummy. Relative issue size is total issue proceeds divided by total assets.

Years-to-maturity is a time taken for the convertible bond to reach maturity and expressed in natural logarithm. Credit rating is measured based on Standard & Poorôs rating with value of one measuring AAA rated bonds and consecutive number for lower rated bonds. In Panel B of Table 3.3, I provide detailed breakdown of the credit rating. Credit enhancement is a dummy variable equals to one for any deal with a credit letter and zero if otherwise. Credit enhancement is a form of guarantee or backup credit arrangement that may increase the probability of issuer to have sufficient funds to honor the debt obligations. Call protection is a dummy variable of 1 for convertible bond with non-callable characteristics and zero if otherwise. Public offering is a dummy of 1 is for convertible bond offered in the public marketplace and zero if otherwise. Rated bonds dummy is a variable that is equal to one if the bond is rated by Standard & Poorôs and zero if otherwise. S&P investment grade is a dummy variable that equal to 1 if the bond is rated by Standard & Poorôs with AAA to BBBī ratings and zero if otherwise.

Lau and Yu (2010) and Butler (2008) argue that investment bank with geographic proximity advantage tend to underwrite longer maturity and more risky issues because of having private information advantage about the local market, culture, language, regulations, and customers over non-local banks in accessing the capacity of issuer. Additionally, it is expected that issuers opting for public offerings will choose proximate banks as bookrunners because they can easily place debt to local investors (Corwin and Schultz, 2005) and ensure a high level of public disclosure by corporations. McCahery and Schwienbacher (2010) find that borrowers who seek certification from top tier arrangers are willing to pay higher spread and fees in private debt market. While, Fang (2005) finds that issuers in public market are more likely to attract reputable banks to certify the value of bonds but with a higher fee. Lau and Yu (2010) find that corporate bond issuers in public market only enjoy cost reduction of using local banks. This leads to a prediction that issuers in public market are more likely to hire local banks due to lower fees.

Literature on investment bank reputation suggests that issuers with larger issue size, better credit enhancement and complex call protection feature are more likely to choose investment banks with more established reputation and comparative advantage to underwrite debt offerings (Carbó-Valverde et al., 2017; Andres et al. 2014; Corwin and Schultz, 2005; Fang, 2005). This explanation could possibly suggest that convertible bond issuers choose bookrunners with better reputation over the geographic proximity advantage to provide underwriting services. However, the relation between these bond-specific characteristics and domestic and regional bookrunner selection remains an empirical question.

Following Lau and Yu (2010), I also include GDP in natural logarithms, stock market capitalization/GDP and the number of convertible bond issues as instrumental variables to control for domestic and regional bookrunner. GDP and stock market capitalization/GDP are country level variables measured by a year prior to convertible bond issuance made by convertible issuers in each country. GDP measures the total economic activity of a country obtained from WDI, World Bank. Stock market capitalization taken from WDI, World Bank is defined as the share price multiply with the number of shares outstanding for listed domestic companies divided by GDP. Total number of convertible bond issues is measured by accumulating total convertible bond offerings for each respective country for a sample period from January 1984 to December 2015.

Lau and Yu (2010) highlight that issuers domiciled in a country with better economic development are more likely to employ investment banks with geographical proximity advantage because issuers have better access to reputable investment banks with more placement capacity. A country with higher GDP is usually associated with extensive capital market development. Total number of convertible bond issue measures the level of convertible bond market development. Intuitively, issuers in a country with more convertible bond issuance activities are more likely to hire local banks for underwriting because of better access to reputable banks. Similarly, Fang (2005) highlights the importance of including issuing frequency as an instrumental variable to serve as identification restrictions in addressing endogeneity problem. She finds that the issue frequency of issuer is positively related to investment bank reputation. Thus, a positive relation is expected between instrumental variables of GDP, stock market capitalization and total number of convertible bond issue with respect to domestic and regional bookrunner selection.

I include economies of scale as an instrumental control for identification restriction of reputable bookrunners. Following Fang (2005) and Golubov, Petmezas, and Travlos (2012), I construct economies of scale variable and a scope of three indicates that Top 3 country level bookrunner or Top 21 global bookrunner has served the issuer in all three underwriting services including M&A, equity, and bond in the past five years prior to the date of convertible bond issuance. Similarly, scopes of two and one are constructed to reflect the scope of service provided by the prestigious bookrunner on the convertible bond issuer in the past. Fang (2005) and Golubov, Petmezas, and Travlos (2012) argue that larger banks have better economies of scale because of its extensive distributional networks and better informational advantage for their clients. Both authors find that economies of scale serves a significant control variable for reputable underwriters.

3.4.5 Pearson pairwise correlations

Table 3.4 presents Pearson pairwise correlations between the geographic proximity measure of bookrunners, reputation of banks and control variables of firm, issue, market and instruments.

In Column (1), I find that underwriter reputation is negatively related domestic and regional bookrunner and this suggests that domestic lead underwriters may not necessarily represent a reputable investment banks. I find that scope of service is positively related to reputable underwriter. In line with Fang (2005), this suggests that reputable banks with economies of scale has significant impact on the issuer-underwriter matching. Consistent to reputational literature (Carbó-Valverde et al., 2017; Andres et al. 2014; Fang, 2005), reputable bookrunners tend to underwrite firm with larger size, less risky, more profitability and higher stock run-up. In addition, reputable bookrunners have better placement capacity for complex bond with callable feature and longer maturity.

Moreover, I find that domestic bookrunner in Column (2) and regional bookrunner in Column (3) tend to underwrite longer maturity and less risky convertible bonds. Consistent to Lau and Yu (2010) and Butler (2008) that local investment banks have private information advantage to underwrite longer maturity. Proximate banks tend to underwrite publicly made offerings but not on complex callable feature convertible bonds. I also find that local bank is associated with more syndicate members participation and this suggests that local bank requires other syndicate members to provide information production, certification, analyst coverage and market making in underwriting services (Corwin and Schultz, 2005). Lau and Yu (2010) also find that local bank is positively associated with more number of lead underwriters and co-managers participation. I find that the instrumental variables of GDP, market capitalization and number of convertible issue are positively associated with domestic and regional bookrunners.

The correlation among variables are generally less than 0.3, which indicates that the size of correlation is a negligible correlation as suggested by Hinkle et al. (2003). Furthermore, I find that the individual scores of variance inflation factor (VIF) of these variables are less than 5 and the overall mean VIF is 1.53. This suggests that subsequent regression analysis is unlikely to be significantly biased by multicollinearity problems (Hair et al., 2010).

A high correlation between rated bonds dummy and S&P investment grade dummy and S&P credit rating is not surprising as they are derived from the same group of credit rating. In addition, a high correlation between GDP and number of convertible bond issues is expected as corporate issuers from country with higher GDP tend to issue more convertible bonds.

3.5 Empirical findings

3.5.1 Univariate analysis of underwriter with geographic proximity and reputation

In Table 3.5, I compare the means and medians of various firm, issue and market characteristics for the issues underwritten by the domestic and non-domestic bank groups in Panel A as well as issues underwritten by the regional and non-regional bank groups in Panel B. In Panel C, I compare issues underwritten by the reputable and non-reputable bank groups. As suggested by *t*-statistics and Wilcoxon rank-sum (Mann-Whitney) tests that these two groups differ remarkably in various dimensions of firm, issue, market and lead underwriter specifics.

In Panel A and B, the domestic banks and regional banks are more likely to underwrite for firms with longer maturity, smaller issue size, no call protection feature and equity-like convertible bond than its counterparts. This is in line with the arguments of Lau and Yu (2010) and Butler (2008) that investment banks with geographic proximity advantage possesses private information advantage to better evaluate the capacity of issuer and tend to underwrite longer maturity bond and equity-like bond. However, Lau and Yu (2010) point out that domestic banks in developing countries may not have comparative advantage and marketing capability Ljungqvist, Jenkinson, and William (2003) in bookbuilding because lack of the placing capacity in international bond issuances. Thus, it is expected that proximate banks may less likely to underwrite convertible bonds with larger issue size and complex call feature. In addition, I find that domestic banks are less likely from reputable banks. This suggests that local banks may not have superior information advantages in comparison to reputable banks in terms of marketing power and placing capability for complex bond (Lau and Yu, 2010; Fang, 2005; Ljungqvist et al., 2003).

In Panel C, the reputable banks underwrite for firms that are significantly higher credit ratings, larger firm size, less financial leverage, more financial slack, more profitability and higher stock run-up. They also underwrite deals with smaller relative issue size, longer maturity, call protection, public offering, lower DELTA, more multiple tranches. This finding supports bank reputational literature by Carbó-Valverde et al., (2017), Fang (2005) and Fernando et al. (2005) point out that reputable banks have better capacity in handling more complex design of debt. Clients of the reputable banks as compared to their counterparts are significantly charged with lower yields, lower coupon, lower fees and lower total cost. In addition, reputable banks seem to have superior risk-bearing particularly during market with high run-up and volatility. The evidence here supports argument by Fang (2005) that less reputable banks are less credit worthy and more credit hungry by charging their clients with higher underwriting fee.

3.5.2 Determinants of domestic and regional bookrunner selection

In this section, the selection of potential determinants are identified from two different strands of literature: geographic proximate lead underwriter (Lau and Yu, 2010; Butler, 2008) and reputable underwriters (Carbó-Valverde et al.,2017; Fernando et al., 2015; Andres et al., 2014; Corwin and Schultz, 2005; Fang, 2005; Fernando et al., 2005). This section aims to examine the determinants of domestic and regional bookrunner selection. In these models, I include year dummies and cluster standard errors by issuing firm to obtain more robust and reliable results of identifying the potential determinants of domestic and regional bookrunner selection.

Panel A and B of Table 3.6 presents the probit regression results of the determinants of domestic and regional bookrunner selection. The dependent variable for Panel A is domestic bookrunners and Panel B is regional bookrunners. Judging from Pseudo R^2 that probit models of domestic underwriters (from 0.193 to 0.224) have better goodness of model fit in comparison to those of regional underwriters (from 0.179 to 0.197).

Interestingly, I find that firm size, return on assets and stock run-up have significant negative impact on the probability of choosing domestic and regional bookrunner. This suggests that issuers from larger firm size and high in profit usually seek larger debt raising and more likely to use reputable investment banks for better comparative advantage (Fang, 2005) and marketing capability (Carbó-Valverde et al., 2017; Ljungqvist et al., 2003) in bookbuilding. Furthermore, Lau and Yu (2010) highlight that domestic and regional bookrunners may not necessarily have superior information advantage particularly in emerging markets. Consistently, I find that domestic and regional bookrunners is negatively associated with underwriter reputation. According to Viswanath (1993) that firms with higher stock run-up may imply the existence of future positive net present value projects. Thus, the negative coefficient of stock run-up suggests that firms high in stock run-up prior to issue are more likely to seek investment banks with better reputation to certify the value of a debt issue to investors.

Lau and Yu (2010) and Butler (2008) highlight that proximate banks tend to have soft information advantage to better evaluate firms prior to debt issuance and are more likely to underwrite risky and longer maturity debt. In line with this explanation, I find that domestic and regional banks more likely to underwrite risky and longer maturity convertible bonds. Moreover, I find that domestic and regional bookrunners are more likely to be chosen to bookmanage publicly offered convertible bond offerings. This finding is consistent with Butler (2008) and Corwin and Schultz (2005) explanations on the private information advantage and local advantage possessed by proximate banks to easily place debt to potential local investors. It is not surprisingly that domestic and regional bookrunners are more likely to invite more syndicate members in bookbuilding to provide more extensive underwriting services in terms of information production, certification, analyst coverage and market making (Corwin and Schultz, 2005).

In addition, I find that domestic and regional bookrunner selection is negatively related to issue size, and credit enhancement and call protection dummies. This suggests that proximate banks are less likely to underwrite complex and larger issue size convertible bond offerings. This could be due to firms with these types of convertible bond design prefer to employ investment banks with more established reputation and comparative advantage to certify the value of debt offerings (Carbó-Valverde et al., 2017; Andres et al. 2014; Corwin and Schultz, 2005; Fang, 2005).

Moreover, I find that market return volatility is negatively associated with probability of domestic and regional bookrunner selection. This suggests that domestic and regional bookrunners are unlikely to underwrite convertible bond during high market volatility due to their disadvantages in risk-bearing which might put their reputation at stake when acting as certifiers. I also find that GDP and number of convertible bond issue are positively associated with probability of domestic and regional bookrunner selection. This suggests that domestic and regional banks in country with higher GDP have better bond placement capacity in comparison to banks in country with lower GDP. Furthermore, the positive coefficient of the volume of convertible bond issuance could suggest that domestic and regional banks are more likely to be chosen by corporate issuers simply because of having more prestigious investment banks particularly in a country with better established convertible bond market.

3.5.3 Economic significance of domestic and regional bookrunner selection

The motivation of this section is driven by Carbó-Valverde et al. (2017) in quantifying the economic significance of the determinants of the reputable banks matching and Lau and Yu (2010) in gauging the economic impact of the information risk and total issue cost of having a proximate underwriter in international bond offerings. Clearly, these studies reveal that corporate firms have choices of hiring a bookrunner in offering underwriting services depending on the firm-specific, issue-specific and market-specific factors. In Table 3.7, I present the predicted probabilities of domestic bookrunner based on the significance determinants of probit model 7 of Panel A and regional bookrunner of Panel B.

Strikingly, I find that the predicted probabilities domestic bookrunner between publicly offered and non-publicly offered differ by approximately 18.90 percentage points. This suggests that domestic bookrunners more likely to place convertible bond publicly (82.80%) than privately (63.9%) in the convertible market. Consistently, regional bookrunners are more likely to choose public offerings (87.10%) than private offerings (70.30%) method of placing convertible bonds.

Call protection feature show another interesting difference di predicted probabilities of domestic bookrunner by 17.7%. The result suggests that domestic bookrunner is less likely to underwrite convertible bond with call protection (around 74.1%). The predicted probability of regional bookrunner for call protection is 80.3% than without call protection is 93.1%. This evidence suggests that investment banks with geographic proximity advantage are unlikely to be included in convertible bond with call protection.

Another interesting fact is that the difference between 25^{th} and 75^{th} percentile of firm size in predicted probability of domestic bookrunner is about 10.3% and regional bookrunner is 9%. To be specific, 86.8% domestic bookrunner and 89.7% regional bookrunner are more likely to be included in providing underwriting services to corporate issuers with smaller firm size. In other words, both domestic and regional bookrunner are more likely to provide underwriting services for smaller firm size.

Turning to credit rating, in model 7 of Panel A, the predicted probability of choosing a domestic bookrunner for non-rated convertible bonds is 78.8% and for rated convertible bonds is 74.2%, respectively. While, the predicted probability of selecting a regional bookrunner is 83.9% for non-rated bonds and 78.5% for rated bonds. The results of chi-squared test statistics suggest that the difference of predicted probability between rated and non-rated bonds for both groups are statistically significant at 10% and 5%, respectively. This finding is in line with Lau and Yu (2010) that not rated international corporate bonds are positively associated with the probability of proximate underwriters.

Taken together, the results highlight that the public offerings, call protection and firm size have shown more economic significance on probability of choosing a domestic and regional bookrunner.

3.5.4 Determinants of proportion of domestic and regional bookrunner selection

To confirm the previous findings in section 4.2, I conduct robustness check in this section using OLS and Tobit regression analysis on the determinants of proportion of domestic and regional bookrunners. The main purpose of this section is to validate the findings obtained in Section 5.2 whether firm-specific, issue-specific, market-specific and instrumental variables have the consistent sign and expected relationships on the domestic and regional bookrunner selection.

I re-estimate the model 7 of both Panel A and Panel B in Table 3.6. The results from OLS and Tobit regressions consistently show that the proportion of domestic and regional bookrunner selection is negatively associated with firm size, financial leverage, return on assets, financial slack, stock run-up, market volatility, relative issue size, credit enhancer, bond with call protection feature, number of bookrunner(s), bookrunner reputation and S&P rated bond. On the other hand, the proportion of domestic and regional bookrunner selection is positively related to years-to-maturity, public offering, GDP and number of convertible bond issue in the country. The only difference is that financial leverage loses its explanatory power on the proportion of domestic and regional bookrunner selection in Tobit regression.

3.5.5 Convertible bond characteristics on the domestic and regional bookrunner selection

In this section, I examine whether the design of convertible bonds have significance impact on the domestic and regional bookrunner selection. The main reason I exclude these variables in the main baseline regression analysis because most of the variables have low in number of observations and I might experience large number of observations lost if I include all of them in one specification.

Fang (2005) argues that call provisions significantly increase the need of issuers to hire reputable underwriters for more complex deals nonconvertible bonds. Moreover, Carbó-Valverde et al. (2017) find that first issuer is likely to hire a more reputable underwriter to underwrite corporate bonds. In addition, Lau and Yu (2010) find that the likelihood of selecting a domestic lead underwriter is negatively related to total issue cost. Thus, I examine the largely unexplored impact of conversion premium, DELTA, first issue, years-to-call-protection, multiple tranches dummy, yield-to-maturity, coupon, gross spread and total cost on the probability of choosing domestic and regional bookrunner in convertible bond offerings in separate regressions.

From Panel A in Table 3.9, I find that probability of choosing a domestic bookrunner by convertible bond issuers is positively associated with DELTA, years-to-call-protection, multiple tranches offerings and negatively associated with gross spread and total cost. However, multiple tranches dummy and gross spread are the only two issue factors that remain significant in much shorter sample for including all convertible bond characteristics.

The results from Panel B in Table 3.9 show that probability of selecting a regional bookrunner is positively associated with DELTA, years-to-call-protection, multiple tranches dummy, yield-to-maturity and coupon. In Column (10), I find that conversion premium and gross spread have negative impact on the regional bookrunner selection. DELTA, years-to-call-protection, yield and coupon are positively related to choice of regional bookrunner selection.

Firms issuing equity-like convertible may experience more negative market reactions as Krasker (1986) suggests that equity offerings may lead to corporate firms facing higher external cost of financing. This suggests that domestic and regional bookrunner with soft information advantage could provide better underwriting services for firms to alleviate the financing risk more effectively. Consistently, Loughran (2008) finds that firms are more likely to use local banks to underwrite equity offerings because investors are better able to obtain information on nearby companies. According to Carbó-Valverde et al. (2017) and Fang (2005) that lead issuers usually choose more prestigious banks to place more complex especially with call provision design. I find that domestic and regional bookrunners are capable of placing complex bond but with longer call protection as Stein (1992) point out that callable convertible could alleviate negative stock price reactions.

In addition, proximate bookrunners underwrite a higher yield at a lower fee and this suggests that domestic and regional banks do not have absolute advantages over non-domestic and regional counterparts. This is in contrast to Butler (2008) and Lau and Yu (2010) who argue that local investment banks have absolute advantages to charge lower fees and underwrite bonds at lower yields. Additionally, I find that domestic and regional bookrunners at informational advantage are more likely to underwrite multiple tranches of convertible offerings and this could be due to marketing ability (Corwin and Schultz, 2005) and the positive impact of multiple tranches offerings on the stock market reaction (Godlewski, 2014).

Overall, convertible bond issuers are more likely to choose bookrunners with geographic proximity advantage in underwriting complex features of convertible bonds especially DELTA, longer call protection period and multiple tranches offerings for better yield and lower cost.

3.5.6 Economies of scale and underwriters selection

In this section, I address the question whether underwriters with economies of scale are more likely to be selected in underwriting convertible bond offerings. According to Fang (2005) that larger banks have economies of scale because of its extensive distributional networks in providing underwriting services to institutional and individual investors. The author finds that economies of scale of the underwriter is valuable to issuers and it has significant impact in the issuer-underwriter matching. In addition, Golubov, Petmezas, and Travlos (2012) argue that scope services provided by top-tier advisor rather than same investment bank may create better informational advantage for the client. Following Fang (2005) and Golubov, Petmezas, and Travlos (2012), I construct economies of scale variable and a scope of three indicates that Top 3 country level bookrunner or Top 21 global bookrunner has served the issuer in all three underwriting services including M&A, equity, and bond in the past five years prior to the date of convertible bond issuance. Similarly, scopes of two and one are constructed to reflect the scope of service provided by the prestigious bookrunner on the convertible bond issuer in the past.

In Table 3.10, I find that scope variable has significant and positive coefficient, suggesting that domestic banks with economies of scale are more likely to obtain underwriting contracts for convertible bond issuers. However, the impact of economies of scale on the regional bookrunner selection vanishes from Column (4) to Column (9) when including level of convertible bond market. This implies that scope services by the investment banks could not be the explanation on the choice of regional bookrunner selection. On the contrary, Lau and Yu (2010) do not control for identification restriction of the inclusion of reputable lead underwriter in examining the domestic and regional bookrunner selection in the international bond underwriting . Moreover, I find that the main finding of the determinants of domestic and regional bookrunner selection remains consistent to what I have presented earlier in Section 5.2.

3.5.7 Determinants of reputable bookrunner selection

In this section, I examine the potential determinants of reputable bookrunner selection. More specifically, a number of studies examining reputation of lead underwriters find that issue-specific, firm-specific and market-specific have significant impact on choice of the reputable lead underwriter selection by issuers in equity, M&A and non-convertible bond offerings (Carbó-Valverde et al.,2017; Fernando et al., 2015; Andres et al., 2014; Corwin and Schultz, 2005; Fang, 2005; Fernando et al., 2005). However, there is no study investigating the choice of reputable investment banks selection in the context of convertible bond issuance by corporate firms.

In Table 3.11, I find that reputable bookrunner is more likely to underwrite convertible bond offerings by convertible bond issuers with larger firm size, greater profitability, higher financial slack and higher stock run-up. Additionally, I find that reputable bookrunner is negatively associated with financial leverage and stock volatility. Consistent to Fang (2005) argument that reputable banks are more likely to underwriter larger firm size because prestigious investment banks need to maintain its reputation in underwriting and might put its reputation on stake for smaller size and lower credit rated issuer. Moreover, it is reasonable that profitable firm is more likely to hire reputable bank for providing better certification (Fang, 2005) and marketing capability (Carbó-Valverde et al., 2017; Ljungqvist et al., 2003) in bookbuilding. The positive coefficient of stock run-up suggests that corporate firm with higher stock run-up may serve an indication the existence of future positive net present value projects (Viswanath, 1993) and therefore is more likely to be selected by reputable bookrunner. Moreover, I find that reputable bookrunner less likely to underwrite convertible bonds for issuers with higher stock volatility. In contrast, Lou and Vasvari (2013) point out that reputable bank underwriter is unlikely to underwrite bond for firm with higher financial leverage due to greater credit spreads and may result in greater credit risk. As suggested by Chang, Chen, and Liu (2004) that firms with high stock return volatility may experience more cash flows uncertainty and costs of financial distress and this might risk reputation of prestigious banks. In addition, I find that reputable banks are more likely to be chosen by corporate issuers for certification purposes in a period of high market volatility.

Interestingly, I find that longer maturity bonds and call provision bonds are more likely to be placed by reputable bookrunners in the case of convertible bond issuers. These results are in line with the argument by Carbó-Valverde et al. (2017) and Fang (2005) that reputable underwriters have the capacity to place more complex bonds. I also find that reputable bookrunners are less likely to underwrite rated convertible bond but more likely to offer bookbuilding services to issuers with lower credit rating. This result is in line with Andres et al. (2014) find that reputable underwriters tend to place higher downgrade and default risk in high-yield bonds. This suggests that reputable underwriters may shift from certifying quality to maximizing the issuerôs valuation in favour of the market-power of banks because underwriters do not suffer reputational losses when their borrowers experience large-scaled bankruptcies. However, Carbó-Valverde et al. (2017) and Fang (2005) point out that reputable underwriters tend to underwrite less risky corporate non-convertible debt offerings as bank needs to maintain its reputation.

Moreover, I find that reputable bookrunners are more likely to form larger syndicate size and this finding supports Corwin and Schultz (2005)ôs explanation that syndicate members are important for providing information production, certification, analyst coverage and market making. In addition, I find that economies of scale has a positive and significant relation with the reputable bookrunners. This suggests that reputable bookrunners that have served the clients in past is more likely to be chosen for bookrunner selection. This supports Fang (2005) and Golubov, Petmezas, and Travlos (2012) explanation that larger and reputable bank tend to have more extensive distributional networks and informational advantage. Additionally, I show that reputable bank is negatively associated with domestic bookrunners. This suggests that reputable bank may not have geographical distance advantage. This finding is supportive to the explanation by Lau and Yu (2010) that proximate lead underwriters particularly from emerging countries may not have informational advantage.

Lastly, I find that reputable bookrunners are more likely to be chosen in country with strong economy and better level of convertible bond market development. This is not surprising as economically strong country tend to have better established investment banks and capable of providing reputational certification in underwriting services.

3.6 Conclusion

I find that geographic distance matters for convertible bond issuers in most of the countries in choosing a bookrunner. However, I show that bank reputation is another point to be considered by convertible bond issuers particularly when no local banks can handle and certify the value of convertible bond offerings. The overall results suggest that domestic and regional bookrunners may have comparative advantage due to proximity but may not have absolute advantages than nonlocal bookrunners specifically reputable banks.

Specifically, at one hand, domestic and regional bookrunners with soft information advantage are more likely to underwrite longer maturity, non-rated bond, smaller relative issue size, equity-like convertible bond, multiple tranches, higher coupon and publicly offered bond. On the other hand, reputable bookrunners are more likely to place larger relative issue size, longer maturity and call provision. Reputable bookrunners also underwrite convertible bond offerings for corporate firms larger in size, higher profitability ratio, higher financial slack, higher stock run-up and greater market volatility. Interestingly, I find that domestic and regional bookrunners are significantly associated with less reputable lead underwriter and larger syndicate participation. Furthermore, I show that both domestic bookrunners and reputable bookrunners that have scope of economies advantage have higher tendency to be included in the bookrunner selection for convertible bond offerings.

It is worth to point out that in the next chapter I will examine the outcome of domestic and regional bookrunner selection on the stock price reactions, pricing and yield in comparison to non-local bookrunners. Another interesting question is that whether domestic and regional bookrunners have more comparative advantage over reputable bookrunners based on the outcomes of the underwritten convertible bonds.

Table 3.1: Descriptive statistics and geographic distribution of domestic and regional investment bank selection

Regions	N	Domestic	Regional	Underwriter Reputation	YTM	Spread	TCOST	GDP	Stock market capitalization/GDP
Americas									
Canada	393	75.3	91.1	45.5	7.4	3.8	9.1	1,487.6	1.1
US	2,470	86.2	87.4	72.2	5.3	3.0	6.3	11,752.4	1.0
Asia Pacific									
Australia	200	54.5	55.5	40.5	8.7	3.1	8.7	976.3	1.0
China	145	46.2	56.6	53.8	3.3	2.0	3.2	5,739.8	0.5
Hong Kong	184	50.5	65.8	30.4	4.9	2.3	5.1	205.7	7.5
India	204	7.4	11.8	60.3	4.2	2.8	4.5	1,133.8	0.6
Indonesia	10	10.0	30.0	80.0	7.2	2.6	8.1	397.7	0.1
Japan	2,326	81.2	81.2	84.9	2.1	2.1	2.9	4,507.6	0.8
Malaysia	23	60.9	69.6	39.1	3.8	2.1	4.3	230.0	1.5
New Zealand	9	22.0	44.4	33.3	6.2	3.0	5.6	113.5	0.4
Philippines	11	18.2	27.3	63.6	3.1	2.3	3.9	126.7	0.7
Singapore	36	27.8	44.4	63.9	2.9	2.3	3.5	184.4	1.9
South Korea	756	84.1	86.9	30.3	4.9	2.4	5.3	613.7	0.4
Taiwan	603	66.0	69.5	34.8	2.1	1.7	2.1	426.3	1.4
Thailand	24	12.5	16.7	70.8	3.3	2.5	5.0	221.4	0.7
Europe									
Austria	8	50.0	87.5	50.0	4.6	2.0	5.3	333.3	0.3
Belgium	15	20.0	53.3	66.7	4.1	3.3	4.4	448.0	0.6
Finland	9	0.0	44.4	55.6	4.8	2.5	5.4	220.5	0.6
France	199	80.9	89.4	71.9	3.7	2.1	4.6	2,319.7	0.6
Germany	60	65.0	88.3	78.3	3.3	2.5	4.2	3,207.0	0.4
Greece	6	33.3	83.3	66.7	2.9	1.9	3.6	278.4	0.7
Ireland	5	0.0	40.0	80.0	5.15	1.65	6.47	116.8	0.6
Italy	26	57.7	76.9	80.8	3.3	2.3	4.1	1,984.2	0.3
Luxembourg	10	0.0	70.0	100.0	3.6	1.2	4.1	50.2	1.4
Netherlands	73	58.9	84.9	61.6	4.1	2.3	5.6	650.6	0.8

Table 3.1: (continued)

Regions	N		Domestic	Regional	Underwriter Reputation	YTM	Spread	TCOST	GDP	Stock market capitalization/GDP
Norway	22		59.1	86.4	68.2	4.2	2.2	4.5	410.5	0.5
Spain	17		11.8	76.5	94.1	4.4	2.5	4.6	1,362.1	0.8
Sweden	13		61.5	76.9	46.2	7.1	3.7	8.1	421.9	0.8
Switzerland	83		65.1	72.3	90.4	3.2	1.9	3.9	494.1	1.9
United Kingdom	129		16.3	65.9	70.5	6.0	2.4	7.3	1,897.3	1.0
Total	8,069	Mean	74.7	79.3	65.4	4.2	2.5	4.9	5,357.5	1.0

The sample size consists of 11,350 convertible bond deals from 1984 to 2015. N denotes the number of convertible bond offering in a country. Domestic is calculated as the number of convertible bond offerings underwritten by domestic bookrunner divided by the total number of convertible bond offerings in the country over the sample period. Regional is calculated as the number of convertible bond offerings underwritten by a bookrunner from the same region as the issuer divided by the total number of convertible bond offerings over the sample period. Underwriter reputation is measured by either Top-3 country level market share in convertible bond offerings or Top-21 in global convertible market share ranking with Megginson and Weiss (1991) rank score ≥ 7. Domestic, Regional and underwriter reputation variables are expressed in percentage. YTM (in percentage) is the ex-ante yield to maturity. Spread (in percentage) is the total underwriting fees divided by total issue proceeds. TCOST (in percentage) is the total bond issue cost calculated by summing up the ex-ante yield to maturity and the underwriting fees. GDP is expressed based on constant 2010 in $billion. Stock market capitalization/GDP is calculated as the multiplication of share price with the number of shares outstanding for listed domestic companies and divided by GDP.

Table 3.2: Top 50 convertible bond bookrunners worldwide

Rank	Bookrunners	Country of Origin	Proceeds (US$ million)	Deals	Market share	Megginson-Weiss rank score
1	Goldman Sachs Group Inc	US	225,497.09	880	9.36	9.00
2	Morgan Stanley	US	202,151.33	896	8.39	8.92
3	Nomura Holdings Inc	Japan	180,987.48	1,212	7.51	8.84
4	Merrill Lynch	US	172,729.34	736	7.17	8.81
5	JPMorgan Chase & Co	US	160,247.62	834	6.65	8.75
6	Citigroup Inc	US	156,298.91	753	6.49	8.73
7	Credit Suisse	Switzerland	135,908.54	856	5.64	8.63
8	Deutsche Bank AG	Germany	113,480.66	600	4.71	8.50
9	UBS AG	Switzerland	107,460.71	633	4.46	8.46
10	Bank of America Merrill Lynch	US	74,159.17	490	3.08	8.19
11	Yamaichi Securities Co	Japan	71,662.95	605	2.97	8.16
12	Lehman Brothers Holdings Inc	US	66,710.32	314	2.77	8.11
13	Daiwa Securities Group Inc	Japan	55,461.95	484	2.30	7.98
14	Nikko Securities Co Ltd	Japan	50,570.60	470	2.10	7.91
15	BNP Paribas SA	France	35,015.00	204	1.45	7.64
16	Societe Generale	France	33,863.86	151	1.41	7.62
17	Barclays	UK	27,639.01	222	1.15	7.47
18	Swiss Bank Corporation	Switzerland	23,131.10	189	0.96	7.34
19	Donaldson Lufkin & Jenrette	US	18,748.92	109	0.78	7.18
20	Salomon Brothers	US	17,576.27	134	0.73	7.14
21	Bear Stearns & Co Inc	US	14,811.17	129	0.61	7.01
22	RBC Capital Markets	Canada	14,323.25	181	0.59	6.99
23	HSBC Holdings PLC	UK	14,288.00	120	0.59	6.99
24	Credit Agricole CIB	France	12,027.44	78	0.50	6.86
25	First Boston Corp	US	11,707.70	92	0.49	6.84
26	China International Capital Co	China	11,117.70	27	0.46	6.80
27	Mizuho Financial Group, Inc	Japan	10,632.81	94	0.44	6.77
28	ABN AMRO Bank NV	Netherlands	9,761.25	76	0.41	6.71
29	CITIC Securities Co Ltd	China	9,686.71	25	0.40	6.70
30	Mediobanca SpA	Italy	8,814.05	36	0.37	6.63
31	CIBC World Markets Inc	Canada	8,796.32	162	0.37	6.63
32	Banque de Paris et des Pays-Bas (Paribas)	France	8,620.78	53	0.36	6.62

Table 3.2: (continued)

Rank	Bookrunners	Country of Origin	Proceeds (US$ million)	Deals	Market share	Megginson-Weiss rank score
33	Lazard	US	8,405.41	68	0.35	6.60
34	Wells Fargo & Co	US	8,120.94	71	0.34	6.57
35	Drexel Burnham Lambert	US	8,006.90	113	0.33	6.56
36	Dresdner Bank AG	Germany	7,545.11	32	0.31	6.52
37	Jefferies LLC	US	7,299.63	77	0.30	6.50
38	Macquarie Group Limited	Australia	7,110.88	83	0.30	6.48
39	SMBC Nikko Securities Inc	Japan	6,750.78	46	0.28	6.44
40	Smith Barney Inc	US	6,596.80	72	0.27	6.42
41	BMO Financial Group	Canada	6,536.11	112	0.27	6.41
42	Royal Bank of Scotland	UK	6,106.82	58	0.25	6.36
43	Kidder Peabody & Co Inc	US	6,090.10	72	0.25	6.36
44	Wachovia Securities Inc	US	5,955.16	49	0.25	6.35
45	TD Securities	Canada	5,781.93	116	0.24	6.33
46	SG Warburg Soditic SA	Switzerland	5,312.90	33	0.22	6.26
47	ScotiaMcLeod Inc	Canada	5,290.47	107	0.22	6.26
48	Rothschild Group	UK	5,281.20	40	0.22	6.26
49	KGI Financial Services Group	Taiwan	4,931.65	74	0.20	6.21
50	Standard Chartered PLC	UK	4,542.60	38	0.19	6.15

Notes: This table presents league table for the top 50 banks in terms of market share in convertible bond offerings worldwide for the 1984–2015 period. Rank of bookrunner is based on the total underwritten market share in convertible bond offerings. Bookrunners indicate lead underwriter as indicated by SDC platinum. Country of origin indicates the headquarters of the bookrunners. Proceeds measured in US$ million refers total amount of underwritten convertible bond per bookrunner. Deals refer to total deals underwritten by each bookrunner. Market share is computed by dividing each bookrunner's total amount of underwriting by the corresponding total amount of convertible bond by all bookrunners in the sample period. Megginson-Weiss rank is computed based on Megginson and Weiss (1991) by the market share of the underwritten amount of proceeds by each bank. More specifically, [illegible] = [illegible] × 9, where [illegible] is a set of bookrunners, [illegible] is a market share by bookrunner [illegible], [illegible] equals year, [illegible] equals natural logarithms and [illegible] is the highest market share by the top bookrunner.

Table 3.3: Descriptive statistics of variables

Panel A: Summary statistics of variables				
Variable	Obs	Mean	Median	Std. Dev.
Firm characteristics				
Firm size (USD millions)	7,013	13.76	13.72	1.87
Financial leverage	6,610	0.30	0.26	0.51
Return on assets	7,013	-0.02	0.02	0.46
Financial Slack	6,944	0.23	0.14	0.63
Stock run-up	8,069	17.69	17.31	53.93
Stock volatility	8,069	3.05	2.63	1.71
Market characteristics				
Market run-up	8,069	12.49	12.68	21.56
Market volatility	8,069	1.17	1.06	0.48
Convertible bond characteristics				
Issue size (USD millions)	7,012	0.30	0.11	2.14
Years-to-maturity	7,471	1.84	1.64	0.61
S&P credit rating	7,347	20.36	22.00	4.39
Credit enhancement dummy	8,069	0.00	0.00	0.04
Call protection dummy	8,069	0.80	1.00	0.40
Public offering dummy	8,069	0.71	1.00	0.46
S&P rated bonds dummy	8,069	0.14	0.00	0.34
S&P investment grade dummy	8,069	0.05	0.00	0.22
Conversion premium	5,054	22.50	22.00	37.25
DELTA	6,671	0.43	0.42	0.41
First issue	8,069	0.61	1.00	0.49
Years-to-call-protection	6,481	6.68	4.10	14.71
Multiple tranches dummy	8,069	0.06	0.00	0.23
Yield	6,064	4.20	3.25	5.28
Coupon	7,079	3.13	2.38	2.88
Gross spread	4,057	2.55	2.50	1.46
TCOST	7,309	4.90	3.50	5.20
Lead underwriter characteristics				
Number of bookrunner(s)	8,068	1.23	1.00	0.68
Top3 or Top21	8,069	0.65	1.00	0.48
Instrumental variables				
GDP (in logarithm)	8,069	28.70	29.07	1.30
Number of convertible bond issues	8,069	7.75	8.43	1.07
Stok market capitalization/GDP	7,857	1.03	0.83	1.18

Notes: The detailed definition of variables can be obtained at Appendix A.

Table 3.3: (continued)

Panel B: S&P credit rating			
S&P credit rating	Rating value	Frequency	Percentage
AAA	1	9	0.11
AA+	2	3	0.04
AA	3	11	0.14
AA-	4	15	0.19
A+	5	23	0.29
A	6	39	0.48
A-	7	68	0.84
BBB+	8	70	0.87
BBB	9	88	1.09
BBB-	10	103	1.28
BB+	11	66	0.82
BB	12	31	0.38
BB-	13	88	1.09
B+	14	139	1.72
B	15	136	1.69
B-	16	146	1.81
CCC+	17	32	0.40
CCC	18	24	0.30
CCC-	19	2	0.02
CC	20	1	0.01
C	21	6	0.07
NR	22	6,247	77.41
No values		722	8.95
Total		8,069	100.00

Table 3.4: Pearson correlation matrix between the geographic proximity measure of bookrunner and control variables of firm, issue, market and instruments

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.00												
2	-0.06[a]	1.00											
3	-0.08[a]		1.00										
4	0.40[a]	-0.07[a]	-0.04	1.00									
5	-0.08[a]	0.02	0.01	-0.07[a]	1.00								
6	0.09[a]	-0.04	-0.04[c]	0.20[a]	-0.07[a]	1.00							
7	0.00	0.01	0.02	-0.19[a]	-0.04	-0.10[a]	1.00						
8	0.10[a]	-0.05[b]	-0.05[a]	-0.03	-0.09[a]	0.13[a]	0.01	1.00					
9	-0.18[a]	-0.01	0.00	-0.34[a]	0.16[a]	-0.29[a]	0.13[a]	-0.08[a]	1.00				
10	0.03	-0.03	-0.03	-0.05[b]	-0.04	0.02	0.00	0.16[a]	-0.16[a]	1.00			
11	0.05[a]	-0.14[a]	-0.15[a]	0.06[a]	-0.01	0.01	-0.02	-0.13[a]	0.29[a]	-0.26[a]	1.00		
12	-0.03	-0.01	-0.01	-0.19[a]	0.11[a]	-0.11[a]	0.39[a]	0.04	0.10[a]	0.03	-0.02	1.00	
13	0.25[a]	0.06[a]	0.06[a]	0.27[a]	-0.07[a]	0.09[a]	-0.03	0.15[a]	-0.25[a]	0.15[a]	-0.15[a]	0.00	1.00
14	-0.06[a]	-0.06[a]	-0.06[a]	-0.26[a]	0.00	-0.04	0.07[a]	0.01	0.09[a]	0.07[a]	0.11[a]	0.02	-0.29[a]
15	0.03	-0.04[b]	-0.03	0.03	0.00	0.01	0.00	0.00	-0.01	-0.02	0.02	0.00	0.01
16	0.37[a]	-0.22[a]	-0.19[a]	0.13[a]	-0.05[a]	-0.02	0.06[a]	0.06[a]	-0.01	0.04[b]	0.10[a]	0.03	0.15[a]
17	-0.11[a]	0.10[a]	0.13[a]	0.08[a]	0.02	0.02	-0.07[a]	-0.03	-0.12[a]	0.07[a]	-0.01	-0.03	0.02
18	0.19[a]	0.05[a]	0.08[a]	0.24[a]	0.01	0.01	0.00	-0.01	-0.02	-0.04[b]	0.04[b]	-0.02	-0.05[b]
19	0.05[a]	0.06[a]	0.06[a]	0.21[a]	0.00	0.04[c]	-0.07[a]	0.01	-0.06[a]	-0.04[b]	-0.14[a]	-0.01	0.35[a]
20	0.09[a]	0.02	0.03	0.25[a]	-0.01	0.04	-0.05[a]	-0.02	-0.10[a]	-0.06[a]	-0.04[b]	-0.01	0.18[a]
21	0.30[a]	0.25[a]	0.18[a]	0.16[a]	-0.05[c]	0.01	0.07[a]	0.10[a]	-0.05[a]	0.00	-0.16[a]	0.02	0.43[a]
22	-0.08[a]	-0.06[a]	-0.02	-0.17[a]	-0.05[b]	-0.10[a]	0.06[a]	-0.04[c]	0.17[a]	-0.07[a]	0.00	0.03	-0.20[a]
23	0.19[a]	0.34[a]	0.22[a]	0.06[a]	-0.03	-0.01	0.05[a]	0.03	-0.04	0.00	-0.21[a]	0.00	0.33[a]
24	0.38[a]	0.03	0.01	0.28[a]	0.01	0.05[a]	-0.06[a]	-0.03	-0.13[a]	-0.05[a]	0.04[a]	-0.05[a]	0.13[a]

Table 3.4: (continued)

	14	15	16	17	18	19	20	21	22	23	24
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14	1.00										
15	0.01	1.00									
16	0.13^{a}	0.02	1.00								
17	-0.07^{a}	0.01	-0.18^{a}	1.00							
18	-0.02	-0.01	0.13^{a}	-0.06^{a}	1.00						
19	-0.89^{a}	-0.01	-0.10^{a}	0.05^{a}	0.01	1.00					
20	-0.84^{a}	-0.01	-0.01	0.04	0.03	0.60^{a}	1.00				
21	-0.18^{a}	-0.01	0.21^{a}	-0.28^{a}	0.10^{a}	0.26^{a}	0.11^{a}	1.00			
22	0.07^{a}	0.00	0.12^{a}	-0.07^{a}	0.04	-0.06^{a}	-0.03	-0.24^{a}	1.00		
23	-0.11^{a}	-0.02	0.03	-0.21^{a}	-0.10^{a}	0.17^{a}	0.05^{a}	0.75^{a}	-0.12^{a}	1.00	
24	-0.17^{a}	0.02	0.14^{a}	-0.02	0.2^{a}	0.13^{a}	0.17^{a}	0.18^{a}	-0.05^{a}	0.13^{a}	1.00

Notes: 1 indicates Top3 or Top21 underwriter reputation, 2 indicates domestic bookrunner, 3 indicates regional bookrunner, 4 indicates firm size, 5 indicates financial leverage, 6 indicates return on assets, 7 indicates financial slack, 8 indicates stock run-up, 9 indicates stock volatility, 10 indicates market run-up, 11 indicates market volatility, 12 indicates relative issue size, 13 indicates years-to-maturity, 14 indicates S&P credit rating ranking, 15 indicates credit enhancement dummy, 16 indicates call protection dummy, 17 indicates public offering dummy, 18 indicates number of bookrunner(s), 19 indicates rated bonds dummy and 20 indicates S&P investment grade dummy, 21 indicates GDP in logarithms, 22 indicates stock market capitalization/GDP, 23 indicates number of convertible bond issues and 24 indicates economies of scale. The detailed definition of variables can be obtained at Appendix A. ^{a}, ^{b}, ^{c} indicates statistically significant at 1%, 5% and 10% significance level, respectively.

Table 3.5: Firm, issue, market and underwriter characteristics by underwriter geographic proximity

	Issues underwritten by domestic banks			Issues underwritten by non-domestic banks			*t*-Statistics	Wilcoxon rank-sum (Mann-Whitney) test
	Obs	Mean	Median	Obs	Mean	Median		
Panel A								
Firm size	5,238	13.68	13.67	1,775	13.97	13.89	5.53***	5.20***
Financial leverage	4,935	0.30	0.26	1,675	0.28	0.26	-1.65	0.07
Return on assets	5,238	-0.03	0.02	1,775	0.01	0.03	3.31***	8.13***
Financial slack	5,179	0.24	0.14	1,765	0.22	0.13	-1.24	-1.69*
Stock run-up	6,028	16.28	16.48	2,041	21.88	19.25	4.06***	3.01***
Market run-up	6,028	12.16	12.39	2,041	13.47	13.68	2.37**	2.97***
Stock volatility	6,028	3.04	2.60	2,041	3.09	2.71	1.20	3.52***
Market volatility	6,028	1.13	1.04	2,041	1.29	1.16	12.98***	13.21***
Relative issue size	5,238	0.28	0.11	1,774	0.34	0.12	0.86	2.05**
Years-to-maturity	5,514	1.86	1.79	1,957	1.78	1.61	-5.02***	-4.82***
Credit enhancer	6,028	0.00	0.00	2,041	0.00	0.00	3.99***	3.98***
Call protection dummy	6,028	0.75	1.00	2,041	0.95	1.00	19.78***	19.31***
Public offering dummy	6,028	0.73	1.00	2,041	0.63	1.00	-8.98***	-8.93***
Number of bookrunners	6,028	1.25	1.00	2,040	1.18	1.00	-4.22***	-3.76***
Top3 or Top21	6,028	0.64	1.00	2,041	0.70	1.00	5.19***	5.18***
S&P rated dummy	6,028	0.15	0.00	2,041	0.10	0.00	-5.70***	-5.69***
S&P investment grade dummy	6,028	0.06	0.00	2,041	0.04	0.00	-2.11**	-2.11**
S&P credit rating	5,322	20.18	22.00	2,025	20.82	22.00	5.55***	7.17***
Conversion premium	3,473	22.92	22.10	1,581	21.56	20.74	-1.20	0.05
DELTA	5,002	0.49	0.69	1,669	0.26	0.00	-19.89***	-22.27***
First issue	6,028	0.60	1.00	2,041	0.64	1.00	3.35***	3.35***
Years-to-call-protection	4,590	7.09	4.40	1,891	5.66	3.00	-3.56***	-13.28***
Multiple tranches dummy	6,028	0.06	0.00	2,041	0.04	0.00	-3.89***	-3.89***
Yield	4,478	4.29	3.13	1,586	3.95	3.50	-2.16**	-1.30
Coupon	5,181	3.24	2.50	1,898	2.81	2.00	-5.59***	-7.04***
Gross spread	3,002	2.65	2.50	1,055	2.25	2.50	-7.65***	-8.32***
TCOST	5,503	4.93	3.38	1,806	4.79	3.95	-1.03	2.58**

Table 3.5: (continued)

	Issues underwritten by regional banks			Issues underwritten by non-regional banks			*t*-Statistics	Wilcoxon rank-sum (Mann-Whitney) test
	Obs	Mean	Median	Obs	Mean	Median		
Panel B								
Firm size	5,572	13.72	13.69	1,441	13.89	13.85	3.16***	3.14***
Financial leverage	5,245	0.30	0.26	1,365	0.28	0.27	-1.11	0.91
Return on assets	5,572	-0.03	0.02	1,441	0.02	0.03	3.55***	8.10***
Financial slack	5,512	0.24	0.14	1,432	0.21	0.14	-1.52	0.00
Stock run-up	6,398	16.36	16.34	1,671	22.79	20.12	4.34***	3.59***
Market run-up	6,398	12.13	12.49	1,671	13.85	13.71	2.91***	3.23***
Stock volatility	6,398	3.05	2.61	1,671	3.06	2.71	0.19	3.77***
Market volatility	6,398	1.14	1.04	1,671	1.31	1.19	13.37***	13.99***
Relative issue size	5,572	0.28	0.11	1,440	0.35	0.12	1.11	2.76***
Years-to-maturity	5,865	1.86	1.79	1,606	1.78	1.61	-4.81***	-4.83***
Credit enhancer	6,398	0.00	0.00	1,671	0.00	0.00	3.07***	3.07***
Call protection dummy	6,398	0.76	1.00	1,671	0.95	1.00	17.18***	16.88***
Public offering dummy	6,398	0.74	1.00	1,671	0.59	1.00	-11.95***	-11.84***
Number of bookrunner(s)	6,398	1.26	1.00	1,670	1.13	1.00	-6.98***	-6.99***
Top3 or Top21	6,398	0.63	1.00	1,671	0.73	1.00	7.37***	7.35***
S&P rated dummy	6,398	0.15	0.00	1,671	0.10	0.00	-5.20***	-5.19***
S&P investment grade dummy	6,398	0.06	0.00	1,671	0.04	0.00	-2.55**	-2.55**
S&P credit rating	5,680	20.21	22.00	1,667	20.86	22.00	5.30***	6.60***
Conversion premium	3,777	22.75	22.16	1,277	21.74	20.00	-0.84	-0.50
DELTA	5,317	0.48	0.65	1,354	0.25	0.00	-19.14***	-22.00***
First issue	6,398	0.61	1.00	1,671	0.62	1.00	0.52	0.52
Years-to-call-protection	4,925	7.10	4.30	1,556	5.35	3.00	-4.09***	-14.09***
Multiple tranches dummy	6,398	0.06	0.00	1,671	0.04	0.00	-3.86***	-3.85***
Yield	4,783	4.35	3.25	1,281	3.64	3.13	-4.27***	-4.81***
Coupon	5,517	3.30	2.50	1,562	2.51	1.50	-9.59***	-10.91***
Gross spread	3,188	2.64	2.50	869	2.20	2.25	-8.05***	-8.79***
TCOST	5,839	5.01	3.50	1,470	4.47	3.50	-3.52***	-0.80

Table 3.5: (continued)

	Issues underwritten by reputable banks			Issues underwritten by non-reputable banks			*t*-Statistics	Wilcoxon rank-sum (Mann-Whitney) test
	Obs	Mean	Median	Obs	Mean	Median		
Panel C								
Firm size	4,798	14.27	14.13	2,215	12.64	12.72	-37.04***	-32.72***
Financial leverage	4,554	0.27	0.25	2,056	0.36	0.28	6.74***	8.32***
Return on assets	4,798	0.01	0.02	2,215	-0.08	0.02	-7.51***	-5.51***
Financial slack	4,756	0.23	0.15	2,188	0.23	0.11	0.00	-9.15***
Stock run-up	5,277	21.42	19.61	2,792	10.65	11.97	-8.58***	-8.45***
Market run-up	5,277	12.91	12.58	2,792	11.68	12.92	-2.44**	-0.59
Stock volatility	5,277	2.82	2.52	2,792	3.48	2.90	16.88***	14.88***
Market volatility	5,277	1.19	1.09	2,792	1.14	1.01	-4.50***	-7.25***
Relative issue size	4,798	0.25	0.11	2,214	0.40	0.13	2.66***	5.96***
Years-to-maturity	4,894	1.96	1.92	2,577	1.63	1.61	-22.52***	-24.98***
Credit enhancer	5,277	0.00	0.00	2,792	0.00	0.00	-2.30**	-2.30**
Call protection dummy	5,277	0.91	1.00	2,792	0.60	1.00	-35.47***	-32.99***
Public offering dummy	5,277	0.67	1.00	2,792	0.78	1.00	10.10***	10.04***
Number of bookrunners	5,277	1.32	1.00	2,791	1.06	1.00	-17.18***	-18.54***
S&P rated dummy	5,277	0.15	0.00	2,792	0.11	0.00	-4.62***	-4.61***
S&P investment grade dummy	5,277	0.07	0.00	2,792	0.02	0.00	-8.32***	-8.29***
S&P credit rating	5,112	20.18	22.00	2,235	20.77	22.00	5.30***	2.41**
Conversion premium	3,279	25.83	25.00	1,775	16.34	14.89	-8.70***	-21.16***
DELTA	4,443	0.43	0.44	2,228	0.44	0.41	0.71	4.64***
First issue	5,277	0.56	1.00	2,792	0.71	1.00	13.80***	13.64***
Years-to-call-protection	4,706	6.59	4.40	1,775	6.90	3.00	0.75	-15.99***
Multiple tranches dummy	5,277	0.07	0.00	2,792	0.04	0.00	-5.38***	-5.38***
Yields	4,263	3.46	2.75	1,801	5.94	5.10	17.06***	21.73***
Coupon	4,705	2.76	2.20	2,374	3.86	3.00	15.47***	7.44***
Gross spread	2,666	2.31	2.50	1,391	3.01	2.50	14.94***	8.29***
TCOST	4,932	4.24	3.20	2,377	6.26	5.00	15.81***	14.88***

Notes: The detailed definition of variables can be obtained at Appendix A. Obs indicates total number of observation. ***, ** and * indicates statistically significant at 1%, 5% and 10%, respectively.

Table 3.6: Determinants of domestic and regional bookrunner selection

Panel A: Probit regression analysis of choosing a domestic bookrunner.

Model	1	2	3	4	5	6	7	8	9
Intercept	-8.516***	-8.281***	-8.963***	-1.779***	-1.710***	-1.689***	-5.115***	-4.894***	-5.721***
	(-12.237)	(-12.078)	(-12.392)	(-4.987)	(-4.826)	(-4.232)	(-6.555)	(-6.346)	(-7.090)
Firm size	-0.104***	-0.108***	-0.120***	-0.080***	-0.084***	-0.092***	-0.086***	-0.091***	-0.102***
	(-5.725)	(-5.932)	(-6.314)	(-4.470)	(-4.683)	(-4.964)	(-4.785)	(-5.008)	(-5.415)
Financial leverage	-0.025	-0.019	-0.168	-0.088	-0.081	-0.191	-0.061	-0.054	-0.178
	(-0.206)	(-0.153)	(-1.362)	(-0.736)	(-0.674)	(-1.581)	(-0.509)	(-0.449)	(-1.467)
Return on assets	-0.487***	-0.500***	-0.569***	-0.415***	-0.422***	-0.491***	-0.405**	-0.415***	-0.485***
	(-2.892)	(-2.954)	(-3.322)	(-2.659)	(-2.689)	(-3.029)	(-2.568)	(-2.615)	(-2.977)
Financial slack	0.063	0.084	0.102	0.093	0.104	0.127	0.050	0.067	0.082
	(0.707)	(0.931)	(1.087)	(1.096)	(1.223)	(1.438)	(0.596)	(0.787)	(0.934)
Stock run-up	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.001***	-0.002***	-0.002***	-0.002***
	(-4.294)	(-4.281)	(-3.825)	(-3.225)	(-3.215)	(-2.822)	(-3.743)	(-3.718)	(-3.386)
Stock volatility	-0.001	-0.004	-0.023	-0.024	-0.025	-0.039**	-0.018	-0.020	-0.035*
	(-0.041)	(-0.231)	(-1.191)	(-1.289)	(-1.371)	(-2.008)	(-0.954)	(-1.090)	(-1.777)
Market run-up	-0.000	-0.000	0.000	0.001	0.001	0.002	0.001	0.001	0.002
	(-0.199)	(-0.175)	(0.055)	(0.974)	(1.011)	(1.097)	(0.946)	(0.990)	(1.094)
Market volatility	-0.390***	-0.364***	-0.311***	-0.306***	-0.289***	-0.251***	-0.304***	-0.282***	-0.240***
	(-5.546)	(-5.170)	(-4.252)	(-4.233)	(-4.001)	(-3.350)	(-4.279)	(-3.958)	(-3.263)
Relative issue size	-0.090**	-0.095**	-0.093**	-0.063*	-0.067**	-0.064*	-0.070**	-0.074**	-0.073**
	(-2.207)	(-2.294)	(-2.334)	(-1.892)	(-1.990)	(-1.940)	(-2.008)	(-2.114)	(-2.124)
Years-to-maturity(LN)	0.138***	0.118**	0.190***	0.227***	0.212***	0.286***	0.166***	0.149***	0.213***
	(2.800)	(2.393)	(3.699)	(4.688)	(4.418)	(5.648)	(3.314)	(2.978)	(4.062)
Credit enhancer	-1.324***	-1.302***	-1.291**	-1.320***	-1.305***	-1.294***	-1.333***	-1.315***	-1.307***
	(-2.703)	(-2.645)	(-2.552)	(-2.777)	(-2.735)	(-2.704)	(-2.755)	(-2.706)	(-2.643)
Call protection dummy	-0.896***	-0.885***	-0.543***	-0.685***	-0.677***	-0.437***	-0.725***	-0.713***	-0.441***
	(-10.023)	(-9.746)	(-5.675)	(-7.974)	(-7.809)	(-4.684)	(-8.199)	(-7.963)	(-4.648)
Public offering dummy	0.491***	0.485***	0.470***	0.553***	0.550***	0.526***	0.590***	0.585***	0.566***
	(8.927)	(8.816)	(8.433)	(9.801)	(9.743)	(9.180)	(10.262)	(10.179)	(9.708)
Number of bookrunner(s)	0.235***	0.229***	0.215***	0.314***	0.311***	0.301***	0.298***	0.294***	0.278***
	(5.184)	(5.114)	(4.774)	(6.014)	(6.015)	(5.841)	(5.810)	(5.798)	(5.511)

Table 3.6: (continued)

Panel A: Probit regression analysis of choosing a domestic bookrunner.

Model	1	2	3	4	5	6	7	8	9
Top3 or Top21	-0.135**	-0.129**	-0.129**	-0.178***	-0.175***	-0.174***	-0.196***	-0.191***	-0.192***
	(-2.175)	(-2.068)	(-2.027)	(-2.922)	(-2.862)	(-2.771)	(-3.156)	(-3.067)	(-2.998)
GDP	0.393***	0.387***	0.407***				0.155***	0.149***	0.187***
	(15.917)	(15.818)	(16.461)				(4.570)	(4.399)	(5.426)
Number of convertible issue				0.512***	0.511***	0.506***	0.392***	0.395***	0.361***
				(18.311)	(18.357)	(18.028)	(10.591)	(10.681)	(9.543)
S&P rated bond dummy	-0.193**			-0.095			-0.143*		
	(-2.472)			(-1.205)			(-1.796)		
S&P investment grade dummy		-0.005			0.067			0.048	
		(-0.050)			(0.659)			(0.477)	
S&P rating dummy			0.003			-0.002			0.000
			(0.491)			(-0.356)			(0.000)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm clusters	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.197	0.196	0.193	0.218	0.218	0.208	0.224	0.223	0.216
Observations	6,073	6,073	5,677	6,073	6,073	5,677	6,073	6,073	5,677

Notes: the detailed definition of variables can be obtained at Appendix A. ***, ** and * indicate statistically significant at 1%, 5% and 10%, respectively.

Table 3.6: (continued)

Panel B: Probit regression analysis of choosing a regional bookrunner.

Model	1	2	3	4	5	6	7	8	9
Intercept	-6.097***	-5.832***	-6.560***	-0.656*	-0.569	-0.724*	-4.343***	-4.059***	-5.023***
	(-8.427)	(-8.201)	(-8.816)	(-1.776)	(-1.553)	(-1.782)	(-5.274)	(-4.998)	(-5.930)
Firm size	-0.058***	-0.063***	-0.068***	-0.043**	-0.048***	-0.051***	-0.049***	-0.054***	-0.060***
	(-3.155)	(-3.433)	(-3.628)	(-2.352)	(-2.606)	(-2.722)	(-2.684)	(-2.952)	(-3.196)
Financial leverage	-0.307**	-0.303**	-0.410***	-0.336***	-0.332***	-0.413***	-0.316**	-0.311**	-0.408***
	(-2.456)	(-2.403)	(-3.294)	(-2.691)	(-2.643)	(-3.301)	(-2.535)	(-2.484)	(-3.282)
Return on assets	-0.909***	-0.930***	-0.884***	-0.876***	-0.892***	-0.855***	-0.860***	-0.879***	-0.841***
	(-4.569)	(-4.604)	(-4.442)	(-4.487)	(-4.505)	(-4.394)	(-4.429)	(-4.459)	(-4.316)
Financial slack	0.044	0.067	0.095	0.082	0.097	0.130	0.039	0.060	0.088
	(0.492)	(0.743)	(1.023)	(0.945)	(1.107)	(1.435)	(0.453)	(0.686)	(0.966)
Stock run-up	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.001***	-0.002***	-0.002***	-0.002***
	(-3.801)	(-3.778)	(-3.406)	(-3.017)	(-3.000)	(-2.656)	(-3.564)	(-3.531)	(-3.234)
Stock volatility	0.014	0.009	-0.008	0.001	-0.001	-0.015	0.007	0.003	-0.012
	(0.733)	(0.507)	(-0.438)	(0.072)	(-0.073)	(-0.830)	(0.374)	(0.169)	(-0.659)
Market run-up	-0.002	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(-1.199)	(-1.177)	(-0.963)	(-0.544)	(-0.516)	(-0.422)	(-0.606)	(-0.566)	(-0.466)
Market volatility	-0.552***	-0.522***	-0.475***	-0.526***	-0.503***	-0.470***	-0.516***	-0.488***	-0.449***
	(-7.657)	(-7.198)	(-6.367)	(-7.189)	(-6.861)	(-6.250)	(-7.160)	(-6.735)	(-6.046)
Relative issue size	-0.083**	-0.088**	-0.084**	-0.065*	-0.069**	-0.065**	-0.072**	-0.077**	-0.075**
	(-2.145)	(-2.253)	(-2.268)	(-1.917)	(-2.023)	(-1.980)	(-2.030)	(-2.142)	(-2.154)
Years-to-maturity(LN)	0.241***	0.217***	0.287***	0.324***	0.304***	0.377***	0.259***	0.237***	0.300***
	(4.674)	(4.199)	(5.348)	(6.456)	(6.096)	(7.225)	(4.973)	(4.549)	(5.557)
Credit enhancer	-0.794**	-0.759**	-0.739**	-0.765**	-0.739**	-0.734**	-0.769**	-0.737**	-0.724**
	(-2.431)	(-2.304)	(-2.246)	(-2.275)	(-2.175)	(-2.202)	(-2.256)	(-2.134)	(-2.115)
Call protection dummy	-0.706***	-0.692***	-0.390***	-0.575***	-0.563***	-0.341***	-0.621***	-0.605***	-0.344***
	(-7.762)	(-7.456)	(-3.956)	(-6.481)	(-6.255)	(-3.530)	(-6.785)	(-6.481)	(-3.505)
Public offering dummy	0.562***	0.555***	0.528***	0.566***	0.562***	0.526***	0.604***	0.599***	0.566***
	(10.005)	(9.873)	(9.315)	(10.027)	(9.962)	(9.221)	(10.551)	(10.448)	(9.783)
Number of bookrunner(s)	0.347***	0.339***	0.326***	0.398***	0.392***	0.382***	0.380***	0.373***	0.356***
	(6.058)	(5.994)	(5.698)	(6.496)	(6.469)	(6.271)	(6.273)	(6.235)	(5.915)

Table 3.6: (continued)

Panel A: Probit regression analysis of choosing a domestic bookrunner.									
Model	1	2	3	4	5	6	7	8	9
Top3 or Top21	-0.283***	-0.277***	-0.279***	-0.285***	-0.281***	-0.278***	-0.307***	-0.301***	-0.301***
	(-4.282)	(-4.159)	(-4.103)	(-4.389)	(-4.319)	(-4.186)	(-4.643)	(-4.540)	(-4.432)
GDP	0.291***	0.284***	0.300***				0.171***	0.163***	0.198***
	(11.403)	(11.268)	(11.889)				(4.708)	(4.501)	(5.437)
Number of convertible issue				0.324***	0.323***	0.317***	0.191***	0.195***	0.161***
				(12.161)	(12.191)	(11.970)	(5.037)	(5.170)	(4.214)
S&P rated bond dummy	-0.222***			-0.144*			-0.197**		
	(-2.768)			(-1.811)			(-2.447)		
S&P investment grade dummy		-0.006			0.037			0.017	
		(-0.059)			(0.353)			(0.161)	
S&P rating dummy			0.005			0.002			0.004
			(0.993)			(0.384)			(0.777)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm clusters	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.190	0.189	0.183	0.190	0.189	0.179	0.197	0.195	0.188
Observations	6,073	6,073	5,677	6,073	6,073	5,677	6,073	6,073	5,677

Notes: the detailed definition of variables can be obtained at Appendix A. ***, ** and * indicate statistically significant at 1%, 5% and 10%, respectively.

Table 3.7: Predicted probabilities of domestic and regional bookrunner

Variable	Value	Predicted probability of domestic bookrunner (Model 7 of Panel A in Table 3.6)	Chi-squared test statistics of predicted probability of domestic bookrunner between value 0 and 1 or 25th and 75th	Predicted probability of regional bookrunner (Model 7 of Panel B in Table 3.6)	Chi-squared test statistics of predicted probability of regional bookrunner between value 0 and 1 or 25th and 75th
S&P rated bond dummy	0	0.788	3.33*	0.839	5.57**
	1	0.742		0.785	
Top 3 or Top 21	0	0.823	12.50***	0.882	26.35***
	1	0.763		0.807	
Number of bookrunner(s)	1	0.753	100.83***	0.806	126.96***
	2	0.881		0.921	
	3	0.933		0.956	
	4	0.951		0.971	
	5	0.894		0.914	
	6	0.902			
	7	0.848			
Call protection dummy	0	0.918	125.21***	0.931	78.65***
	1	0.741		0.803	
Public offering dummy	0	0.639	95.04***	0.703	95.55***
	1	0.828		0.871	
Firm size	25th	0.868	25.22***	0.897	24.53***
	50th	0.803		0.844	
	75th	0.765		0.806	
	100th	0.687		0.779	

Table 3.7: (continued)

Variable	Value	Predicted probability of domestic bookrunner (Model 7 of Panel A in Table 3.6)	Chi-squared test statistics of predicted probability of domestic bookrunner between value 0 and 1 or 25th and 75th	Predicted probability of regional bookrunner (Model 7 of Panel B in Table 3.6)	Chi-squared test statistics of predicted probability of regional bookrunner between value 0 and 1 or 25th and 75th
Return on assets	25th	0.767	8.30***	0.831	3.47*
	50th	0.789		0.833	
	75th	0.827		0.865	
	100th	0.748		0.803	
Stock run-up	25th	0.800	1.06	0.843	1.10
	50th	0.799		0.853	
	75th	0.780		0.825	
	100th	0.762		0.817	
Market volatility	25th	0.821	3.15*	0.884	11.02***
	50th	0.819		0.873	
	75th	0.782		0.824	
	100th	0.717		0.748	
Relative issue size	25th	0.814	0.75	0.858	0.68
	50th	0.824		0.868	
	75th	0.795		0.843	
	100th	0.678		0.742	
Years-to-maturity	25th	0.783	5.04**	0.832	3.29*
	50th	0.651		0.699	
	75th	0.833		0.867	
	100th	0.848		0.903	

Notes: the detailed definition of variables can be obtained at Appendix A. ***, ** and * indicate statistically significant at 1%, 5% and 10%, respectively.

Table 3.8: Determinants of proportion of domestic and regional bookrunner selection

Dependent variable	Domestic	Regional	Domestic	Regional
	OLS regressions		Tobit regressions	
Model	1	2	3	4
Intercept	-0.876***	-0.779***	-13.508***	-10.470***
	(-4.028)	(-3.542)	(-4.205)	(-3.482)
Firm size	-0.026***	-0.013***	-0.389***	-0.227***
	(-5.428)	(-2.744)	(-5.107)	(-3.236)
Financial leverage	-0.046**	-0.101***	-0.294	-1.141**
	(-1.987)	(-4.641)	(-0.623)	(-2.512)
Return on assets	-0.062**	-0.120***	-1.365**	-2.718***
	(-2.299)	(-4.775)	(-2.201)	(-4.278)
Financial slack	-0.003	-0.005	-0.025	0.033
	(-0.128)	(-0.241)	(-0.072)	(0.099)
Stock run-up	-0.001***	-0.000***	-0.007***	-0.007***
	(-4.244)	(-4.018)	(-3.674)	(-3.617)
Stock volatility	-0.005	0.003	-0.083	0.018
	(-0.911)	(0.697)	(-1.117)	(0.266)
Market run-up	0.000	-0.000	0.004	-0.003
	(1.414)	(-0.400)	(0.813)	(-0.526)
Market volatility	-0.088***	-0.137***	-1.138***	-1.814***
	(-4.531)	(-7.104)	(-3.878)	(-6.355)
Relative issue size	-0.020*	-0.020**	-0.298**	-0.306**
	(-1.920)	(-2.165)	(-2.066)	(-2.063)
Years-to-maturity(LN)	0.044***	0.062***	0.671***	0.958***
	(3.119)	(4.375)	(3.238)	(4.692)
Credit enhancer	-0.352***	-0.295***	-5.585***	-3.494***
	(-3.294)	(-2.748)	(-2.650)	(-2.733)
Call protection dummy	-0.191***	-0.133***	-3.252***	-2.440***
	(-11.000)	(-8.193)	(-8.660)	(-7.067)
Public offering dummy	0.162***	0.160***	2.267***	2.182***
	(10.121)	(10.055)	(8.568)	(8.813)
Number of bookrunner(s)	-0.024***	-0.019**	-0.392***	-0.495***
	(-2.936)	(-2.184)	(-3.659)	(-5.091)
Top3 or Top21	-0.051***	-0.088***	-0.740***	-1.243***
	(-3.185)	(-5.511)	(-2.858)	(-4.820)
GDP	0.037***	0.049***	0.482***	0.560***
	(3.786)	(4.847)	(3.537)	(4.211)
Number of convertible issue	0.136***	0.062***	1.599***	0.698***
	(12.993)	(5.810)	(9.276)	(4.994)
S&P rated bond dummy	-0.075***	-0.084***	-0.502*	-0.620**
	(-4.120)	(-4.666)	(-1.649)	(-2.192)
Year dummies	Yes	Yes	Yes	Yes
Firm clusters	Yes	Yes	Yes	Yes
R-squared / Pseudo R-squared	0.265	0.198	0.180	0.149
Observations	6,073	6,073	6,073	6,073

Notes: the detailed definition of variables can be obtained at Appendix A. ***, ** and * indicate statistically significant at 1%, 5% and 10%, respectively.

Table 3.9: Convertible bond characteristics on the domestic and regional bookrunner selection

Panel A: Probit regression analysis of choosing a domestic bookrunner.

Model	1	2	3	4	5	6	7	8	9	10
Intercept	-4.490***	-4.731***	-5.118***	-6.386***	-4.973***	-7.613***	-5.059***	-7.249***	-6.043***	-10.158***
	(-5.701)	(-5.743)	(-6.531)	(-7.656)	(-6.326)	(-7.681)	(-6.039)	(-5.944)	(-7.155)	(-5.004)
Firm size	-0.097***	-0.069***	-0.086***	-0.105***	-0.091***	-0.063***	-0.096***	-0.109***	-0.086***	-0.072*
	(-4.772)	(-3.667)	(-4.709)	(-5.214)	(-4.975)	(-3.164)	(-4.947)	(-4.661)	(-4.548)	(-1.827)
Financial leverage	0.094	-0.002	-0.061	-0.199	-0.050	0.033	-0.034	-0.049	-0.031	0.128
	(0.670)	(-0.016)	(-0.500)	(-1.575)	(-0.417)	(0.234)	(-0.267)	(-0.286)	(-0.240)	(0.464)
Return on assets	-0.354**	-0.287*	-0.405**	-0.424**	-0.381**	-0.356*	-0.470**	-0.125	-0.328**	-0.072
	(-2.076)	(-1.836)	(-2.567)	(-2.488)	(-2.449)	(-1.924)	(-2.514)	(-0.555)	(-2.041)	(-0.174)
Financial slack	0.040	0.053	0.051	0.104	0.050	0.057	0.090	-0.112	0.049	0.010
	(0.470)	(0.614)	(0.597)	(1.172)	(0.590)	(0.616)	(0.988)	(-0.836)	(0.564)	(0.061)
Stock run-up	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.001***	-0.001*	-0.002***	-0.002*
	(-3.182)	(-3.167)	(-3.743)	(-3.064)	(-3.696)	(-3.580)	(-2.777)	(-1.936)	(-3.809)	(-1.707)
Stock volatility	-0.050**	-0.057**	-0.018	-0.024	-0.020	-0.007	-0.019	-0.007	-0.004	0.024
	(-2.382)	(-2.367)	(-0.955)	(-1.201)	(-1.052)	(-0.290)	(-0.960)	(-0.262)	(-0.203)	(0.659)
Market run-up	-0.001	0.001	0.001	-0.000	0.001	0.002	0.001	-0.000	0.002	-0.003
	(-0.677)	(0.807)	(0.945)	(-0.014)	(0.837)	(1.356)	(0.507)	(-0.207)	(1.478)	(-0.746)
Market volatility	-0.492***	-0.146*	-0.304***	-0.277***	-0.310***	-0.232***	-0.328***	-0.346***	-0.322***	-0.540***
	(-5.796)	(-1.879)	(-4.255)	(-3.560)	(-4.347)	(-2.766)	(-4.318)	(-2.957)	(-4.319)	(-3.146)
Relative issue size	-0.036	-0.047	-0.070**	-0.098**	-0.068**	-0.046	-0.126**	-0.066*	-0.067**	-0.050
	(-1.198)	(-1.361)	(-2.007)	(-2.085)	(-1.995)	(-1.450)	(-2.157)	(-1.800)	(-2.011)	(-0.417)
Years-to-maturity(LN)	0.028	0.105*	0.166***	0.168***	0.160***	0.125**	0.137**	0.239***	0.154***	0.188
	(0.511)	(1.866)	(3.320)	(2.819)	(3.204)	(2.163)	(2.553)	(3.349)	(2.944)	(1.429)
Credit enhancer	-	-1.490***	-1.333***	-1.240**	-1.428***	-1.440**	-1.282**	-1.238**	-1.356***	-
		(-2.980)	(-2.753)	(-2.295)	(-2.844)	(-2.565)	(-2.465)	(-2.064)	(-2.759)	
Call protection dummy	-0.618***	-0.721***	-0.725***	-0.311***	-0.730***	-0.774***	-0.672***	-0.549***	-0.738***	-0.600*
	(-6.267)	(-8.086)	(-8.198)	(-2.687)	(-8.249)	(-5.655)	(-7.092)	(-4.598)	(-7.576)	(1.838)
Public offering dummy	0.103	0.406***	0.590***	0.636***	0.573***	0.861***	0.626***	0.292***	0.650***	0.336***
	(1.635)	(6.390)	(10.252)	(10.285)	(9.998)	(12.511)	(10.439)	(3.801)	(10.781)	(2.740)
Number of bookrunner(s)	0.318***	0.310***	0.298***	0.362***	0.298***	0.393***	0.298***	0.413***	0.366***	0.610***
	(6.053)	(5.515)	(5.812)	(6.784)	(5.784)	(6.004)	(5.490)	(5.059)	(6.036)	(5.364)

Table 3.9: (continued)

Panel A: Probit regression analysis of choosing a domestic bookrunner.

Model	1	2	3	4	5	6	7	8	9	10
Top3 or Top21	-0.463***	-0.223***	-0.196***	-0.313***	-0.196***	-0.043	-0.199***	-0.075	-0.150**	-0.064
	(-6.787)	(-3.336)	(-3.154)	(-4.577)	(-3.165)	(-0.609)	(-3.087)	(-0.941)	(-2.276)	(-0.448)
GDP	0.199***	0.139***	0.155***	0.198***	0.153***	0.203***	0.159***	0.305***	0.191***	0.304***
	(5.609)	(3.851)	(4.557)	(5.368)	(4.457)	(5.040)	(4.369)	(5.614)	(5.297)	(3.768)
Number of convertible issue	0.267***	0.383***	0.392***	0.384***	0.392***	0.450***	0.399***	0.223***	0.386***	0.330***
	(6.490)	(9.324)	(10.420)	(9.581)	(10.495)	(10.175)	(9.997)	(3.776)	(9.899)	(3.748)
S&P rated bond dummy	-0.299***	-0.092	-0.143*	0.016	-0.132*	-0.302***	-0.229***	0.118	-0.169**	-0.008
	(3.575)	(-1.047)	(-1.796)	(0.181)	(-1.663)	(-3.404)	(-2.587)	(1.189)	(-2.072)	(-0.047)
Conversion premium	0.001									-0.004
	(1.014)									(-1.588)
DELTA		0.620***								0.142
		(9.243)								(0.859)
First issue			0.002							0.078
			(0.043)							(0.755)
Years-to-call-protection				0.025**						-0.017
				(2.204)						(-0.677)
Multiple tranches dummy					0.371***					0.475*
					(4.425)					(1.660)
Yield						0.003				0.046
						(0.664)				(1.493)
Coupon							0.004			-0.020
							(0.348)			(-0.505)
Gross spread								-0.061*		-0.124*
								(-1.914)		(-1.776)
TCOST									-0.011***	-
									(-2.624)	
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm clusters	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.251	0.256	0.224	0.223	0.226	0.250	0.229	0.280	0.228	0.357
Observations	3,914	5,488	6,073	5,014	6,073	4,732	5,648	3,013	5,534	1,061

Notes: the detailed definition of variables can be obtained at Appendix A. ***, ** and * indicate statistically significant at 1%, 5% and 10%, respectively.

Table 3.9: (continued)

Panel B: Probit regression analysis of choosing a regional bookrunner.

Model	1	2	3	4	5	6	7	8	9	10
Intercept	-3.586***	-3.524***	-4.427***	-5.533***	-4.234***	-6.370***	-4.138***	-6.443***	-5.147***	-7.043***
	(-4.319)	(-4.112)	(-5.366)	(-6.368)	(-5.115)	(-6.229)	(-4.739)	(-5.162)	(-5.799)	(-3.684)
Firm size	-0.039*	-0.025	-0.046**	-0.066***	-0.053***	-0.022	-0.052***	-0.059**	-0.044**	0.012
	(-1.885)	(-1.292)	(-2.458)	(-3.239)	(-2.888)	(-1.090)	(-2.603)	(-2.539)	(-2.278)	(0.303)
Financial leverage	-0.187	-0.306**	-0.302**	-0.469***	-0.308**	-0.204	-0.289**	-0.247	-0.287**	-0.048
	(-1.358)	(-2.329)	(-2.393)	(-3.638)	(-2.474)	(-1.464)	(-2.193)	(-1.359)	(-2.218)	(-0.179)
Return on assets	-0.723***	-0.710***	-0.865***	-0.820***	-0.836***	-0.809***	-0.817***	-0.428*	-0.766***	-0.363
	(-3.671)	(-3.659)	(-4.430)	(-4.366)	(-4.343)	(-3.813)	(-4.126)	(-1.696)	(-3.950)	(-0.896)
Financial slack	0.016	0.034	0.046	0.091	0.038	0.047	0.107	-0.150	0.028	-0.057
	(0.192)	(0.388)	(0.524)	(0.998)	(0.444)	(0.496)	(1.096)	(-1.130)	(0.316)	(-0.379)
Stock run-up	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.001**	-0.002**	-0.002***	-0.003**
	(-2.739)	(-3.163)	(-3.580)	(-3.091)	(-3.543)	(-3.189)	(-2.458)	(-2.080)	(-3.419)	(-2.175)
Stock volatility	-0.024	-0.026	0.006	0.005	0.005	0.012	-0.007	0.022	0.022	0.035
	(-1.225)	(-1.255)	(0.313)	(0.291)	(0.292)	(0.506)	(-0.356)	(0.764)	(1.074)	(0.862)
Market run-up	-0.003*	-0.001	-0.001	-0.002	-0.001	-0.001	-0.001	-0.002	-0.000	-0.005
	(-1.720)	(-0.657)	(-0.625)	(-1.306)	(-0.709)	(-0.450)	(-0.803)	(-0.971)	(-0.027)	(-1.317)
Market volatility	-0.711***	-0.363***	-0.510***	-0.497***	-0.520***	-0.441***	-0.469***	-0.569***	-0.509***	-0.630***
	(-8.314)	(-4.659)	(-7.067)	(-6.313)	(-7.209)	(-5.251)	(-6.135)	(-4.761)	(-6.751)	(-3.521)
Relative issue size	-0.038	-0.051	-0.072**	-0.123**	-0.071**	-0.046	-0.137**	-0.061*	-0.069**	-0.073
	(-1.286)	(-1.400)	(-1.998)	(-2.233)	(-2.017)	(-1.522)	(-2.048)	(-1.774)	(-1.972)	(-0.696)
Years-to-maturity(LN)	0.115**	0.175***	0.257***	0.225***	0.253***	0.233***	0.229***	0.333***	0.238***	0.211
	(1.994)	(2.963)	(4.947)	(3.666)	(4.896)	(3.957)	(4.080)	(4.474)	(4.410)	(1.546)
Credit enhancer	-0.188	-0.751*	-0.757**	-0.918**	-0.827**	-1.019**	-0.936**	-0.863**	-0.763**	-
	(-0.688)	(-1.791)	(-2.215)	(-2.043)	(-2.310)	(-2.139)	(-2.216)	(-2.399)	(-2.201)	
Call protection dummy	-0.520***	-0.623***	-0.621***	-0.258**	-0.627***	-0.675***	-0.607***	-0.406***	-0.624***	0.318
	(-5.137)	(-6.725)	(-6.773)	(-2.211)	(-6.837)	(-4.707)	(-6.116)	(-3.363)	(-6.300)	(0.974)
Public offering dummy	0.093	0.362***	0.607***	0.647***	0.588***	0.844***	0.623***	0.265***	0.647***	0.204
	(1.441)	(5.722)	(10.588)	(10.620)	(10.291)	(12.398)	(10.437)	(3.499)	(10.772)	(1.564)
Number of bookrunner(s)	0.389***	0.428***	0.380***	0.413***	0.380***	0.398***	0.376***	0.325***	0.384***	0.510***
	(6.211)	(6.077)	(6.276)	(6.349)	(6.278)	(5.500)	(6.044)	(4.016)	(5.772)	(4.384)

Table 3.9: (continued)

Panel B: Probit regression analysis of choosing a regional bookrunner.										
Model	1	2	3	4	5	6	7	8	9	10
Top3 or Top21	-0.583***	-0.358***	-0.303***	-0.425***	-0.308***	-0.137*	-0.291***	-0.167**	-0.235***	-0.173
	(-8.198)	(-5.026)	(-4.596)	(-5.838)	(-4.680)	(-1.829)	(-4.226)	(-2.022)	(-3.378)	(-1.207)
GDP	0.199***	0.142***	0.169***	0.215***	0.170***	0.204***	0.161***	0.338***	0.200***	0.244***
	(5.295)	(3.708)	(4.647)	(5.543)	(4.641)	(4.825)	(4.198)	(5.919)	(5.199)	(3.116)
Number of convertible issue	0.077*	0.171***	0.198***	0.170***	0.189***	0.229***	0.213***	-0.050	0.175***	0.118
	(1.802)	(4.066)	(5.163)	(4.202)	(4.955)	(5.257)	(5.224)	(-0.796)	(4.428)	(1.351)
S&P rated bond dummy	-0.163*	-0.151*	-0.198**	-0.066	-0.189**	-0.330***	-0.307***	0.047	-0.210**	-0.121
	(1.950)	(-1.724)	(-2.452)	(-0.749)	(-2.348)	(-3.618)	(-3.410)	(0.466)	(-2.519)	(-0.720)
Conversion premium	0.000									-0.005*
	(0.040)									(-1.753)
DELTA		0.726***								0.368**
		(10.400)								(2.192)
First issue			0.057							0.137
			(1.261)							(1.259)
Years-to-call-protection				0.039***						0.050*
				(3.058)						(1.695)
Multiple tranches dummy					0.353***					0.380
					(3.896)					(1.295)
Yield						0.016**				0.035*
						(2.254)				(1.795)
Coupon							0.036***			0.071**
							(3.222)			(2.141)
Gross spread								-0.049		-0.201***
								(-1.420)		(-2.805)
TCOST									-0.000	-
									(-0.096)	
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm clusters	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.226	0.235	0.197	0.197	0.199	0.204	0.204	0.233	0.187	0.307
Observations	3,919	5,488	6,073	5,014	6,073	4,732	5,648	3,013	5,534	1,021

Notes: the detailed definition of variables can be obtained at Appendix A. ***, ** and * indicate statistically significant at 1%, 5% and 10%, respectively.

Table 3.10: Economies of scale and domestic and regional bookrunner selection

Panel A: Probit regression analysis of choosing a domestic bookrunner.

Model	1	2	3	4	5	6	7	8	9
Intercept	-8.145***	-7.917***	-8.640***	-1.572***	-1.510***	-1.517***	-4.905***	-4.689***	-5.537***
	(-11.475)	(-11.309)	(-11.729)	(-4.215)	(-4.070)	(-3.670)	(-6.225)	(-6.019)	(-6.797)
Firm size	-0.120***	-0.125***	-0.134***	-0.093***	-0.096***	-0.104***	-0.099***	-0.103***	-0.113***
	(-6.215)	(-6.372)	(-6.640)	(-4.887)	(-5.058)	(-5.284)	(-5.168)	(-5.344)	(-5.673)
Financial leverage	-0.058	-0.052	-0.194	-0.110	-0.103	-0.210*	-0.083	-0.076	-0.196
	(-0.473)	(-0.421)	(-1.573)	(-0.921)	(-0.859)	(-1.737)	(-0.695)	(-0.634)	(-1.620)
Return on assets	-0.473***	-0.486***	-0.557***	-0.405***	-0.413***	-0.481***	-0.396***	-0.406***	-0.477***
	(-2.906)	(-2.968)	(-3.346)	(-2.671)	(-2.702)	(-3.049)	(-2.581)	(-2.629)	(-2.998)
Financial slack	0.054	0.076	0.094	0.087	0.099	0.121	0.045	0.062	0.077
	(0.619)	(0.851)	(1.015)	(1.037)	(1.171)	(1.387)	(0.533)	(0.731)	(0.882)
Stock run-up	-0.002***	-0.002***	-0.002***	-0.001***	-0.001***	-0.001***	-0.002***	-0.002***	-0.002***
	(-4.100)	(-4.093)	(-3.653)	(-3.097)	(-3.093)	(-2.708)	(-3.613)	(-3.594)	(-3.269)
Stock volatility	-0.002	-0.006	-0.024	-0.024	-0.026	-0.039**	-0.018	-0.021	-0.036*
	(-0.105)	(-0.305)	(-1.231)	(-1.326)	(-1.416)	(-2.033)	(-0.991)	(-1.135)	(-1.803)
Market run-up	-0.000	-0.000	0.000	0.001	0.001	0.002	0.001	0.001	0.001
	(-0.214)	(-0.190)	(0.040)	(0.934)	(0.972)	(1.059)	(0.907)	(0.953)	(1.059)
Market volatility	-0.391***	-0.365***	-0.311***	-0.308***	-0.290***	-0.251***	-0.306***	-0.283***	-0.241***
	(-5.557)	(-5.174)	(-4.253)	(-4.255)	(-4.016)	(-3.363)	(-4.302)	(-3.975)	(-3.276)
Relative issue size	-0.093**	-0.097**	-0.095**	-0.065**	-0.069**	-0.066**	-0.072**	-0.076**	-0.075**
	(-2.370)	(-2.450)	(-2.474)	(-2.006)	(-2.097)	(-2.036)	(-2.129)	(-2.226)	(-2.225)
Years-to-maturity(LN)	0.143***	0.122**	0.195***	0.231***	0.216***	0.289***	0.170***	0.152***	0.216***
	(2.904)	(2.482)	(3.787)	(4.772)	(4.490)	(5.723)	(3.393)	(3.044)	(4.131)
Credit enhancer	-1.348***	-1.326***	-1.316***	-1.345***	-1.330***	-1.319***	-1.357***	-1.339***	-1.330***
	(-2.755)	(-2.694)	(-2.595)	(-2.806)	(-2.761)	(-2.732)	(-2.783)	(-2.732)	(-2.670)
Call protection dummy	-0.892***	-0.880***	-0.546***	-0.687***	-0.677***	-0.442***	-0.726***	-0.713***	-0.446***
	(-10.065)	(-9.781)	(-5.728)	(-8.028)	(-7.858)	(-4.747)	(-8.257)	(-8.015)	(-4.711)
Public offering dummy	0.488***	0.483***	0.468***	0.551***	0.548***	0.523***	0.587***	0.583***	0.564***
	(8.871)	(8.763)	(8.390)	(9.741)	(9.687)	(9.132)	(10.199)	(10.120)	(9.655)
Number of bookrunner(s)	0.226***	0.221***	0.207***	0.307***	0.303***	0.294***	0.290***	0.286***	0.271***
	(5.001)	(4.930)	(4.618)	(5.894)	(5.894)	(5.731)	(5.680)	(5.669)	(5.395)

Table 3.10: (continued)

Panel A: Probit regression analysis of choosing a domestic bookrunner.

Model	1	2	3	4	5	6	7	8	9
Top3 or Top21	-0.173***	-0.166***	-0.165**	-0.205***	-0.201***	-0.199***	-0.222***	-0.217***	-0.217***
	(-2.784)	(-2.660)	(-2.571)	(-3.330)	(-3.252)	(-3.144)	(-3.561)	(-3.454)	(-3.358)
Scope	0.106***	0.104***	0.096***	0.078**	0.075**	0.072**	0.078***	0.075**	0.071**
	(3.618)	(3.548)	(3.228)	(2.563)	(2.486)	(2.345)	(2.589)	(2.503)	(2.319)
GDP	0.387***	0.382***	0.402***				0.155***	0.149***	0.186***
	(15.609)	(15.508)	(16.160)				(4.556)	(4.384)	(5.391)
Number of convertible issue				0.506***	0.505***	0.500***	0.385***	0.389***	0.355***
				(17.976)	(18.023)	(17.700)	(10.380)	(10.477)	(9.356)
S&P rated bond dummy	-0.201***			-0.102			-0.150*		
	(-2.585)			(-1.305)			(-1.891)		
S&P investment grade dummy		-0.019			0.055			0.037	
		(-0.194)			(0.536)			(0.360)	
S&P rating dummy			0.003			-0.001			0.001
			(0.637)			(-0.234)			(0.114)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm clusters	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.199	0.198	0.195	0.219	0.219	0.209	0.225	0.224	0.217
Observations	6,073	6,073	5,677	6,073	6,073	5,677	6,073	6,073	5,677

Notes: the detailed definition of variables can be obtained at Appendix A. ***, ** and * indicate statistically significant at 1%, 5% and 10%, respectively.

Table 3.10: (continued)

Panel B: Probit regression analysis of choosing a regional bookrunner.

Model	1	2	3	4	5	6	7	8	9
Intercept	-5.866***	-5.609***	-6.375***	-0.527	-0.448	-0.623	-4.210***	-3.934***	-4.916***
	(-8.018)	(-7.789)	(-8.489)	(-1.380)	(-1.179)	(-1.494)	(-5.087)	(-4.816)	(-5.782)
Firm size	-0.067***	-0.072***	-0.076***	-0.050***	-0.055***	-0.057***	-0.056***	-0.061***	-0.066***
	(-3.504)	(-3.746)	(-3.855)	(-2.638)	(-2.859)	(-2.935)	(-2.938)	(-3.169)	(-3.353)
Financial leverage	-0.326***	-0.321**	-0.423***	-0.350***	-0.345***	-0.423***	-0.329***	-0.324***	-0.418***
	(-2.615)	(-2.560)	(-3.404)	(-2.801)	(-2.750)	(-3.386)	(-2.648)	(-2.593)	(-3.363)
Return on assets	-0.895***	-0.918***	-0.875***	-0.865***	-0.882***	-0.846***	-0.851***	-0.870***	-0.835***
	(-4.545)	(-4.583)	(-4.427)	(-4.471)	(-4.491)	(-4.382)	(-4.413)	(-4.445)	(-4.306)
Financial slack	0.039	0.062	0.091	0.079	0.094	0.127	0.036	0.057	0.085
	(0.446)	(0.702)	(0.989)	(0.916)	(1.083)	(1.412)	(0.422)	(0.659)	(0.943)
Stock run-up	-0.002***	-0.002***	-0.002***	-0.001***	-0.001***	-0.001***	-0.002***	-0.002***	-0.002***
	(-3.697)	(-3.679)	(-3.319)	(-2.939)	(-2.928)	(-2.589)	(-3.489)	(-3.461)	(-3.170)
Stock volatility	0.013	0.009	-0.008	0.001	-0.002	-0.015	0.007	0.003	-0.012
	(0.709)	(0.479)	(-0.449)	(0.063)	(-0.085)	(-0.834)	(0.364)	(0.154)	(-0.664)
Market run-up	-0.002	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(-1.208)	(-1.186)	(-0.971)	(-0.568)	(-0.539)	(-0.443)	(-0.628)	(-0.588)	(-0.484)
Market volatility	-0.552***	-0.522***	-0.475***	-0.527***	-0.504***	-0.470***	-0.517***	-0.489***	-0.450***
	(-7.669)	(-7.208)	(-6.373)	(-7.211)	(-6.879)	(-6.264)	(-7.180)	(-6.751)	(-6.057)
Relative issue size	-0.085**	-0.089**	-0.086**	-0.066**	-0.071**	-0.067**	-0.074**	-0.079**	-0.076**
	(-2.222)	(-2.324)	(-2.330)	(-1.975)	(-2.075)	(-2.028)	(-2.089)	(-2.195)	(-2.201)
Years-to-maturity(LN)	0.244***	0.220***	0.289***	0.326***	0.306***	0.379***	0.261***	0.238***	0.302***
	(4.738)	(4.256)	(5.404)	(6.507)	(6.141)	(7.276)	(5.021)	(4.590)	(5.601)
Credit enhancer	-0.804**	-0.769**	-0.748**	-0.774**	-0.746**	-0.741**	-0.777**	-0.744**	-0.731**
	(-2.451)	(-2.321)	(-2.260)	(-2.287)	(-2.185)	(-2.212)	(-2.266)	(-2.142)	(-2.123)
Call protection dummy	-0.703***	-0.688***	-0.391***	-0.576***	-0.563***	-0.343***	-0.621***	-0.604***	-0.346***
	(-7.765)	(-7.454)	(-3.978)	(-6.504)	(-6.273)	(-3.560)	(-6.808)	(-6.499)	(-3.533)
Public offering dummy	0.561***	0.554***	0.527***	0.564***	0.561***	0.525***	0.603***	0.597***	0.564***
	(9.989)	(9.858)	(9.305)	(9.998)	(9.934)	(9.197)	(10.519)	(10.419)	(9.758)
Number of bookrunner(s)	0.341***	0.333***	0.321***	0.393***	0.386***	0.377***	0.375***	0.368***	0.352***
	(5.947)	(5.885)	(5.614)	(6.410)	(6.387)	(6.200)	(6.185)	(6.150)	(5.847)

Table 3.10: (continued)

Panel B: Probit regression analysis of choosing a regional bookrunner.									
Model	1	2	3	4	5	6	7	8	9
Top3 or Top21	-0.305***	-0.297***	-0.297***	-0.301***	-0.296***	-0.292***	-0.322***	-0.316***	-0.314***
	(-4.585)	(-4.450)	(-4.343)	(-4.599)	(-4.515)	(-4.364)	(-4.849)	(-4.731)	(-4.594)
Scope	0.061**	0.058**	0.050*	0.046	0.044	0.041	0.045	0.043	0.037
	(2.060)	(1.986)	(1.686)	(1.548)	(1.464)	(1.344)	(1.526)	(1.435)	(1.252)
GDP	0.287***	0.280***	0.297***				0.171***	0.162***	0.198***
	(11.243)	(11.103)	(11.747)				(4.695)	(4.488)	(5.416)
Number of convertible issue				0.320***	0.318***	0.313***	0.187***	0.191***	0.158***
				(11.949)	(11.977)	(11.768)	(4.903)	(5.042)	(4.107)
S&P rated bond dummy	-0.226***			-0.148*			-0.201**		
	(-2.823)			(-1.865)			(-2.496)		
S&P investment grade dummy		-0.013			0.031			0.011	
		(-0.124)			(0.294)			(0.107)	
S&P rating dummy			0.006			0.002			0.005
			(1.062)			(0.448)			(0.832)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm clusters	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.191	0.189	0.183	0.190	0.190	0.179	0.197	0.196	0.188
Observations	6,073	6,073	5,677	6,073	6,073	5,677	6,073	6,073	5,677

Notes: the detailed definition of variables can be obtained at Appendix A. ***, ** and * indicate statistically significant at 1%, 5% and 10%, respectively.

Table 3.11: Determinants of reputable bookrunner selection

Panel A: Probit regression analysis of choosing a reputable bookrunner with respect to domestic bookrunner selection.

Model	1	2	3	4	5	6	7	8	9
Intercept	-10.255***	-9.994***	-10.124***	-6.577***	-6.534***	-6.881***	-8.882***	-8.606***	-8.394***
	(-15.599)	(-15.458)	(-14.373)	(-18.459)	(-18.473)	(-16.908)	(-12.281)	(-12.078)	(-10.724)
Firm size	0.200***	0.200***	0.204***	0.212***	0.212***	0.218***	0.207***	0.207***	0.213***
	(10.757)	(10.712)	(10.459)	(11.482)	(11.433)	(11.273)	(11.138)	(11.106)	(10.946)
Financial leverage	-0.850***	-0.862***	-0.840***	-0.883***	-0.890***	-0.837***	-0.862***	-0.873***	-0.836***
	(-6.773)	(-6.879)	(-6.419)	(-6.949)	(-7.023)	(-6.357)	(-6.810)	(-6.907)	(-6.350)
Return on assets	0.245*	0.218	0.205	0.240*	0.223	0.211	0.256*	0.232	0.219
	(1.647)	(1.463)	(1.340)	(1.658)	(1.536)	(1.416)	(1.742)	(1.580)	(1.454)
Financial slack	0.644***	0.664***	0.652***	0.663***	0.675***	0.648***	0.633***	0.650***	0.634***
	(5.371)	(5.469)	(5.391)	(5.476)	(5.537)	(5.445)	(5.326)	(5.417)	(5.352)
Stock run-up	0.001*	0.001*	0.001*	0.001**	0.001**	0.001*	0.001**	0.001**	0.001*
	(1.939)	(1.945)	(1.649)	(2.407)	(2.380)	(1.928)	(2.024)	(2.031)	(1.714)
Stock volatility	-0.071***	-0.078***	-0.075***	-0.080***	-0.084***	-0.077***	-0.077***	-0.083***	-0.079***
	(-3.838)	(-4.141)	(-3.868)	(-4.261)	(-4.480)	(-4.031)	(-4.123)	(-4.412)	(-4.064)
Market run-up	-0.001	-0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001
	(-0.395)	(-0.356)	(0.212)	(0.182)	(0.215)	(0.875)	(0.110)	(0.159)	(0.826)
Market volatility	0.235***	0.266***	0.219***	0.267***	0.289***	0.240***	0.268***	0.296***	0.248***
	(3.343)	(3.822)	(3.056)	(3.743)	(4.103)	(3.315)	(3.786)	(4.237)	(3.451)
Relative issue size	0.064	0.059	0.064	0.092**	0.088*	0.092**	0.080*	0.076*	0.083*
	(1.474)	(1.404)	(1.479)	(1.961)	(1.917)	(1.965)	(1.763)	(1.716)	(1.825)
Years-to-maturity(LN)	0.131**	0.096*	0.105**	0.207***	0.180***	0.161***	0.158***	0.127**	0.132**
	(2.479)	(1.885)	(1.963)	(3.931)	(3.588)	(3.052)	(2.926)	(2.447)	(2.406)
Credit enhancer	-	-	-	-	-	-	-	-	-
Call protection dummy	0.754***	0.786***	0.713***	0.837***	0.857***	0.729***	0.795***	0.825***	0.726***
	(11.731)	(12.561)	(10.084)	(13.018)	(13.638)	(10.324)	(12.302)	(13.104)	(10.237)
Public offering dummy	0.058	0.049	0.065	0.076	0.072	0.107*	0.103*	0.095*	0.121**
	(1.076)	(0.894)	(1.161)	(1.395)	(1.318)	(1.890)	(1.883)	(1.738)	(2.148)
Number of bookrunner(s)	0.524***	0.523***	0.576***	0.576***	0.575***	0.640***	0.556***	0.556***	0.623***
	(7.955)	(7.897)	(8.077)	(8.614)	(8.573)	(9.015)	(8.360)	(8.322)	(8.754)

Table 3.11: (continued)

Panel A: Probit regression analysis of choosing a reputable bookrunner with respect to domestic bookrunner selection.

Model	1	2	3	4	5	6	7	8	9
Scope	0.474***	0.476***	0.494***	0.457***	0.458***	0.479***	0.459***	0.461***	0.479***
	(12.508)	(12.562)	(12.346)	(12.073)	(12.112)	(12.030)	(12.149)	(12.184)	(12.023)
Domestic bookrunner	-0.098*	-0.088	-0.084	-0.137**	-0.133**	-0.131**	-0.153**	-0.145**	-0.143**
	(-1.678)	(-1.513)	(-1.413)	(-2.303)	(-2.230)	(-2.180)	(-2.540)	(-2.422)	(-2.354)
GDP	0.207***	0.199***	0.191***				0.110***	0.099***	0.072**
	(9.185)	(8.921)	(8.144)				(3.615)	(3.302)	(2.204)
Number of convertible issue				0.254***	0.252***	0.255***	0.168***	0.173***	0.199***
				(9.509)	(9.448)	(9.416)	(4.695)	(4.835)	(5.355)
S&P rated bond dummy	-0.228***			-0.159**			-0.205***		
	(-2.905)			(-2.042)			(-2.605)		
S&P investment grade dummy		-0.131			-0.099			-0.117	
		(-1.148)			(-0.862)			(-1.018)	
S&P rating dummy			0.014**			0.012*			0.013**
			(2.247)			(1.953)			(2.110)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm clusters	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.346	0.345	0.326	0.347	0.347	0.331	0.349	0.349	0.332
Observations	6,063	6,063	5,667	6,063	6,063	5,667	6,063	6,063	5,667

Table 3.11: (continued)

Panel B: Probit regression analysis of choosing a reputable bookrunner with respect to regional bookrunner selection.

Model	1	2	3	4	5	6	7	8	9
Intercept	-10.374***	-10.092***	-10.282***	-6.497***	-6.453***	-6.814***	-8.963***	-8.660***	-8.498***
	(-15.984)	(-15.804)	(-14.786)	(-18.185)	(-18.184)	(-16.726)	(-12.419)	(-12.176)	(-10.878)
Firm size	0.199***	0.198***	0.202***	0.213***	0.212***	0.218***	0.207***	0.207***	0.213***
	(10.753)	(10.702)	(10.426)	(11.585)	(11.536)	(11.372)	(11.237)	(11.203)	(11.036)
Financial leverage	-0.864***	-0.876***	-0.860***	-0.899***	-0.906***	-0.855***	-0.877***	-0.888***	-0.856***
	(-6.855)	(-6.965)	(-6.530)	(-7.044)	(-7.120)	(-6.465)	(-6.905)	(-7.005)	(-6.463)
Return on assets	0.212	0.183	0.167	0.211	0.193	0.178	0.225	0.200	0.185
	(1.417)	(1.225)	(1.085)	(1.447)	(1.321)	(1.191)	(1.525)	(1.357)	(1.225)
Financial slack	0.641***	0.663***	0.653***	0.662***	0.675***	0.650***	0.630***	0.649***	0.634***
	(5.355)	(5.459)	(5.372)	(5.471)	(5.533)	(5.441)	(5.312)	(5.407)	(5.338)
Stock run-up	0.001*	0.001*	0.001	0.001**	0.001**	0.001*	0.001*	0.001*	0.001
	(1.830)	(1.838)	(1.541)	(2.354)	(2.327)	(1.872)	(1.946)	(1.956)	(1.635)
Stock volatility	-0.071***	-0.078***	-0.076***	-0.079***	-0.084***	-0.078***	-0.077***	-0.083***	-0.079***
	(-3.828)	(-4.160)	(-3.942)	(-4.234)	(-4.471)	(-4.048)	(-4.085)	(-4.399)	(-4.087)
Market run-up	-0.001	-0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.001
	(-0.468)	(-0.421)	(0.169)	(0.097)	(0.135)	(0.815)	(0.015)	(0.072)	(0.756)
Market volatility	0.205***	0.239***	0.193***	0.239***	0.263***	0.215***	0.239***	0.270***	0.223***
	(2.903)	(3.421)	(2.690)	(3.345)	(3.729)	(2.962)	(3.366)	(3.851)	(3.093)
Relative issue size	0.059	0.053	0.058	0.090*	0.086*	0.089*	0.077*	0.073*	0.080*
	(1.401)	(1.319)	(1.398)	(1.935)	(1.884)	(1.937)	(1.714)	(1.660)	(1.776)
Years-to-maturity(LN)	0.142***	0.104**	0.119**	0.220***	0.190***	0.175***	0.169***	0.135***	0.144***
	(2.688)	(2.039)	(2.223)	(4.156)	(3.782)	(3.315)	(3.116)	(2.594)	(2.622)
Credit enhancer	-	-	-	-	-	-	-	-	-
Call protection dummy	0.733***	0.768***	0.703***	0.828***	0.849***	0.725***	0.782***	0.815***	0.722***
	(11.454)	(12.311)	(9.912)	(12.901)	(13.539)	(10.258)	(12.130)	(12.963)	(10.159)
Public offering dummy	0.083	0.072	0.087	0.092*	0.087	0.121**	0.122**	0.113**	0.137**
	(1.513)	(1.308)	(1.548)	(1.667)	(1.582)	(2.108)	(2.201)	(2.038)	(2.402)
Number of bookrunner(s)	0.537***	0.535***	0.589***	0.586***	0.585***	0.650***	0.566***	0.565***	0.632***
	(8.042)	(7.978)	(8.173)	(8.658)	(8.616)	(9.058)	(8.401)	(8.360)	(8.784)

Table 3.11: (continued)

Panel B: Probit regression analysis of choosing a reputable bookrunner with respect to regional bookrunner selection.									
Model	1	2	3	4	5	6	7	8	9
Scope	0.473***	0.476***	0.493***	0.455***	0.457***	0.477***	0.458***	0.460***	0.477***
	(12.475)	(12.537)	(12.302)	(12.019)	(12.061)	(11.970)	(12.093)	(12.131)	(11.956)
Regional bookrunner	-0.246***	-0.233***	-0.232***	-0.247***	-0.241***	-0.237***	-0.269***	-0.259***	-0.254***
	(-3.912)	(-3.728)	(-3.654)	(-3.914)	(-3.827)	(-3.728)	(-4.240)	(-4.090)	(-3.966)
GDP	0.217***	0.208***	0.201***				0.118***	0.106***	0.080**
	(9.907)	(9.609)	(8.875)				(3.873)	(3.524)	(2.454)
Number of convertible issue				0.256***	0.253***	0.256***	0.163***	0.169***	0.193***
				(10.022)	(9.961)	(9.902)	(4.642)	(4.813)	(5.281)
S&P rated bond dummy	-0.246***			-0.170**			-0.221***		
	(-3.158)			(-2.189)			(-2.815)		
S&P investment grade dummy		-0.141			-0.105			-0.125	
		(-1.240)			(-0.913)			(-1.088)	
S&P rating dummy			0.015**			0.013**			0.014**
			(2.390)			(2.035)			(2.221)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm clusters	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.348	0.347	0.328	0.349	0.349	0.333	0.352	0.351	0.334
Observations	6,063	6,063	5,667	6,063	6,063	5,667	6,063	6,063	5,667

Notes: the detailed definition of variables can be obtained at Appendix A. ***, ** and * indicate statistically significant at 1%, 5% and 10%, respectively.

4 The outcomes of geographic proximate and reputable bookrunner selection

4.1 Introduction

In the convertible bond market, the existence of asymmetric information between potential investors and corporate issuers is unavoidable and may lead to potential market failure. This is due to either self-interested insiders being reluctant to disseminate credible information of firm value or because investors fail to acquire reliable information of firm future earnings prospects (Akerlof, 1970; Myers and Majluf, 1984). Booth and Smith (1986) develop a theory and suggest that reputation of bookrunner serves as a reliable bonding mechanism for investors to get correct information about firm value. Chemmanur and Fulghieri (1994) further develop a reputation acquisition model and argue that reputation of investment bank could certify the risky issue prices and ameliorate asymmetric information in exchange for higher underwriting fees. A seminal paper by Fang (2005) argues that investment bank reputation provides an important certification to firms that need capital from potential investors. In particular, reputable banks provide higher certification quality and are able to obtain superior bond pricing for their clients, but charge higher fees to compensate for putting their reputation at stake in the certification process.

Alternatively, another strand of literature suggest that the distance between corporate issuers and bookrunners is more important for investors to obtain reliable information of the value of the firm. Stein (2002) provides a theoretical rationale that distance within an organizational structure of the banks is important for line managers particularly in decentralized and less hierarchical banks to more effectively collect soft information in small-business lending because they can act on the information they produce. In line with the Stein (2002)ôs explanation, Berger et al. (2005) show that small banks have more comparative advantage than large banks in gathering and acting on the soft information through lending relationship. A more recent literature highlights that corporate firms could benefit from underwriters with soft information advantages built on geographical proximity to provide more comparative advantage in obtaining a better outcome of underwriting for their clients and being able to charge lower fees (Butler, 2008; Lau and Yu, 2010). Clearly, the literature on financial intermediary highlight that reputation and distance of the bookrunner are the two main concerns for corporate issuers to consider when obtaining a certification for issuing convertible bond.

This study aims to bridge these two literatures together and examines the outcomes of both reputable bookrunner and local bookrunner simultaneously on the price and quality of underwriting services in global convertible bond offerings. A number literature have advocated that convertible bond offerings have distinctive features that allow corporate issuers to mitigate agency costs, alleviate adverse selection costs and to cater the demands of investors in comparison to equity and straight debt financing. This is an important issue for corporate issuers who face costly asymmetric information when choosing the most suitable bookrunner to provide better pricing terms, analyst coverage, market making and certification in underwriting convertible bonds.

In this chapter, I address three specific research questions on the bookrunner performance. First, do reputable bookrunners offer a better stock price reaction, lower underwriting fees and lower offering yields, and does this affect vary by economic region? Second, do geographically proximate bookrunners offer better stock price reaction, higher underwriting fees and lower offering yields, and does this affect vary by region? Third, what are the factors that affect the variations of stock price reactions, underwriting fees and offering yields?

To account for the self-selection bias of underwriter choice, this study uses switching regression models to examine the outcome of bookrunner selection on the stock price reactions, underwriting fees and offering yields. For robustness purposes, a double selection model is also employed to provide more insights about the impact of jointly-determined bookrunner selection.

Overall, I find that domestic bookrunners obtain a more positive stock price reaction and lower fees. Regional bookrunners deliver their clients with positive stock price reaction and higher bond yields. While, reputable bookrunners offer fees and yields reduction in underwriting contracts and a more positive market reaction. This suggests that reputable boookrunners offer better quality of price reactions with lower bond fees and yields for their self-selected clients. This is in sharp contrast to Fang (2005) who finds that reputable banks charge higher fees for better pricing of lower yields in nonconvertible bond offerings. Lower fees may be the marketing strategy adopted by reputable underwriters to obtain underwriting contracts. This is because higher fees may not guarantee them to win an underwriting business from the issuing firms as they are mostly risky and unrated and unwilling to hire costly bookrunners in underwriting. Another reason may be due to the entry of commercial bank in underwriting market and bank consolidation drives reputable underwriters to provide lower underwriting fees (Andres, Betzer, and Limbach, 2014). Additionally, Lewis, Rogalski, and Seward (1999) explain that a risky firm prefers to use convertible debt because it may mitigate the asymmetric information problem.

Kim and Weisbach (2008) and Henderson, Jegadeesh, and Weisbach (2006) highlight that the firms in distinct geographical regions rely on different alternative sources of capital in making security issuance decisions. In addition, Dutordoir et al. (2016) document that the stock prices of convertible bond issuers react differently at issue between U.S., Japan and other countries. I address the question on whether different structures of bookrunner selection matter for price and quality of underwriting services in different geographical regions. Specifically, I find that the negative coefficient suggests that domestic and regional bookrunners in the North America region obtain negative market reaction, but with higher yields. On the other hand, reputable bookrunners in the same region offer fee and yield reduction but deliver negative price reactions. The negative market reaction could be affected by the short-selling activities by convertible bond arbitrageurs and hedge fund managers. De Jong et al. (2012) highlight that short-selling events create a downward stock price pressure surrounding the announcements of convertible bond offerings.

In the case of Japan, I find that proximate bookrunners provide their clients with higher fees and higher yields. This finding is inconsistent with Lau and Yu (2010) who find that domestic and regional bookrunners charge lower total cost. This may suggest the presence of market power in which Japanese bookrunners exploit the issuing firms with higher charges. On the other hand, I find that reputable bookrunner offer fee discount to their clients. In the similar vein, Daniels and Vijayakumar (2007) and Livingston and Miller (2000) document that reputable bookrunners certify value of debt with lower underwriting fees.

In the European region, I find that local bookrunners obtain better outcome with positive stock price reaction, lower fees and lower yields. Meanwhile, reputable bookrunners perform poorly with negative market reaction. In Asia Pacific region, I show that domestic and regional bookrunners deliver their clients with positive CARs. While, reputable bookrunners obtain negative stock price reaction with lower fees. The negative market reaction is not surprising as Lau and Yu (2010) provide a plausible explanation that underwriting banks in emerging markets may lack of the placing capacity of bond issuances and this could offset their superior information and reputational advantages in underwriting.

Additionally, I provide further findings that the outcomes of bookrunner selection differ significantly across different legal origins of convertible bond issuers. More specifically, I find that reputable bookrunners in English origin sample offer better underwriting performance in comparison to domestic and regional bookrunners in obtaining lower underwriting fess and lower offering yields at-issue for their clients. However, it is pointed out that the short-selling activities by hedge fund managers and convertible bond arbitrageurs could be a potential explanation to why both reputable and geographic proximate bookrunners obtain negative stock price reactions. I find that bookrunners in French origin countries have no significant impact in delivering a better underwriting performance. This suggests that weak investor rights, creditor rights and the least developed capital markets in French countries as ruled out by La Porta et al. (1997) and Djankov, McLiesh, and Shleifer (2007) could be the reasons of non-performing bookrunners in French origin countries. In German legal origin sample, I find that reputable bookrunners deliver better underwriting outcome of lower fees and yields at-issue in comparison to bookrunners with geographic proximity advantage.

Taken together, this study shows that the outcome of bookrunner selection differ depending on the issuing firm region. I further highlight that the condition of the convertible market, methods and stated purpose of convertible bond offerings, sources of available bookrunners, legal environment and country-specific factors could be the possible explanations to why bookrunners perform differently in different regions. Reputable banks have gained reputation through extensive underwriting business in North America and Japan since early 1980s. While, underwriters in European and Asia Pacific regions have just started their underwriting business in late 1990s and therefore may not be able to offer superior quality underwriting due to a smaller market size of convertible bond underwriting. Additionally, Dutordoir et al. (2016) and Abhyankar and Dunning (1999) show that the different methods of issue and stated purpose of convertible bond offerings may produce different impact on the market reaction. I find that convertible bond issuers in U.S. and Japan regions in comparison to other regions have better access to a wide range of active bookrunners in providing underwriting services. Moreover, Lau and Yu (2010) find that issuers in a legal system providing investor protection suffer weaker cost reduction effect. I also highlight that the outcome of bookrunner could also be affected by country specific factors. For instance, I find that bookrunners in North America deliver negative stock price reaction because of the legalized short-selling activities by arbitrageurs and hedge fund managers could be a possible explanation to the different outcome of bookrunner selection (Choi et al. 2009; De Jong et al. 2012).

This study contributes to provide analysis on the outcomes of geographic proximate and reputable bookrunners simultaneously. This has important implication to corporate treasurers as they could evaluate the performance of two different types of bookrunners together on the stock price reaction, fees and yields. This study also contributes to show that the outcome of bookrunner selection differ based on the issuers domiciled region. More specifically, this study finds that geographic proximate bookrunners offer better underwriting outcome than reputable bookrunners in European and Asia Pacific regions. On the other hand, this study finds that reputable bookrunners deliver better underwriting outcome services to issuing firms in North America and Japan regions. This has important policy implications for convertible bond issuers to wisely hire the bookrunners that could offer superior quality of underwriting services.

The rest of the chapter is organized as follows. Section 4.1 discusses the introduction. Section 4.2 describes related literature, Section 4.3 presents the data and sample selection. In Section 4.4, I present empirical methods. In Section 4.5, I provide empirical findings. Section 4.6 concludes the chapter.

4.2 Related literature

4.2.1 Theoretical framework

The theoretical rationale explaining the relationship between reputation, product quality, and price was first introduced by Klein and Leffler, (1981) and extended by Allen (1984), Rogerson (1983), and Shapiro (1983) to reflect the complexities of product markets. Based on the product quality models, a premium price is introduced by sellers to compensate the costs for building and retaining firm reputation serves a reliable signal to assure customers that firm manufactures superior quality product in the markets. This is because self-interested sellers may suffer long-term losses if they opt for short-run gain by reducing their product quality as customers could judge the product quality after the purchase.

In financial markets, the existence of informational asymmetry between issuers and potential investors may cause potential market failure. The presence of asymmetric information is either generally due to self-interested insiders who are reluctant disseminate credible information about firm value or investors fail to obtain a reliable information (see Myers and Majluf, 1984; Akerlof, 1970). Building on reputational signalling of product quality by Klein and Leffler (1981), Booth and Smith (1986) develop a theory that the certification provided by the underwriters is capable to certify the risky issue price and ameliorate asymmetric information problems between shareholders and the prospective subscribers in the financial markets transactions. As a result, reputation of the underwriters serves as a bonding mechanism for investors to infer credible information about the value of the issued securities. Chemmanur and Fulghieri, (1994) develop a reputation acquisition model in which a reputable investment bank serves as an effective financial intermediary in producing credible information to mitigate asymmetric information between issuers and investors as reputation is acquired based on stricter evaluation standards. The implications of their model shows that reputable investment banks reduce the impact of information asymmetry, underwrite less risky client firms, charge higher underwriting fees, bookmanage larger underwritten proceeds and attract more issuers to use their high quality underwriting services.

Another theoretical rationale highlight that distance matters for information production was first pioneered by Stein (2002). His model highlights that line managers in less hierarchical banks are motivated to produce soft information as they can act on the information to make important decision in small-business lending. Similarly, Berger et al. (2005) highlight that small banks have better advantage in comparison to large banks as they can produce soft information easily via lending relationship. Hauswald and Marquez (2006) show that distance is important for banks to make efficient lending decisions by effectively screening and collecting precise information of the borrowers. Mian (2006) finds that foreign banks suffer cultural and geographical distance disadvantage to provide lending business to informationally difficult firms.

In securities underwriting market, Corwin and Schultz (2005) argue that local underwriters are more likely to be hired because they can easily place shares to local investors. Loughran (2008) suggests that rural firms have limited access to reputable underwriters because cost of information production for distant firms are more expensive and thereby are forced to choose local underwriters. Butler (2008) argues that local banks have better access to private information of the issuing firms and more likely to underwrite risky and unrated bonds. Lau and Yu (2010) find that domestic and regional underwriters have better access to soft information of the issuers in underwriting risky and unrated international corporate bond. Lau and Yu (2010) highlight that proximate banks can easily collect private information of issuers by regularly meeting with senior management, observing daily events on the local news and making frequent site visits.

4.2.2 Empirical literature of bookrunners on the price and quality of the underwritten bond offerings

One strand of literature focuses on the impact of underwriter reputation on the underwritten bonds. Livingston and Miller (2000) document that prestigious underwriters certify the value of a debt issue to investors and achieve lower underwriting fees and lower offering yields. After controlling for endogeneity in issuer-underwriter matching, by contrast, Fang (2005) finds that reputable banks obtain lower yields and charge higher fees for firms domiciled in the U.S. issuing nonconvertible bonds between 1991 and 2000. She suggests that economic rents earned on reputation is necessary for investment banks to maintain their reputation in providing continued certification roles for corporate issuers.

Narayanan, Rangan, and Rangan (2007) find that reputable lending banks deliver superior certification benefits to private debt issuers with pricing benefit outweighs the costly underwriting fees. Using a large sample of 10,239 tax-exempt municipal bonds, Daniels and Vijayakumar (2007) find that reputable underwriters provide a certificatory role for the lead managed municipal bond issues with lower borrowing costs, lower yields and lower underwriting gross spreads. On the other hand, McCahery and Schwienbacher (2010) find that certification channel in private market works differently from that of public market that top tier arrangers charge higher spreads but retain larger fractions of underwritten syndicated loans. Lou and Vasvari (2013) provide evidence that reputable underwriters provide a certification role to corporate bond issuers to obtain lower bond yields and manage bond issues of larger size.

Another growing strand of literature emphasizes on the impact of underwriter geographic proximity on the price and quality of underwritten bonds. In particular, Butler (2008) argues that that investment banks with geographical proximity advantage have comparative advantage to evaluate soft information and place complex bond issues with lower fees and lower yields for municipal bonds issuers. Lau and Yu (2010) examine the international bond offerings from 31 countries. They find that geographically proximate banks have better access to private information about issuing companies and offer cost reduction with lower gross spread and lower bond yields. The cost reduction is weaker in countries that provide strong investor protection whereby issuers are subject to strict disclosure requirements.

Overall, these studies reveal that the bookrunners with higher reputation and geographic proximity advantages play an important role in providing certification to the value of bond offerings. However, to the best of my knowledge there is no current paper that examines the relations between underwriter reputation and proximity and both the price and quality of underwriting services in convertible bond offerings.

4.2.3 Determinants of underwriting fees

There are a number of papers examining the determinants of underwriting fees. Underwriting fees are measured as the gross spread incurred on the issuer to pay the underwriter for issuing convertible bonds. For example, Chae (2005) highlight that larger and profitable firms are regarded as less risky issuers as they are followed by a number of financial analysts and thus more likely to pay lower underwriting fees to the bookrunners. Fang (2005) finds firms with higher financial leverage are charged with higher fees because underwriter is putting their reputation at greater risk. Chang et al. (2004) argue that firms with higher stock volatility may experience higher default risk and thereby are expected to pay higher underwriting fees. Similarly, Fang (2005) finds that banksô fee is positively associated with stock return volatility. Firms with greater stock run-up could convey that firms with superior stock performance (Viswanath, 1993) or issuers with associated higher uncertainty of equity related financing cost (Loncarski, Ter Horst, and Veld, 2008). Thus, the expected impact of stock run-up on underwriting fees is not clear. Firms with higher financial slack prior to convertible bonds offerings could be driven by overvaluation needs and therefore will be charged for higher fees by underwriters because they are more risky (Bayless and Chaplinsky, 1996).

Lee et al. (1996) highlight that firm with larger size of offerings may have economies of scale of paying lower fees. By contrast, Altinklic and Hansen (2000) argue that the presence of diseconomies of scale in underwriting fees where larger firms are charged with higher fees for issuing debt. Bonds with longer maturity are associated with greater interest rate risk (Livingston and Miller, 2000) and thus higher fees are expected. At one hand, bonds with call protection are considered a complex placement and hence higher underwriting fees are charged by bookrunners. On the other hand, Livingston and Zhou (2002) suggest that issuers may pay lower fees for bonds with call protection because it could alleviate the reinvestment risk. Fang (2005) argues that issuers issue riskier bonds pay higher underwriting fees due to higher default risk. According to Livingston and Zhou (2002) issuers using public offerings tend to have better information disclosed to investors and are expected to pay lower fees to their bookrunners. Issuers may pay higher fees to underwriters due to more efforts exert in marketing and bookbuilding.

Corwin and Schultz (2005) point out that syndicate size is positively related to underwriting fees as lead managers are unwilling to increase number of syndicate participation without increasing the fees. On the other hand, Corwin and Schultz (2005) argue that lead underwriters could impose potential costs on the issuers and limit the syndicate size for reasons to benefit themselves in obtaining substantial share allocation, diminishing competition for future underwriting business and reducing number of underwriters giving information to the issuers during the bookbuilding process.

4.2.4 Determinants of bond yields at-issue

Prior research has highlighted a number of factors that influence bond yields at-issue. Larger firm and those with higher profits are expected to pay lower yield because of their lower risk (Puri, 1996; Bhojraj and Sengupta, 2003). Firms with higher financial leverage face higher default risk and will be required to pay higher yields to their bondholders (Bhojraj and Sengupta, 2003). Firms with high stock price volatility pay higher yields due to higher default risk. At one hand, firms with higher stock run-up could indicate future expected cash flows of firm (Bhojraj and Sengupta, 2003). On the other hand, firms with superior stock performance could also be associated with higher risk (Loncarski, Ter Horst, and Veld, 2008). Thus, the expected sign of stock run-up subject to empirical testing. Duca et al. (2012) highlight that firms with higher financial slack prior to convertible bonds offerings may be driven by overvaluation needs and thus it is expected that issuers with higher financial slack are more likely to pay higher yields due to greater risk exposure.

Lee et al. (1996) find that firms with larger issue size have better economies of scale in underwriting and more public information and thus will pay lower yields to underwriters. Firms with longer bond maturity are expected to pay higher yields because of greater interest risk exposure (Livingston and Zhou, 2002; Bhojraj and Sengupta, 2003). Livingston and Zhou (2002) suggest that bonds with call protection could reduce the reinvestment risk of investors and make issuer pay lower yields. Issuers of publicly traded bonds have more information available to investors and therefore pay lower bond yields (Livingston and Zhou (2002). Fang (2005) suggests that bonds with better credit rating should lead to lower yields. Puri (1996) points out that larger bookrunner syndicates have better distribution abilities and power that may reduce bond yields at-issue.

4.3 Data and sample construction

In this study, I reuse the sample data of Chapter 2 of convertible bond offerings between January 1984 and December 2015 from the SDC Platinum Global New Issues Database. The detailed explanation of sample construction can be obtained in Chapter 2.

4.4 Empirical methods

The outcome of bookrunner selection can be estimated using OLS regression model as shown in the following form:

[illegible]

(4.1)

where □□ is a dependent variable of the outcomes of bookrunner selection on the CARs, underwriting fees and offering yields at-issue, □□ is a vector of firm, issue and market specific characteristics, $Bookrunner\ selection_i$ is a dummy variable equals to one if an issue is underwritten by a domestic bookrunner, regional bookrunner or reputable bookrunner, respectively and μ_i is the error term.

For the OLS estimates to be reliable, this setup implicitly requires that $Bookrunner\ selection_i$ be an exogenous variable in Equation (4.1). If $Bookrunner\ selection_i$ is endogenous, then Equation (4.1) cannot be consistently estimated by OLS. Heckman (1979) proposes a simple two-stage estimator to correct for this bias. In the first stage, the following equation is estimated by probit:

$$Bookrunner\ selection_i = Z_i'\delta + \varepsilon_i$$

(4.2)

where Z_i' is a vector of characteristics that affect the choice between a domestic bookrunner and a non-domestic bookrunner, a regional bookrunner and a non-regional bookrunner, and a reputable bookrunner and a non-reputable bookrunner. ε_i is the error term of the bookrunner selection equation. Given the binary measure of geographic proximity and reputation measure,

$$Bookrunner\ selection_i = 1\ if\ Z_i'\delta + \varepsilon_i > 0$$

$$and\ Bookrunner\ selection_i = 0\ if\ Z_i'\delta + \varepsilon_i \leq 0.$$

(4.3)

when μ_i and ε_i are correlated, OLS estimates in Equation (4.1) are biased. However, the estimates obtained in Equation (4.1) can be improved with the following model of two-stage estimation method discussed in Heckman (1979) and Maddala (1983).

$$y_i = X_i'\beta + \omega \frac{\phi(Z_i'\delta)}{\Phi(Z_i'\delta)} Bookrunner\ selection_i$$
$$+\omega \frac{-\phi(Z_i'\delta)}{1-\Phi(Z_i'\delta)}(1-Bookrunner\ selection) + \upsilon_i, \quad (4.4)$$

where $\phi(\cdot)$ is the density function and $\Phi(\cdot)$ is the cumulative distribution function of a standard normal. In this respect, Equation (4.4) can be consistently estimated by OLS. Moreover, the coefficient ω will determine the effect of bookrunner selection on the outcome of underwriting, y_i.

The above model can be further generalized to allow for any differences in the effect of firm, issue and market-specific characteristics on the outcome variables between the two groups of bookrunners. This form a new model known as switching regression model with endogenous switching by replacing Equation (4.4) with two equations:

$$y_{1i} = X_i'\beta_1 + \mu_{1i} \quad (4.5)$$

$$y_{2i} = X_i'\beta_2 + \mu_{2i}. \quad (4.6)$$

where Equation (4.5) is the outcome equation for the domestic, regional and reputable group, and Equation (4.6) is the outcome equation for the non-domestic, non-regional and non-reputable group but for the same deal. Of course, we only observe y_{1i} or y_{2i}, depending on the type of bookrunner used. Specifically, this yields the following equations.

$$y_i = y_{1i} \; if \; bookrunner\ selection_i = 1$$

$$\text{and } \; y_i = y_{2i} \; if \; Bookrunner\ selection_i = 0.$$

(4.7)

In this setting, endogeneity is modelled by allowing for the correlation between the residuals of the selection and outcome equations $\left(\varepsilon_i \; and \; \mu_{1i}\left(\mu_{2i}\right)\right)$. This indicates that the unobserved (for example, private information) on determinants of the bookrunner selection could affect the outcome variable of interest. The following covariance matrix is thus nondiagonal:

$$\operatorname{cov}\left(u_{1i}, u_{2i}, \varepsilon_i\right) = \begin{pmatrix} \sigma_{11} & \sigma_{12} & \sigma_{1\varepsilon} \\ \sigma_{21} & \sigma_{22} & \sigma_{2\varepsilon} \\ \sigma_{1\varepsilon} & \sigma_{2\varepsilon} & 1 \end{pmatrix}.$$

(4.8)

Since we only observe Equations (4.5) or (4.6) depending on the outcome of Equation (4.2), and never both, then the observed y_i is a conditional variable, and the error terms in Equations (4.5) and (4.6) have non-zero mean.

The Equation (4.5) is then augmented with an additional regressor $\frac{\phi\left(Z_i'\delta\right)}{\Phi\left(Z_i'\delta\right)}$, then the new residual μ_{1i} is adjusted for non-zero mean and the equation can be consistently estimated by OLS. Similarly, for Equation (4.6) this is $\frac{-\phi\left(Z_i'\delta\right)}{1-\Phi\left(Z_i'\delta\right)}$.

These additional regressors are known as inverse Mills ratios.

This model setup is a generalization of the classical Heckman (1979) two-stage procedure and appears in Lee (1978) in examining unionism and wages relation and in Dunbar (1995) in investigating the use of warrants for underwriter compensation. This model also appears in Puri (1996), Gande et al. (1997) and Gande, Puri, and Saunders (1999) in their studies of the impact of commercial banks' entry to the debt underwriting market. This model is also used by Fang (2005) to examine the impact of investment bank reputation on the price and quality of the underwritten non-convertible debts in U.S. Similarly, Golubov, Petmezas, and Travlos (2012) also employ this technique to examine the impact of top-tier advisors on the bidder CARs and advisory fees in M&As deals involving U.S. firms.

Since one can only observe a deal advised by a domestic bookrunner or a non-domestic bookrunner, a regional boorunner or a non-regional bookrunner and a reputable bookrunner or a non-reputable bookrunner, I address additional question of what would have been the outcome for the same deal if it would have been underwritten by an alternative bookrunner to infer the effect of bookrunner selection on outcome, [illegible]. This question can be answered by comparing the outcome between (domestic, regional and reputable) bookrunners and the potential outcome by (non-domestic, non-regional and non-reputable) bookrunners, respectively. Econometrically, the potential outcome can be estimated by evaluating [illegible] in the alternative outcome of bookrunner as shown in the following equation:

$$
\begin{aligned}
E\left[y_{2i} \middle| Bookrunner\ selection_i = 1\right] &= E\left[X_i'\beta_2 + u_{2i} \middle| Z_i'\delta + \varepsilon_i > 0\right] \\
&= E\left[X_i'\beta_2 + u_{2i} + \operatorname{cov}\left(u_{2i}, \varepsilon_i\right)\frac{\phi\left(Z_i'\delta\right)}{\Phi\left(Z_i'\delta\right)}\right].
\end{aligned}
\tag{4.9}
$$

To form a basis inference of the outcome of the underwritten deals by domestic, regional and reputable bookrunners, the difference between the actual and hypothetical outcome is then computed as follows:

$$E\left[y_{2i} \middle| Bookrunner\ selection_i = 1 \right] - y_{1i}. \tag{4.10}$$

The hypothetical value $E\left[y_{1i} \middle| Top - Tier_i = 0 \right]$ and the associated improvement are computed similarly for non-domestic, non-regional and non-reputable bookrunners.

For robustness purposes, this chapter also considers a double selection model to estimate Equation (4.2) using recursive biprobit to account for double selection of bookrunners. Introduced by Heckman (1978) and Maddala (1983), the recursive bivariate probit model represents an effective way to estimate joint probability of both reputable bookrunners and domestic and regional bookrunners selection in the presence of unobservables. Monfardini and Radice (2007) point out that simultaneous estimation is needed to get consistent estimates of the parameters of equations if the disturbances of both equations are correlated. Otherwise, two univariate probits can be separately estimated. Monfardini and Radice (2007) highlight that precise estimation of recursive probit model requires relatively larger sample due of loss of fully observed dependent variables following the correlation coefficient estimation.

Following Bradley et al. (2015) and Entorf (2012), the main purpose of this test is it serves as a control function to calculate two additional inverse Mills ratios to plug-in to Equation (4.5) by using $\phi\left(Z_i'\delta\right)\Phi\left(Z_i'\delta\right)^{-1}$ and Equation (4.6) by using $-\phi\left(Z_i'\delta\right)\left(1-\Phi\left(Z_i'\delta\right)\right)^{-1}$ in estimating the second stage regression of investigating the outcomes of double bookrunner selection. Similarly, these two additional inverse Mills ratios are added to Equation (4.9) to perform hypothetical analysis on the outcomes of two different groups of bookrunner selection. This model appears in Terrell (1993) in examining how individuals are chosen into the public and private sectors and to examine public-private sector wage differentials. Brown (2011) uses a double selection model that controls for selection into the labour and marriage markets in investigating the relationship between body mass index (BMI) and wages. In addition, Ma et al. (2018) use a similar method to examine the joint impacts of off-farm work participation and smartphone use captured by two additional inverse Mills ratios estimated by a recursive bivariate probit on household income of the rural China. However, there is little knowledge on the joint impacts of geographical proximity and reputation of bookrunner selection in affecting the outcome of underwritten deals in debt offerings. This is interesting as issuers need to consider and evaluate the outcome of two different types of bookrunners simultaneously. From this section, this study draws inferences based on the cross-sectional OLS and switching regression modelling. As for the further analysis of bookrunner selection by issuing firm region, I will use OLS to draw inferences and the switching regression estimation is for robustness purpose.

4.5 Empirical findings

4.5.1 Issuer-underwriter matching (first stage regressions)

In Table 4.1, I present first-stage probit regression analysis of Heckman (1979) on the determinants of domestic bookrunners, regional bookrunners and reputable bookrunners selection. The dummy variables of domestic bookrunners, regional bookrunners and reputable bookrunners are previously defined.

I also present recursive bivariate probit analysis on the determinants of first group of joint domestic and reputable bookrunners and second group of joint regional and reputable bookrunners. The results of this first stage analysis is useful for the subsequent analysis of switching regression models to examine the impact of domestic bookrunners, regional bookrunners, reputable bookrunners and joint bookrunner selection on issuer CARs, underwriting fees and offering yields.

The selection of potential determinants are identified from two different sources of literature on bookrunner geography (Lau and Yu, 2010; Butler, 2008) and bookrunner reputation (Carbó-Valverde et al.,2017; Fernando et al., 2015; Andres et al., 2014; Corwin and Schultz, 2005; Fang, 2005; Fernando et al., 2005). As a result, I include controls for firm size, financial leverage, return on assets, financial slack, stock run-up, stock volatility, market run-up, market volatility, relative issue size, years-to-maturity, credit enhancer, call protection dummy, public offering dummy and S&P rating dummy as potential determinants for domestic, regional and reputable bookrunners. I also include the number of bookrunner, reputable bookrunner dummy, GDP and number of convertible issue as instruments for both domestic and regional bookrunners estimators. I include scope as an instrumental variable for reputable bookrunner estimator. All these variables are defined in previous chapters.

Columns (1) and (2) in Table 4.1 show that domestic and regional bookrunners are more likely to underwrite unrated, longer maturity, smaller size of offering, and publicly offered convertible bonds. Consistently, Lau and Yu (2010) find that local banks have soft information and location advantage that allow them to better evaluate and underwrite risky and longer maturity straight non-equity-linked new international bonds. In addition, Butler (2008) finds that local banks have distance advantage have better assess to soft information of the issuers in underwriting risky and non-rated municipal bonds.

Domestic and regional bookrunners are more likely to invite other investment banks to join bookbuilding syndicate for convertible bonds. However, domestic and regional bookrunners are less likely to underwrite convertible bonds for firms with larger size, greater profitability, greater stock run-up and higher market volatility. This could be due to proximate banks may not have the placement capacity for more complex and larger size of convertible bond offerings in some countries.

Consistent to Lau and Yu (2010) but in the context of convertible bond offerings, I find that GDP and the number of convertible issues are two instrumental variables positively and significantly associated with domestic and regional bookrunners selection. This suggests that issuers in a country with higher GDP and established convertible market are more likely to hire underwriters with geographical proximity advantage.

In Column (3), I find that reputable bookrunners are more likely to gain underwriting contracts for firms with larger size, greater stock run-up, lower financial leverage, lower stock volatility and greater market volatility. Moreover, reputable bookrunners more likely to be chosen for larger issue size, longer maturity and convertible bonds with a call protection option. This is consistent to Carbó-Valverde et al. (2017) and Fang (2005) explanations that reputable underwriters have the capacity to place more complex designs of convertible bonds. Carbó-Valverde et al. (2017) and Fang (2005) find that reputable banks are more likely to place callable bonds. I also find that reputable bookrunners are less likely to provide underwriting services for publicly offered bonds but more likely to syndicate with other underwriters in bookbuilding. I show that coefficient of economies of scale is statistically significant and this suggests that reputable banks that have served the issuer in the 5-year prior in M&A, equity and bond issuance prior to the convertible bond issue with are more likely to gain underwriting contracts. This supports Fang (2005)ÿs explanation that reputable banks have extensive distributional network in providing underwriting services. Fang (2005) finds that economies of scale is positively associated with lead underwriter.

Proximate bookrunners and reputable bookrunners are likely to be jointly determined and therefore I present the robustness tests in Columns (4)-(7) using a recursive bivariate probit model. Overall, the results show consistent findings with individual probit models of the determinants of domestic, regional and reputable bookrunner selection.

4.5.2 Whole sample: Outcome of bookrunner selection on the CARs

The purpose of this section is to examine the stock price reaction on the domestic, regional and reputable bookrunner selections using OLS cross-sectional regression. For robustness purpose, I also provide further analysis of the empirical results using switching models in Section 4.6. Table 4.2 shows estimation results for the outcome of bookrunner selection on the CARs of convertible bond issuers using OLS cross-sectional regression analysis. Motivated by Fang, (2005), McCahery and Schwienbacher, (2010), Butler (2008) and Lau and Yu (2010), I include a number of firm-specific, issue-specific, market-specific and instrumental variables as potential determinants of issuersô CARs.

I find that the coefficients of domestic bookrunners in (Column 2) and regional bookrunners (Column 3) in Table 4.2 are insignificant. This suggests that bookrunners with geographic advantage do not deliver positive market reaction. Surprisingly, I find that reputable bookrunners in (Column 4) deliver negative stock price reaction. In Columns (5) and (6), I include both geographic and reputable bookrunners simultaneously. The results show that the coefficients of proximate booookrunners remain insignificant but coefficient of reputable bookrunners remain significantly negative at 1% level. However, the OLS results could be bias due to the presence of private information of investment banks.

I find that the CARs of convertible bond issuers are negatively associated with firm size, financial slack and stock run-up. This suggests that smaller issuers gain better stock price reaction because they highly value convertible bond as the best source of alternative financing (Brennan and Schwartz, 1988; De Jong et al., 2012). This is because it is a smaller firm is more likely to experience default risk for using costly straight debt and risky equity financing. Firm with high pre-issue stock run-up could be perceived as likely to face more uncertainty of equity related cost of financing and thereby reduces stock price reaction of convertible bond issuers (Lewis et al., 2003). It is mainly because firms are exposed to default risk which may lead them unable to meet debt obligations to make the required payments. Issuing firm with greater financial slack may experience stock overvaluation and thus more likely to experience negative CARs.

Moreover, I find that market-specific factors of market run-up and market return volatility have positive impact on the issueršs CARs. This supports prediction by Choe, Masulis, and Nanda (1993) that firms experience more profitable growth opportunities and lower the adverse selection costs during market expansions. The positive impact of market volatility suggests convertible bond issuer face less asymmetric information during volatile market and this supports the beneficial impact of convertible bond financing (Brennan and Schwartz, 1988).

Interestingly, I show that issuer CARs are positively associated with bond-specific issue of credit enhancer and public offering and negatively associated with maturity. This implies that issuers with credit letter of guarantee or backup credit arrangement enjoy better CAR. Similarly, issuers with public offering indicates a higher level of public disclosure of the firm may lower the asymmetric information and experience positive CAR. Issuer with longer maturity option of convertible bond offerings may reduce the effectiveness of bank monitoring and thereby experiences more negative market reaction. The negative coefficient of number of bookrunners participation imply that larger syndicate involvement may not necessarily produce better informational advantage (Corwin and Schultz, 2005) to certify the bonds but rather opt for market power to form a potential collusion among banks to gain underwriting benefit from clients. As a result, convertible bond issuer experiences more negative stock price reaction without proper certification from the banks.

4.5.3 Whole sample: Outcome of bookrunner selection on the underwriting fees

Table 4.3 shows estimation results of cross-sectional regression analysis (OLS) for the determinants of underwriting fees. The selection of control variables is motivated by the previous works on the determinants of underwriting fees by Corwin and Schultz (2005), Fang (2005), Butler, (2008), Lau and Yu, (2010) McCahery and Schwienbacher (2010) and Golubov, Petmezas, and Travlos (2012).

Interestingly, I find that coefficients of domestic and regional bookrunners are insignificant. This implies that geographic bookrunners do not have offer price discount for their clients. In contrast, I find that the reputable bookrunners in Column (3) of Table 4.3 has a negative and significant relation with the fees. This supports certification role provided by reputable bookrunners. Similarly, Daniels and Vijayakumar (2007) find that reputable underwriters certify bond issues with lower underwriting gross spreads. Moreover, Livingston and Miller (2000) show that top tier underwriters provide debt value certification with lower underwriting fees. However, Fang (2005) finds that reputable investment banks charge higher fees to maintain higher quality of certification. Lower fees could be the most effective marketing strategy by reputable underwriters to obtain underwriting contracts from the potential convertible bond issuers as they are mostly risky and unrated. Another reason may be due to the presence of more competitors especially the entry of commercial bank in underwriting market and bank consolidation drives reputable underwriters to provide lower underwriting fees to obtain underwriting business from corporate issuers (Andres, Betzer, and Limbach, 2014).

I find that firms with greater size, more profitable and higher stock run-up are charged lower underwriting fees. This suggests that larger and profitable firm are associated with substantial number of financial analysts with better risk and value assessment. As a result, investment banks may reuse that information to make decision in underwriting and have better advantage to offer their clients with cost reduction. In contrast, firms with higher stock volatility are charged higher fees. This supports Fang (2005) finding that risky firms pay more to get certification from investment banks.

Moreover, I find that convertible bonds with longer maturity, call protection and more syndicate members pay more fees to their underwriters. This suggests that the higher fees could pay off for more information production required by banks in underwriting complex bond placements of longer maturity and call protected bonds. This suggests that greater effort in marketing, pricing and selling are required to place complex bonds. Consistent with Corwin and Schultz (2005), issuers with larger syndicate members in underwriting seek higher charge because the earning gained from underwriting fees must be shared with other syndicate members and book managers may be reluctant to add additional managers without charging higher fees.

Surprisingly, issuers pay lower underwriting fees in highly volatile markets. This supports the argument by Bae and Levy (1994) that underwriters charge higher pricing following market volatility risk will not win contracts and gain good reputation. However, they argue that banks could build up a reputable capital by offer competitive and reasonable pricing fees for underwriting may help them to gain long-term contracts and repeat deals for their clients.

4.5.4 Whole sample: Outcome of bookrunner selection on the offering yields

Table 4.4 presents the results estimated using OLS regressions for the determinants of convertible bond offering yields. Motivated by Livingston and Zhou (2002), Bhojraj and Sengupta (2003), Fang (2005), Butler (2008) and Lau and Yu (2010) studies, I include a wide range of firm-specific, issue-specific, market-specific and instrumental characteristics as potential determinants of bond offering yields equations.

In Column (2), I find that domestic bookrunners appear to be insignificantly related to offering yields. However, I find that regional bookrunners (Column 3) are positively related to the yields, while reputable bookrunners (Column 4) are negatively associated with the offering yields. Consistently, Column (5) and (6) show that offering yields remain positively associated with regional bookrunners and negatively associated reputable bookrunners. This suggests that reputable bookrunners charge lower offering yields to their clients confirms the certification hypothesis. Similarly, Fang (2005) finds that more reputable banks provide higher quality underwriting services by obtaining lower yields for issuers. On the other hand, regional bookrunners charge higher yields. This suggests that regional bookrunner do not provide their issuers with better quality of underwriting. This is in contrast to Lau and Yu (2010) who find that regional underwriters deliver lower yields.

The coefficient of firm size is significant and negative, indicating that larger firms are expected to enjoy lower yields because of their lower default risk. In line with the Bhojraj and Sengupta (2003) explanation that firms with higher stock run-up are positively associated with future expected cash flows which could indicate lower default risk and thereby pay lower yields. The negative coefficient of stock volatility implies that firms with highly volatile stock returns pay higher bond yields to their investors because they are more likely to face cash flows uncertainty and default risk. I find firms are vulnerable to default risk in highly uncertainty period and more likely to pay lower yields to reduce the cost of debt. This also supports Bae and Levy

(1994) argument that underwriters may not gain underwriting contracts for charging higher issuing cost.

The negative coefficient of call protection is consistent to Livingston and Zhou (2002) that callable bond could reduce the reinvestment risk of investors and makes issues less risky. I show that issuers with longer maturity pay lower yields. This substantiates Merton (1974)ôs theory that firms are more likely to have their firm value improved substantially for a longer maturity bond and thus pay lower yields. Additionally, Fons (1994) finds that lower rated issuers tend to have wider credit spreads that narrow with maturity. Consistent with this, Fenn (2000) and Livingston and Zhou (2002) report a negative relation between maturity and yields. I find that firms with a credit letter that guarantees of debt repayment are associated with lower yields. This suggests that firms with credit enhancement letter is less likely to experience default risk and thereby pay lower yields to their clients. I also find that S&P rated convertible bonds are positively related to yields and this suggests that issuers with rated bonds pay higher yields to their bondholders. This is not surprising as other studies also document a negative slope of credit yield curve for bond with rating lower than investment grade (Sarig and Warga, 1989; Fons, 1994). This is in line with Merton (1974)ôs option pricing theory that the high-grade firms tend to experience higher possibility of downward movement in credit quality over time. Additionally, Fons (1994) argues that lower rated issuers tend to have wider credit spreads that narrow with maturity. In contrast, Helwege and Turner (2002) argue that negative sloped yield curve reflect a sample selection bias as less risky high-yield issuers prefer a longer maturity debt. Lastly, the greater number of the bookrunner participation could imply more information production and certification from investment banks (Corwin and Schultz, 2005). Consequently, firms do not need to pay higher yields to attract clients.

4.6 Further analysis

This section presents the results of further analysis by geographical region and using additional estimation methods. Two seminal papers by Kim and Weisbach (2008) and Henderson, Jegadeesh, and Weisbach (2006) highlight that different corporate governance practices in different geographic regions could have different impacts on the international capital structure. Thus, I expect that the outcome of bookrunner selection could differ across regions. Additionally, Fang (2005) and Golubov, Petmezas, and Travlos (2012) point out that the presence of unobserved private information of issuer-underwriter matching could cause self-selection bias. Thus, I use switching regression model of Heckman (1979) and what-if analysis two additional robustness tests to verify the OLS findings on the outcomes of bookrunner selection as discussed earlier in Section 4.5.2 to 4.5.4, respectively. In this section, I also provide detailed analysis of outcomes by issuing firm in North America region, Japan region, European region and Asia Pacific region.

4.6.1 Switching regressions

Panel A in Table 4.5 presents the second-stage switching regression model of Heckman (1979) for the determinants of the convertible bond issuer CARs and Panel B presents the results of the what-if analysis. The coefficients of inverse Mills ratios (1), (3) and (5) of Panel A are positive and statistically significant at 1% level. This suggests that the presence of certain unobserved characteristics that increase the likelihood of hiring domestic, regional and reputable bookrunners to further increase the CARs of convertible issuers. Fang (2005) points out that private information could be those unobserved characteristics that produce superior outcome of underwriting quality. To further ensure that the results remain robust, I conduct what-if analysis test which are less prone to endogeneity concerns. In Panel B, the what-if analysis confirms that the improvement in CAR written by domestic and regional bookrunners would have been improved by 1.08% and 0.91%. However, the what-if analysis suggests that the deals underwritten by reputable bookrunners, joint domestic and reputable bookrunners and joint regional and reputable bookrunners would have been better if they were underwritten by their counterparts. This could be due to the presence of regional differences that may affect the clear-cut outcome of bookrunner selection. In this respect, I will provide more detailed analysis on the outcome of bookrunner selection in different regions.

In Panel A of Table 4.6, I find that both inverse Mills ratio 1 and 2 estimated from switching regression models in respective Column (2) and (3) are negative and significant at 1% level. This indicates that domestic and regional bookrunners could self-select the deals and with soft information advantage through lending relationship offer their clients with a fee reduction. Consistently, Butler (2008) and Lau and Yu (2010) show that proximate underwriters offer their clients with lower fees in underwriting. The coefficients of inverse Mills ratios of these bookrunners remain significantly negative even when I include joint bookrunners in Column (7) and Column (9). The coefficient of inverse Mills ratio 3 is insignificant. This implies no self-selection bias and confirms the OLS results of negative impact of reputable bookrunners on the underwriting fees. This result is in line with Livingston and

Miller (2000) and Daniels and Vijayakumar (2007) who document that prestigious underwriters certify the value of a debt issue to investors with lower underwriting fees. In contrast, Fang (2005) argues that reputable investment banks charge higher fees to maintain their sustained certification roles.

To control for self-selection bias, I present Table 4.7 with the estimation results obtained from the switching regression model for yield equations. I find that the coefficients of inverse Mills ratio 1 and 3 in Column (1) and (3) are insignificant. This suggests that the domestic and regional bookrunners do not self-select deals. This corroborates the OLS results in Table 4.4 that yields are insignificantly related to domestic bookrunners, but positively related to regional bookrunners. This suggests that regional bookrunner charges higher bond yields on their clients issuing convertible bonds. Surprisingly, the inverse Mills ratio 5 is significantly positively related to offering yields at 1% level but the magnitude this coefficient is lower than the coefficient of inverse Mills ratio 6. This suggests that reputable bookrunners charge positive but lower yields which is inconsistent to Fang (2005) of negative yields. I find that the inverse Mills ratio for joint bookrunners are insignificant. What-if analysis in Panel B of Table 4.7 reveals that regional bookrunner would have charged higher offerings yields for non-regional deals while reputable bookrunner would have offered lower offering yields for non-reputable deals. Overall, domestic bookrunners provides certification with positive market reaction and lower fees. Regional bookrunners deliver their clients with positive stock price reaction with yields premium. While, reputable bookrunners offer fee and yield reduction in underwriting contracts with a positive market reaction.

4.6.2 Analysis of outcomes of bookrunner selection by issuing firm region

In this section, I provide a more comprehensive investigation on the outcomes of bookrunner selection on the CARs, underwriting fees and offering yields in main regions. It is expected that the outcome of bookrunner selection may differ across regions due to different bookrunner selection structure, methods and procedures of issuance, source of available capital, legal environment, firm-specific, issue-specific, market-specific and country-specific factors. The main motivation of this section comes from Dutordoir et al. (2016) who document that the market reaction following the announcements of convertible bond offerings differ remarkably between U.S., Japan and other countries. In addition, Kim and Weisbach (2008) and Henderson, Jegadeesh, and Weisbach (2006) highlight that issuing firms in different geographical regions depend on different alternative sources of financing. Thus, it is interesting to know whether the outome of bookrunner selection differ across regions.

4.6.2.1 US & Canada sample: Outcomes of bookrunner selection on the CARs, underwriting fees and offering yields

In Table 4.8, I find that the estimation results based on OLS suggest that domestic, regional and reputable bookrunners deliver their clients with negative stock price reaction[6]. Short-selling activities are permitted in this region and thereby this may create a downward pressure to the stock price reaction following the

---

[6] The results from switching regression and what-if analysis confirm the negative coefficients CARs delivered by domestic, regional and reputable bookrunners.

convertible bond offerings depending on the volume and size of convertible bond arbitrageurs and hedge fund managers (Choi et al., 2009; De Jong et al., 2012; Grundy & Verwijmeren, 2018). Turning to the determinants of the stock price reaction, I find that the CARs of convertible bond issuers are negatively associated with financial slack and longer maturity. This suggests that stock overvaluation on higher financial slack and poor control rights by lenders on longer maturity produce negative stock price reaction. In addition, I show that stock prices of convertible bond issuers react positively to greater issue size and less risky bond. This is in line with Fields and Mais (1991) explanation that a larger bond offerings conveys positive indication of issuers ómanagement ability on the firm value. Positive market reaction is expected for firms with good credit rating.

On the outcome of bookrunner selection presented in Table 4.9, I show that domestic and regional bookrunners have insignificant impact on the fees[7]. This suggests that deals underwritten by domestic and regional bookrunners do not enjoy underwriting fee discount. In addition, I find that reputable bookrunners provide their clients with a fee discount[8]. Likewise, Daniels and Vijayakumar (2007) and Livingston and Miller (2000) show that reputable underwriters offer debt value certification with lower fees. It is relevant for the case of convertible bond offerings as most of the issuers are low in credit rating and unwilling to obtain costly certification from reputable banks with higher underwriting fees. Additionally, I document that issuers with greater firm size, higher financial slack, higher stock run-

[7] Results from switching regressions suggest that regional bookrunners are negatively associated with fees.
[8] This finding is confirmed by what-if analysis.

up, lower stock volatility, higher market volatility, larger size of offerings and longer maturity pay lower underwriting fees. Lower underwriting fees are expected for larger firms and firms with lower stock volatility because they are less likely to experience default risk. Lower fees are expected on issuers with sufficient financial slack to serve as essential collateral to ameliorate agency costs of debt. Firms with higher stock run-up could signal that firms have outstanding stock performance and thus are expected to pay lower underwriting fees. Consistent with Bae and Levy (1994) explanation that bookrunners charge lower fees to win underwriting contracts and gain reputation during highly volatile markets. Firms with larger size of offerings are expected to have more comparative advantage in paying lower fees to bookrunner. In line with Datta et al., (2000)ôs explanation that firms with better stock performance tend to issue convertible bond with longer maturity for the purpose to delay the conversion and thereby are expected to pay lower fees.

The estimation results shown in Table 4.10 show that domestic and regional bookrunners charge higher yields, while reputable bookrunners offer yield reduction to their clients[9]. This suggests that domestic and regional bookrunners do not perform better than reputable bookrunners in underwriting convertible bonds. This is in contrast to Lau and Yu (2010) who document that domestic and regional bookrunners offer yield reduction to their clients. The yield reduction delivered by reputable bookrunner is in favour Fang (2005)ôs finding that reputable banks offer higher quality of underwriting services. In addition, I show that issuing firms are charged with lower offering yields for larger firm size, higher stock run-up, lower

[9] The results are consistent to switching regression and what-if analysis robustness check.

stock volatility, larger size of offerings, longer maturity and publicly offered bonds. Firms with larger firm size, lower stock volatility and larger size of offerings are expected to pay lower yields because of their lower market risk. Firms with higher stock run-up pay lower yields due their expected future cash flows. Lower yields incurred on issuers with longer maturity may suggest that firms with strong stock performance could overcome greater interest risk exposure. Issuing firms with publicly offered bonds tend to reveal more public information about the firm value to investors and thus pay lower bond yields.

Taken together, domestic and regional bookrunners deliver negative stock price reaction with a higher yield for their clients. Reputable bookrunners offer lower fee and lower yield but deliver their clients with negative stock price reaction after convertible bond issuance. This suggests that reputable bookrunners offer better underwriting outcome in convertible bond market in comparison to domestic and regional bookrunners.

4.6.2.2 Japan sample: Outcomes of bookrunner selection on the CARs, underwriting fees and offering yields

Table 4.11 shows that the coefficients of domestic, regional and reputable bookrunners are insignificant[10]. This suggests that the selection of domestic, regional and reputable bookrunners do not have any impact on the CARs. I also find that firm size, stock run-up, size of offerings, years-to-maturity and number of bookrunner

[10] This finding is inconsistent with switching regression and what-if analysis. These robustness tests show that domestic, regional and reputable bookrunners provide positive CARs performance.

participation are negatively associated with CARs. This suggests that larger firms associated with more financial analysts do not gain better CARs from issuing convertible bonds and this evidence confirms Brennan and Schwartz (1988) rationale that smaller and risky firms tend to gain more with convertible financing. This is because convertible bond offerings convey unfavourable information about the issuers and it is expected that larger firms with better credit rating using convertible debt may experience more negative impact. Firms with higher stock run-up could be an indication of stock overvaluation and may lead to more negative stock price reaction. Firms with larger size of offerings are expected to experience negative CARs due to greater interest risk exposure. In addition, the lenders have weak monitoring over bond with longer maturity and may result with negative CARs. The negative market reaction for more number of bookrunner participation may be due to potential collusion among bookrunners to use market power to extract underwriting benefit from their clients. Moreover, I find that issuing firms during market expansion (higher market run-up) and publicly offered bond are less likely to experience asymmetric information problem. Thus, a positive CARs on the convertible bond offerings is expected.

In Table 4.12 I also find that domestic and regional bookrunners charge higher underwriting fees for their clients[11]. This evidence is in contrast to Lau and Yu (2010) who show that domestic and regional bookrunners offer fee discount since proximate banks have better access to private information of the issuers. This may suggest the use of market power by bookrunners in Japan to exploit their clients with

[11] Switching regression and what-if analysis confirm this results.

higher charges for certification. While, reputable bookrunners offer fee reductions[12]. Similarly, Daniels and Vijayakumar (2007) and Livingston and Miller (2000) document that reputable bookrunners certify debt value with lower fees. I also present that financial leverage, years-to-maturity and publicly offered bond are the only determinants that have significant and positive relations with underwriting fees. This implies that firms with higher financial leverage are more likely associated with default risk and thereby expected to pay more underwriting fees to bookrunner. Bookrunner charges higher fees for issuers with longer maturity convertible bond due to weak monitoring rights over a longer period. Issuers opt for public placement could also pay higher fees due to more efforts put forward by underwriters in marketing and bookbuilding the convertible bonds.

On the outcome of bookrunner presented in Table 4.13 show that domestic and regional bookrunners have positive impact on the bond yields.[13] This suggests that domestic and regional bookrunners do not provide their clients with better yield outcome in underwriting. However, the reputable bookrunners have insignificant impact on the bond yields. In Table 4.13, I find that firm size, stock run-up and market run-up are negatively related with bond yields. This suggests that issuers with larger firm size are generally associated with more number of analysts and lower yields are expected. Lower yields are expected for firms with higher stock run-up which indicate healthier prospects of future cash flows. In addition, issuers during market expansion pays lower yields due to lower level of asymmetric information.

---

[12] This is inconsistent with robustness check where reputable bookrunners self-select the deals and charge higher underwriting fees.

[13] This evidence is confirmed by switching regression and what-if analysis. However, further analysis reveals that reputable bookrunners charge their clients with higher bond yields.

On the other hand, market volatility, years-to-maturity, publicly offered bond and number of bookrunner participation enter significantly positive with the bond yields. Issuers pay higher yields during higher market volatility and longer maturity termed bonds because they are more likely to experience greater default risk. Higher yields are also expected for firms choose public offerings and more bookrunner participation due to more efforts required by underwriters to underwrite the convertible bond offerings.

Overall, bookrunners with geographical proximity advantages provide their clients with higher fees and higher yields. This is in line with Cook, Schellhorn, and Spellman (2003) that borrowers could only obtain certification by the lenders if they are willing to pay higher loan rates. On the other hand, reputable bookrunner offer fee discount to their clients.

4.6.2.3 European sample: Outcomes of bookrunner selection on the CARs, underwriting fees and offering yields

In Table 4.14, I find that domestic and regional bookrunners are positively associated with CAR. While, reputable bookrunners obtain negative stock price reaction for their issuers[14]. This suggests that proximate bookrunners offer better outcome of underwriting services than reputable bookrunners. I also find that call protection dummy is the only significant and negative determinant of CARs. Placing complex bond with call protection feature may result in more negative market

---

[14] The results based on switching regression model estimation suggest that no evidence of self-selection bias and validates the OLS estimates.

reaction because it is rather difficult for bookrunners to identify potential and informative investors and may result in market failure.

The results from Tables 4.15 suggest that domestic, regional and reputable bookrunners do not have significant impact on the fees charged on their clients.[15] In addition, I find that market run-up and volatility are positively related with underwriting fees. This suggests that bookrunner charges higher fees for issuers issuing convertible bonds during market expansion and in highly volatile markets. Additionally, I document that number of bookrunner participation enter significantly negatively with fees. This suggests issuers enjoy fee discount with larger number of bookrunner participation in underwriting convertible bonds.

In Table 4.16, I also present the results for bond yields at-issue using OLS regressions. The results suggest that domestic and regional bookrunners charge lower yields.[16] This suggests domestic and regional bookrunners deliver superior underwriting services for their clients. Consistently, Lau and Yu (2010) find that proximate bookrunners with private information advantage offer yield discount to certify debt value of issuers. On the same Table, I find that firm size, return on assets, stock run-up and call protected bond are significantly negatively associated with yields. The results suggest that firms with greater firm size and higher profitability pay lower yields as they are associated with more financial analysts and less likely to experience default risk. The negative relation between stock run-up and yield could indicate that firms have outstanding stock performance and thus enjoy

[15] Switching regression and what-if analysis reveal that issues underwritten by reputable and domestic bookrunner enjoy fee reduction.
[16] Switching regression and what-if analysis reinforce that the OLS estimates are not affected by self-selection bias.

yield discount from the bookrunner. Consistent with Livingston and Zhou (2002) that convertible issuers pay lower yields for issuing call protected convertible bond as it could mitigate the reinvestment risk. Livingston and Zhou (2002) find that issuers with call protected bonds enjoy lower yields from underwriter. On the other hand, I find that stock volatility is positively related to yields. Firms with higher stock volatility is more likely to experience default risk and thereby pay higher yields.

In summary, convertible bond issues with domestic bookrunners can obtain positive stock price reaction, lower fees and lower yields. Regional bookrunners deliver positive price reactions with lower yields. While, issues with reputable bookrunners obtain negative stock price reaction. This suggests that proximate bookrunners offer better outcome of underwriting in comparison to reputable bookrunners.

4.6.2.4 Asia Pacific sample: Outcomes of bookrunner selection on the CARs, underwriting fees and offering yields

The outcome of bookrunner selection presented in Table 4.17 show that the coefficients of domestic and regional bookrunners are positive related to positive CARs of issuers[17]. On the other hand, the reputable bookrunners deliver negative CARs to convertible bond issuers. This suggests that domestic and regional bookrunners deliver better quality of underwriting services than reputable bookrunners. This also suggests that reputable bookrunners may use lower pricing marketing to obtain the underwriting contracts but do not provide higher quality of

[17] This is inconsistent with switching regression model. The results show that both domestic and regional bookrunners deliver negative CARs in joint bookrunner selection analysis.

underwriting outcome to their clients. Moreover, the negative stock price reaction may also be due to lack of placing experience and capacity by underwriting banks in emerging markets. Additionally, I document that firm size, return on assets, stock run-up, market volatility and number of bookrunner participation are negatively associated with issuerôs CARs. This suggests that the stock prices of issuing firms with larger firm size and higher profitability react negatively to the convertible bond offerings. This confirms the rationale by Brennan and Schwartz (1988) who argue that smaller and risky firms tend to gain more with convertible financing in comparison to larger firms. This is because larger issuers with strong credit ratings tend to benefit most from using straight debt financing as investors perceive convertibles financing are characterized by firms with higher business and financial risk. Stock overvaluation is likely to occur for firms with higher stock run-up and may create negative price reactions. Corporate firms tend to experience more asymmetric information during higher market volatility as it may lead to more negative reaction to the stock prices. The negative relation between the issuerôs CARs and the number of bookrunner participation could indicate the use of market power by a number of bookrunners to extract underwriting gain from the issuers.

In Table 4.18, I find that reputable bookrunners have negative impact on the fees[18]. Consistently, Daniels and Vijayakumar (2007) and Livingston and Miller (2000) also highlight that reputable bookrunners provide debt value certification with lower underwriting fees. However, I show that both domestic and regional

[18] Results from switching regression and what-if analysis domestic and regional bookrunners also charge lower fees.

bookrunners have insignificant effect on the fees. I document that firm size and return on assets are negatively related with underwriting fees. Convertible bond issuers with larger firm size and higher profitability are associated with number of financial analysts and thereby pay lower fees to bookrunner. Moreover, I find that issuers with S&P rated convertible bonds and deal underwritten by a larger bookrunner participation pay higher fees. Issuers with credit rating and larger size of bookrunner participation are charged higher fees could indicate the presence of market power among bookrunner to exploit gain in providing underwriting services.

On the outcome of bookrunner selection presented in Table 4.19 show that bond yields are insignificantly associated to domestic, regional and reputable bookrunners.[19] I also document that I find that issuers with larger firm size and credit letter are usually associated with more number of analysts and therefore pay lower yields. Firms with higher stock run-up could have strong stock performance and thus pay lower yields. Issuers with longer maturity convertible bonds could be an indication of superior stock performance. I also show that financial leverage, return on assets, public offerings and number of bookrunner are positively associated with bond yields. I document that firms with higher financial leverage pay higher yields due to higher probability of default risk. Profitable firms pay higher yields to bookrunner and this evidence suggests profitable firms do not gain yield discount from the convertible bond offerings. Issuing firms pay higher yields to publicly offered convertible bond indicate that higher cost incurred for bookrunner to produce

[19] The finding on the outcome of domestic and regional bookrunner selections are confirmed by switching regression and what-if analysis. However, further analysis show that reputable bookrunners offer lower yields to their clients.

more information in underwriting. Issuers with convertible bonds underwritten by a larger number of bookrunner pay higher yields could indicate the presence of market power to extract underwriting gain.

Taken together, domestic and regional bookrunners offer their clients with positive stock price reaction. While, reputable bookrunners deliver negative CARs with lower fees. This implies that domestic and regional bookrunners deliver better underwriting outcome than reputable bookrunners in Asia Pacific region.

4.6.2.4 Why the outcome of bookrunner selection differ between regions.

In earlier sections, I find that the outcome of bookrunner selection differ remarkably between regions. More specifically, I find that reputable bookrunners offer better underwriting outcomes in comparison to domestic and regional bookrunners to their clients in North America and Japan regions. On the other hand, I show that domestic and regional bookrunners deliver superior underwriting services to convertible bond issuers than reputable bookrunners in European and Asia Pacific regions. The condition of the convertible market, methods and stated purpose of convertible bond offerings, sources of available bookrunners, legal environment and country-specific factors could be the reasons to why the presence of different outcome of bookrunner selection.

Based on the transaction records of convertible bonds in SDC database, the convertible bond markets in the North America and Japan are established in 1980s and thereby the reputable bookrunners have gained their reputation through long history in providing superior underwriting services. While, corporate firms in European and Asia Pacific have just started to use convertible bond financing in late

1990s. Thus, firms have higher tendency to use local banks to issue convertible bonds because reputable underwriters could be based in U.S. and may use their market power to exploit the certification rent from issuers in European and Asia Pacific region with higher underwriting fees.

Moreover, the methods and stated purpose of convertible bond offerings differ across regions may also result to different outcome of bookrunner selection. For instance, firm commitment and bought deal are top choices of convertible bond offerings chosen by issuers in U.S. and Canada. While, issuers in European region use a wide range of different methods of offerings including firm commitment, offer for sale, private placement, best efforts and rights. The detailed of the methods of convertible bond issuance are discussed in Section 2.4.3. I also find that issuing firms in Japanese prefer to use capital expenditure as the stated of uses of proceeds. However, issuers in U.S. prefer to use general corporate purpose as the stated purpose of convertible bond offerings. Similarly, Dutordoir et al. (2016), Abhyankar and Dunning (1999), Dann and Mikkelson (1984) document that the different methods of issue and stated purpose of convertible bond offerings produce different stock price reactions.

Sources of available bookrunner may also contribute to the explanation of different outcome of bookrunner selection. Kim and Weisbach (2008) and Henderson, Jegadeesh, and Weisbach (2006) also highlight that the financing decision of corporate firms in different regions are subject to alternative and available sources of capital. From Appendix B, I provide evidence that convertible bond issuers in U.S. and Japan regions have better choices to a wide range of available and active bookrunners in providing underwriting services. However, issuers in Asia Pacific and European regions may not have this advantage due to a smaller size of underwriting market in convertible bonds.

Legal environment could also be another factor contributing to the difference of outcome of bookrunner selection. In first empirical chapter, I provide evidence that the convertible bond issuers obtain better stock price reactions in countries provide better investor protection. Lau and Yu (2010) document that the cost reduction effect of hiring domestic and regional underwriters is weaker in a legal system provides good investor protection.

Additionally, country specific factors may contribute to the different outcome of bookrunner selection. For instance, short-selling activities by arbitrageurs and hedge fund managers are allowed in the U.S. and this creates extra price pressure in the convertible market and thereby bookrunners in U.S. deliver negative stock price reaction. In Chapter 2, I provide evidence that convertible bond issuers obtain better stock price reaction in a country with positive economic growth and stronger market capitalization. On the other hand, I show that issuers experience negative shareholder wealth effect in country with huge long-term government debt. Thus, it is expected that these potential country specific factors could be another explanation to why outcome of bookrunner selection differ based on the domiciled region of issuing firms.

4.6.3 Analysis of outcomes of bookrunner selection by issuing firm legal origin

In this section, I provide empirical findings on the outcomes of bookrunner selection on the CARs, underwriting fees and offering yields in main four legal origins. Specifically, this includes English origin, French origin, German origin and Scandinavian origin. However, the sample of Scandinavian origin is not included in this analysis due to data insufficiency for regression analysis. La Porta et al. (1997) has shown that legal origin of a country is an important determinant of both creditor rights and private credit development. Additionally, Djankov, McLiesh, and Shleifer (2007) highlight that the differences in creditor rights and information-sharing institutions in different countries are determined by different legal origins. Thus, it is expected that the outcomes of bookrunner selection may differ across different legal origins.

4.6.3.1 English origin sample: Outcomes of bookrunner selection on the CARs, underwriting fees and offering yields

In Table 4.20, I find that the negative and significant coefficients of both domestic and reputable bookrunners, suggesting that both bookrunners deliver negative stock price reactions to their convertible bond issuers. While, the coefficient of regional bookrunner on the CARs of issuer is insignificant. The negative underwriting outcome of the issuerǫs CARs could be due to short-selling activities pursued by convertible bond arbitrageurs and hedge fund managers. The short-selling activities may create further downward stock price pressure surrounding the announcements of convertible bond offerings (Choi et al., 2009; De Jong et al., 2012; Grundy & Verwijmeren, 2018). In addition, I find that firm size, financial slack, stock run-up and maturity have significant and negative impact on the stock price reactions of issuers. In line with Brennan and Schwartz (1988) that smaller and risky firms tend to gain more by using convertible financing in comparison to larger firms. An issuer with larger firm size tend to use straight debt to mitigate asymmetric information and potential equity dilution in choosing convertible bonds. The negative coefficients of both financial slack and stock run-up are expected and this implies that firms with higher stock run-up and financial slack are more risky due to potential stock overvaluation. The negative impact of longer term maturity implies that underwriter has weaker control over convertible bond with longer maturity and thus may inflict more uncertainty. As expected, I find that issues with credit enhancement and S&P rating are positively associated with the CARs of convertible bond issuers. This suggests that issuer with credit letter of guarantee and S&P rated is less risky and less likely to experience asymmetric information problem.

Turning to the results of underwriting fees presented in Table 4.21, I find that reputable bookrunners offer fee reduction to their clients in providing underwriting services. In line with Livingston and Miller (2000) and Daniels and Vijayakumar (2007) that reputable bookrunners certify value of debt value for a lower fee. Moreover, I find that issuers with larger firm size, S&P rated issues, higher financial slack and higher stock stock-up pay lower underwriting fees to bookrunners. A larger firm is usually associated with larger number of financial analysts and thus underwriters could rely on those information in underwriting and offer lower price. Issuer with a rated convertible bond is less risky and thus could obtain a fee discount from a bookrunner. Firms with higher stock run-up may signal the existence of profitable investment and higher financial slack may indicate the essential collateral to mitigate the asymmetric information. Thus, these firms could get a fee discount in hiring an underwriter. I find that bookrunner charges lower fees to convertible bond issuers in a market with higher volatility. This suggests that a lower pricing strategy is an essential marketing for underwriter to gain underwriting contracts in a volatile market. Consistent with Lee et al. (1996)ôs argument that firm with a larger size of issuance may have economies of scale advantage of paying lower underwriting fees to bookrunner. The positive coefficient of call protection dummy indicates that an issuer pays higher fees due to the complex placement of this specific feature of convertible bonds.

In Table 4.22, I document that both domestic and regional bookrunners charge higher offering yields-at-issue for the issuing firms. While, corporate firms hiring reputable bookrunners enjoy with paying lower yields-at-issue. This implies that it is worthwhile to hire reputable bookrunners in obtaining better underwriting outcome of offering yields. In addition, I find that the offering yields are negatively associated with firm size, stock run-up, issue size, years-to-maturity, credit enhancer and public offering. This suggests that an issuer with larger firm size is associated with more financial analysts and has better credit rating, thereby could obtain lower yields from bookrunners. A firm with higher stock run-up pays lower yields due to the presence of profitable investment prospect. The negative coefficient of issue size indicates that issuing firms have economies of scale to obtain lower yields from bookrunners. As expected, an issue with credit letter is less likely to be defaulted and thereby pays lower yields. The negative finding of public offerings confirms the prediction made by Livingston and Zhou (2002) that bonds placed under public offerings have more information available to investors and thereby incur less cost of yields. I find that a firm with higher stock volatility is expected to pay more yields due to the presence of higher default risk.

4.6.3.2 French origin sample: Outcomes of bookrunner selection on the CARs, underwriting fees and offering yields

In Table 4.23, I present the determinants of the stock price reactions in respond to the announcements of convertible bond offerings in French origin countries. I find that domestic, regional and reputable bookrunners have no significant impact on the CARs. I find that stock prices of issuers react positively with a larger offering issue size. This confirms Fields and Mais (1991)ȇs prediction that convertible bond issuers with a larger issue size signals the strength of management capability on the firm value.

Turning to the underwriting fees in Table 4.24, I show that domestic, regional and reputable bookrunners have no explanatory power on the fees. Further regression analysis reveal that firms with higher financial leverage pay higher fees due to higher default risk. I also find that firms pay higher fees for issuing larger issue size of convertible bonds, indicating the presence of diseconomies of scale in underwriting fees.

In Table 4.25, I present the regression results of the determinants of offering yields of convertible bonds in French origin sample. I find that the coefficients of domestic, regional and reputable bookrunners are statistically insignificant, suggesting that bookrunners do not have any influence on the yields at-issue. I show that the bond yields at-issue are negatively associated with firm size, return on assets, financial slack, years-to-maturity, call protection and number of bookrunner participation. This suggests that firms with more analysts, higher profitability and sufficient cash flows have better position to obtain lower yields from bookrunners. Consistent with Datta, Iskandar-Datta, and Patel (2000)ȇs prediction that firms with better stock performance are more likely to issue convertible bond with longer maturity with a motive to postpone the conversion. Issues with call protection feature could reduce the revievestment risk and larger bookrunner syndicate could have better distribution capacity, thereby reduce the yields.

4.6.3.3 German origin sample: Outcomes of bookrunner selection on the CARs, underwriting fees and offering yields

In Table 4.26, I present the regression results of the determinants of stock price reactions of convertible bond issuers in German origin countries. I find that domestic, regional and reputable bookrunners have no significant relation with the CARs. This suggests that hiring a specific type of bookrunner may not obtain a better stock price reaction for convertible bond issuers to enhance wealth of shareholders. Moreover, I find that firm size, profitability, stock run-up, stock volatility, years-to-maturity, call protection and number of bookrunner participation have negative impact on the CARs of issuers. The negative coefficients of both firm size and profitability ratios indicate that a larger and profitable firm may experience negative stock price reactions in convertible bond offerings as it is generally the only choice of costless financing by a smaller and risky firm. I find that issuers with higher stock run-up and stock return volatility are generally have higher probability of default risk and thereby more likely to experience negative stock price reactions. The negative coefficient of years-to-maturiy indicates that bookrunners may have weaker monitoring on bonds with longer maturity and therefore the negative stock price reaction is expected. The negative coefficient of call protection dummy suggests issuers experience negative stock price reaction as placing a complex feature bond may result to market failure as it is rather difficult for bookrunners to do bookbuilding and identify potential investors. The negative coefficient of number of bookrunner participation suggests that the presence of market power among bookrunners to extract profit from clients rather than produce more reliable information advantage. On the other hand, I find that publicly offered convertible bonds are associated with positive stock price reactions due to better information disclosure to the public.

In Table 4.27, I find that reputable bookrunners offer fees discount for their clients in underwriting convertible bonds. However, the insignificant coefficients of both domestic and regional bookrunners, suggesting that geographic bookrunners have no influence on the fees. Additionally, I find that profitable issuers pay lower fees and this is expected as they are less likely to experience default risk. I find that issuers with longer maturity term of convertible bonds pay higher fees due to greater interest rate risk exposure. Issues with convertible bonds of call protection feature are expected to pay higher fees due to the complexity in bond placement to be managed by underwriters.

In Table 4.29, I present the regression results of the determinants of offering yields at-issue following the convertible bond offerings. More specifically, I find that regional bookrunners deliver their clients with more yields charges while reputable bookrunners offer yields discount to convertible bond issuers. This suggests that reputable bookrunners provide more economical debt value certification. In addition, I find that issuers with higher stock volatility pay higher yields due to higher risk of default. I also find that convertible bond issuers with a longer maturity are charged with lower yields, suggesting that the issuers have economies of scale advantage with lower charges for a larger amount of proceeds issuance. As expected, issuer with credit letter reduces the default risk and thereby could get lower yields from the underwriters. I find that the coefficient of call protection dummy is negative and significant, implying that issuing firms pay lower yields as bonds with this feature could alleviate the reinvestment risk.

4.7 Conclusion

This chapter examines the impact of bookrunner selection in underwriting market on the price and quality of the underwritten global convertible bonds. Given the presence of self-selection bias of bookrunner selection, I use switching regression model with endogenous switching to control the endogenous relation between issuer and underwriter matching and directly measure the outcome of respective domestic, regional and reputable bookrunner selection on the CARs, underwriting fees and offering yields in North America region, Japan region, European region and Asia Pacific region.

I find that domestic and regional bookrunners in the North America region obtain negative stock price reaction with higher yields. On the other hand, reputable bookrunners in the same region offer feeds and yields reduction but deliver negative price reaction. The results suggest that reputable underwriters offer better underwriting quality of stock price reaction. One possible explanation of the negative market reaction could be due to the short-selling activities by arbitrageurs and hedge fund managers which may create a downward pressure to the stock price reaction surrounding the convertible bond offerings (Choi et al., 2009; De Jong et al., 2012; Grundy & Verwijmeren, 2018).

In addition, I find that domestic and regional bookrunners in Japan provide their clients with higher fees and higher bond yields. This finding implies may imply that bookrunners in Japan use market power to exploit convertible bond issuers with higher costs for obtaining debt value certification. I find that reputable bookrunners charge lower underwriting fees. This is consistent with Livingston and Miller (2000) who also document that reputable bookrunners provide debt value certification with lower fees.

In European region, I find that domestic bookrunners obtain positive stock price reaction, lower fees and lower yields. I find that regional bookrunners deliver positive stock price reaction with lower yields. In contrast, reputable bookrunners deliver clients with negative stock price reaction. This implies geographic proximate bookrunners provide better underwriting services than reputable bookrunners. In Asia Pacific region, I show that domestic and reputable bookrunners offer their clients with positive stock price reaction. However, I document that reputable bookrunners obtain negative stock price reaction with lower fees. This suggests that different legal systems and country-specific factors may influence the underwriting outcome delivered by reputable bookrunners.

My further regression analysis reveal that the outcomes of bookrunner selection differ remarkably between different legal origins of issuing firms. I find that reputable bookrunners in English origins deliver better outcome than both domestic and regional bookrunners in terms of lower underwriting fees and lower offering yields at-issue. However, both reputable and geographic proximate bookrunners obtain negative stock price reactions for their clients and this could be due to short-selling activities by hedge fund managers and convertible bond arbitrageurs. I show that bookrunners in French origins have no significant impact in delivering a better underwriting outcome to their clients. This is consistent with the explanation by La Porta et al. (1997) and Djankov, McLiesh, and Shleifer (2007) that French legal origin countries have weak investor rights, creditor rights and the least developed capital markets. In German legal origin sample, I find that reputable bookrunners deliver superior debt value certification as compared to bookrunners with geographic proximity advantage with lower underwriting fees and lower yields at-issue.

Taken together, convertible bond issuers should consider firm size, financial leverage, market volatility, issue size, years-to-maturity, call protection, public offering and number of bookrunner participation prior to choosing a bookrunner. These are the significant determinants of domestic, regional and reputable bookrunners. Moreover, bookrunner should also consider the outcome of bookrunner selection as it may differ by global region. In particular, I find that reputable bookrunners appear to provide better certification to issuers in North America and Japan regions. While, geographic proximate bookrunners obtain much better underwriting services to issuing firms domiciled in European and Asia Pacific regions. My further regression also reveal that reputable bookrunners perform more worthwhile debt value certification to convertible bonds issuers in English and German origin countries. This study further suggests that condition of the convertible market, methods and stated purpose of convertible bond offerings, sources of available bookrunners, legal environment and country-specific factors are the possible explanations to the difference underwriting outcomes delivered by bookrunners.

Table 4.1: Probit and recursive bivariate probit analysis for the determinants of domestic bookrunners, regional bookrunners and reputable bookrunners selection

This table presents the estimation results of the probit and recursive bivariate probit analysis for the determinants of for domestic bookrunners, regional bookrunners and reputable bookrunners selection for a sample of global convertible bond offerings in 30 countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Variables	Probit model			Recursive bivariate probit model			
	1	2	3	4	5	6	7
	Domestic	Regional	Reputable	Domestic	Reputable	Regional	Reputable
Firm size	ī 0.092***	ī 0.053***	0.207***	ī 0.072***	0.211***	ī 0.031*	0.210***
	(0.014)	(0.015)	(0.016)	(0.017)	(0.019)	(0.017)	(0.019)
Financial leverage	ī 0.087	ī 0.320***	ī 0.894***	ī 0.131	ī 0.894***	ī 0.370***	ī 0.898***
	(0.114)	(0.118)	(0.122)	(0.113)	(0.122)	(0.117)	(0.122)
Return on assets	ī 0.403***	ī 0.877***	0.222	ī 0.395**	0.233	ī 0.866***	0.225
	(0.147)	(0.184)	(0.155)	(0.162)	(0.145)	(0.188)	(0.144)
Financial slack	0.074	0.103	0.718***	0.120	0.722***	0.158*	0.718***
	(0.088)	(0.093)	(0.096)	(0.081)	(0.129)	(0.087)	(0.128)
Stock run-up	ī 0.002***	ī 0.002***	0.002***	ī 0.002***	0.002***	ī 0.002***	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Stock volatility	ī 0.005	0.015	ī 0.071***	ī 0.011	ī 0.070***	0.009	ī 0.069***
	(0.016)	(0.018)	(0.019)	(0.017)	(0.018)	(0.017)	(0.018)
Market run-up	0.002	ī 0.001	ī 0.001	0.002	ī 0.001	ī 0.001	ī 0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Market volatility	ī 0.341***	ī 0.527***	0.151**	ī 0.327***	0.152**	ī 0.508***	0.151**
	(0.066)	(0.068)	(0.069)	(0.067)	(0.070)	(0.069)	(0.070)
Relative issue size	ī 0.059**	ī 0.066**	0.080**	ī 0.054	0.083*	ī 0.060*	0.083*
	(0.026)	(0.028)	(0.040)	(0.033)	(0.048)	(0.034)	(0.049)
Years-to-maturity(LN)	0.177***	0.266***	0.259***	0.193***	0.261***	0.284***	0.260***
	(0.044)	(0.045)	(0.047)	(0.047)	(0.048)	(0.047)	(0.048)
Credit enhancer	ī 1.266**	ī 0.702		ī 1.256***		ī 0.704*	
	(0.533)	(0.451)		(0.487)		(0.395)	
Call protection dummy	ī 0.688***	ī 0.609***	0.861***	ī 0.607***	0.860***	ī 0.516***	0.860***
	(0.070)	(0.073)	(0.059)	(0.090)	(0.058)	(0.090)	(0.058)

Table 4.1: (continued)

Variables	Probit model			Recursive bivariate probit model			
	1	2	3	4	5	6	7
	Domestic	Regional	Top3orTop21	Domestic	Top3orTop21	Regional	Top3orTop21
Public offering dummy	0.596***	0.603***	ī 0.119**	0.585***	ī 0.121**	0.590***	ī 0.117**
	(0.049)	(0.050)	(0.050)	(0.053)	(0.050)	(0.053)	(0.050)
S&P rated bond dummy	ī 0.126*	ī 0.195***	ī 0.077	ī 0.135*	ī 0.075	ī 0.204***	ī 0.075
	(0.071)	(0.073)	(0.075)	(0.074)	(0.077)	(0.076)	(0.077)
Number of bookrunner(s)	0.300***	0.383***	0.582***	0.325***	0.571***	0.414***	0.575***
	(0.038)	(0.045)	(0.058)	(0.049)	(0.066)	(0.055)	(0.066)
Top3 or Top21	ī 0.223***	ī 0.332***		ī 0.484***		ī 0.633***	
	(0.052)	(0.054)		(0.133)		(0.129)	
GDP	0.145***	0.159***		0.145***		0.160***	
	(0.026)	(0.027)		(0.028)		(0.030)	
Number of convertible issue	0.413***	0.214***		0.412***		0.214***	
	(0.030)	(0.031)		(0.032)		(0.032)	
Scope			0.483***		0.478***		0.480***
			(0.032)		(0.035)		(0.035)
Constant	ī 10.108***	ī 3.668***	ī 0.844	ī 9.905***	ī 1.530	ī 4.021***	ī 1.667
	(1.273)	(1.119)	(0.862)	(1.345)	(1.432)	(1.134)	(1.501)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Two digit SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R^2	0.301	0.255	0.413	0.297	0.419	0.253	0.425
Rho (ρ)					0.162***		0.189***
Observations	6,073	6,073	6,073	6,073	6,073	6,073	6,073

Table 4.2: Whole sample—Cross-sectional regression analysis (OLS) for the determinants of convertible bond issuer CARs

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of convertible bond issuer CARs on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in 30 countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.248***	ī 0.250***	ī 0.248***	ī 0.183***	ī 0.185***	ī 0.183***
	(0.058)	(0.059)	(0.058)	(0.059)	(0.059)	(0.059)
Financial leverage	ī 0.460	ī 0.467	ī 0.454	ī 0.533	ī 0.539	ī 0.531
	(0.958)	(0.959)	(0.962)	(0.958)	(0.960)	(0.962)
Return on assets	0.109	0.101	0.117	0.034	0.026	0.036
	(1.176)	(1.179)	(1.182)	(1.175)	(1.178)	(1.181)
Financial slack	ī 1.759***	ī 1.753***	ī 1.762***	ī 1.599***	ī 1.594***	ī 1.600***
	(0.453)	(0.454)	(0.453)	(0.451)	(0.452)	(0.451)
Stock run-up	ī 0.012***	ī 0.012***	ī 0.012***	ī 0.012***	ī 0.012***	ī 0.012***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Stock volatility	ī 0.166	ī 0.165	ī 0.166	ī 0.190	ī 0.190	ī 0.190
	(0.156)	(0.156)	(0.156)	(0.156)	(0.156)	(0.155)
Market run-up	0.013**	0.013**	0.013**	0.013*	0.013*	0.013*
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Market volatility	0.996***	0.982***	1.007***	1.040***	1.027***	1.043***
	(0.311)	(0.309)	(0.310)	(0.310)	(0.309)	(0.310)
Relative issue size	0.152	0.150	0.153	0.161	0.160	0.161
	(0.175)	(0.176)	(0.175)	(0.175)	(0.176)	(0.175)
Years-to-maturity(LN)	ī 1.403***	ī 1.394***	ī 1.408***	ī 1.336***	ī 1.329***	ī 1.338***
	(0.178)	(0.183)	(0.183)	(0.178)	(0.182)	(0.183)
Credit enhancer	1.889*	1.854*	1.905*	1.965*	1.934*	1.969*
	(1.081)	(1.084)	(1.085)	(1.059)	(1.062)	(1.061)
Call protection dummy	ī 0.380	ī 0.396	ī 0.372	ī 0.095	ī 0.109	ī 0.093
	(0.288)	(0.297)	(0.294)	(0.299)	(0.309)	(0.305)
Public offering dummy	1.041***	1.045***	1.036***	1.007***	1.011***	1.006***
	(0.214)	(0.215)	(0.217)	(0.214)	(0.214)	(0.216)

Table 4.2: (continued)

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	ī 0.140	ī 0.143	ī 0.137	ī 0.163	ī 0.166	ī 0.162
	(0.251)	(0.252)	(0.252)	(0.251)	(0.251)	(0.252)
Number of bookrunner(s)	ī 0.379***	ī 0.373**	ī 0.382***	ī 0.297**	ī 0.293**	ī 0.298**
	(0.145)	(0.145)	(0.146)	(0.144)	(0.145)	(0.145)
Domestic bookrunners		ī 0.077			ī 0.068	
		(0.186)			(0.186)	
Regional bookrunners			0.051			0.015
			(0.197)			(0.196)
Reputable bookrunners				ī 0.931***	ī 0.930***	ī 0.930***
				(0.207)	(0.207)	(0.206)
Constant	ī 3.184***	ī 3.064***	ī 3.248***	ī 4.359***	ī 4.253***	ī 4.378***
	(1.063)	(1.118)	(1.100)	(1.079)	(1.139)	(1.118)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.076	0.076	0.076	0.079	0.079	0.079
Observations	6,073	6,073	6,073	6,073	6,073	6,073

Table 4.3: Whole sample—Cross-sectional regression analysis (OLS) for the determinants of underwriting fees

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of underwriting fees on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in 30 countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.107***	ī 0.106***	ī 0.107***	ī 0.094***	ī 0.094***	ī 0.094***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Financial leverage	0.001	0.001	0.001	ī 0.002	ī 0.001	ī 0.002
	(0.093)	(0.093)	(0.093)	(0.092)	(0.092)	(0.092)
Return on assets	ī 0.223*	ī 0.222*	ī 0.222*	ī 0.223**	ī 0.222*	ī 0.223*
	(0.116)	(0.116)	(0.116)	(0.114)	(0.114)	(0.114)
Financial slack	ī 0.117	ī 0.118	ī 0.117	ī 0.080	ī 0.081	ī 0.080
	(0.083)	(0.083)	(0.083)	(0.081)	(0.081)	(0.081)
Stock run-up	ī 0.001**	ī 0.001**	ī 0.001**	ī 0.001**	ī 0.001**	ī 0.001**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Stock volatility	0.112***	0.112***	0.112***	0.106***	0.106***	0.106***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Market run-up	0.002	0.002*	0.002*	0.002	0.002	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Market volatility	ī 0.232***	ī 0.230***	ī 0.230***	ī 0.228***	ī 0.224***	ī 0.227***
	(0.068)	(0.068)	(0.068)	(0.067)	(0.068)	(0.068)
Relative issue size	ī 0.017	ī 0.017	ī 0.017	ī 0.014	ī 0.014	ī 0.014
	(0.035)	(0.036)	(0.035)	(0.035)	(0.036)	(0.035)
Years-to-maturity(LN)	0.168***	0.166***	0.167***	0.172***	0.169***	0.171***
	(0.044)	(0.045)	(0.045)	(0.044)	(0.045)	(0.045)
Credit enhancer	ī 0.007	ī 0.001	ī 0.004	0.006	0.015	0.007
	(0.233)	(0.233)	(0.232)	(0.235)	(0.236)	(0.235)
Call protection dummy	0.397***	0.399***	0.398***	0.436***	0.440***	0.437***
	(0.079)	(0.079)	(0.079)	(0.077)	(0.076)	(0.077)
Public offering dummy	0.069	0.069	0.068	0.058	0.058	0.058
	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)

Table 4.3: (continued)

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	ī 0.076	ī 0.078	ī 0.077	ī 0.073	ī 0.075	ī 0.073
	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)
Number of bookrunner(s)	0.096**	0.095**	0.095**	0.115***	0.113***	0.114***
	(0.039)	(0.039)	(0.039)	(0.041)	(0.041)	(0.041)
Domestic bookrunners		0.015			0.020	
		(0.038)			(0.038)	
Regional bookrunners			0.008			0.004
			(0.038)			(0.038)
Reputable bookrunners				ī 0.194***	ī 0.195***	ī 0.194***
				(0.042)	(0.043)	(0.042)
Constant	5.094***	5.082***	5.089***	4.885***	4.868***	4.883***
	(0.360)	(0.360)	(0.360)	(0.348)	(0.348)	(0.348)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.177	0.177	0.177	0.183	0.182	0.182
Observations	3,013	3,013	3,013	3,013	3,013	3,013

Table 4.4: Whole sample—Cross-sectional regression analysis (OLS) for the determinants of convertible bond offering yields

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of convertible bond offering yields on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in 30 countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.200***	ī 0.204***	ī 0.198***	ī 0.116**	ī 0.118**	ī 0.113**
	(0.053)	(0.053)	(0.053)	(0.054)	(0.054)	(0.054)
Financial leverage	ī 0.164	ī 0.175	ī 0.135	ī 0.239	ī 0.245	ī 0.210
	(0.373)	(0.374)	(0.372)	(0.373)	(0.373)	(0.372)
Return on assets	ī 0.213	ī 0.227	ī 0.180	ī 0.295	ī 0.301	ī 0.261
	(0.455)	(0.457)	(0.455)	(0.455)	(0.456)	(0.454)
Financial slack	ī 0.002	0.012	ī 0.019	0.203	0.209	0.186
	(0.343)	(0.345)	(0.344)	(0.346)	(0.347)	(0.346)
Stock run-up	ī 0.007***	ī 0.007***	ī 0.007***	ī 0.007***	ī 0.007***	ī 0.007***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Stock volatility	0.463***	0.465***	0.459***	0.426***	0.427***	0.422***
	(0.075)	(0.075)	(0.074)	(0.074)	(0.074)	(0.074)
Market run-up	0.002	0.002	0.003	0.002	0.002	0.002
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Market volatility	ī 1.605***	ī 1.633***	ī 1.553***	ī 1.562***	ī 1.577***	ī 1.509***
	(0.265)	(0.263)	(0.264)	(0.264)	(0.263)	(0.264)
Relative issue size	0.069	0.067	0.072	0.074	0.072	0.077
	(0.066)	(0.065)	(0.067)	(0.064)	(0.064)	(0.065)
Years-to-maturity(LN)	ī 0.296**	ī 0.278*	ī 0.324**	ī 0.206	ī 0.197	ī 0.234
	(0.147)	(0.152)	(0.151)	(0.144)	(0.149)	(0.149)
Credit enhancer	ī 1.803***	ī 1.861***	ī 1.724***	ī 1.705***	ī 1.735***	ī 1.623***
	(0.624)	(0.628)	(0.615)	(0.591)	(0.594)	(0.580)
Call protection dummy	ī 1.703***	ī 1.728***	ī 1.672***	ī 1.201***	ī 1.216***	ī 1.169***
	(0.335)	(0.333)	(0.335)	(0.335)	(0.333)	(0.335)
Public offering dummy	ī 0.000	0.014	ī 0.033	ī 0.076	ī 0.068	ī 0.110
	(0.201)	(0.201)	(0.203)	(0.199)	(0.199)	(0.201)

Table 4.4: (continued)

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	1.110***	1.102***	1.127***	1.090***	1.086***	1.107***
	(0.281)	(0.280)	(0.282)	(0.281)	(0.279)	(0.281)
Number of bookrunner(s)	ī 0.240***	ī 0.227***	ī 0.257***	ī 0.129*	ī 0.122	ī 0.147*
	(0.075)	(0.076)	(0.076)	(0.075)	(0.076)	(0.075)
Domestic bookrunners		ī 0.148			ī 0.076	
		(0.127)			(0.127)	
Regional bookrunners			0.243*			0.250**
			(0.126)			(0.125)
Reputable bookrunners				ī 1.337***	ī 1.332***	ī 1.338***
				(0.199)	(0.200)	(0.199)
Constant	12.944***	11.474***	11.448***	9.294***	9.313***	9.287***
	(0.927)	(0.955)	(0.958)	(1.003)	(1.000)	(1.003)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.144	0.144	0.144	0.155	0.155	0.155
Observations	4,732	4,732	4,732	4,732	4,732	4,732

Table 4.5: Whole sample—Switching regression model for the determinants of the convertible bond issuer CARs

This table presents the estimation results of the switching regression model for the determinants of convertible bond issuer CARs on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in 30 countries over the period 1984 to 2015. Panel A presents the coefficient estimates. The first-step regression of the switching regression models are based on the probit (Column 1 to 6) and recursive for bivariate probit (Column 7 to 10) regression specifications as shown in Table 1. The detailed definition of all variables are provided in Appendix A. Inverse Mills ratio 1, 2, 3, 4, 5 and 6 adjust for self-selection bias of domestic bookrunners, non-domestic bookrunners, regional bookrunners, non-regional bookrunners, reputable bookrunners and non-reputable bookrunners, respectively. Panel B presents the results expressed in percentages of the what-if analysis based on the switching regression model estimates. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Model

	1	2	3	4	5	6	7	8	9	10
VARIABLES	Domestic	Non-domestic	Regional	Non-regional	Reputable	Non-reputable	Dom & Rep	Non-dom & Non-rep	Reg & Rep	Non-reg & Non-rep
Firm size	ī 0.366***	ī 0.479***	ī 0.354***	ī 0.388***	0.284***	ī 0.652***	0.196**	ī 1.264***	0.214***	ī 1.224***
	(0.075)	(0.105)	(0.070)	(0.130)	(0.076)	(0.218)	(0.079)	(0.442)	(0.075)	(0.430)
Financial leverage	ī 1.144	1.059	ī 1.448	1.142	0.818	ī 2.358	ī 1.253*	1.671	ī 1.515**	1.296
	(1.155)	(1.277)	(1.092)	(1.396)	(0.604)	(1.695)	(0.697)	(3.158)	(0.686)	(2.840)
Return on assets	ī 0.635	ī 0.226	ī 0.976	ī 0.962	3.220**	ī 1.684	ī 0.247	ī 0.758	ī 0.373	ī 8.105**
	(1.407)	(1.285)	(1.333)	(2.292)	(1.270)	(1.981)	(1.693)	(2.060)	(1.643)	(3.727)
Financial slack	ī 1.438***	ī 1.249	ī 1.489***	ī 1.211	ī 0.185	ī 2.421*	ī 0.340	ī 2.177	ī 0.324	ī 1.688
	(0.525)	(0.901)	(0.509)	(1.000)	(0.458)	(1.267)	(0.455)	(3.692)	(0.451)	(3.403)
Stock run-up	ī 0.013***	ī 0.014***	ī 0.014***	ī 0.011***	ī 0.008***	ī 0.013***	ī 0.009***	ī 0.014*	ī 0.009***	0.002
	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.007)	(0.003)	(0.010)
Stock volatility	ī 0.059	ī 0.353***	ī 0.046	ī 0.417***	ī 0.837***	0.200	ī 0.361**	ī 0.195	ī 0.350**	ī 0.550**
	(0.203)	(0.125)	(0.189)	(0.148)	(0.135)	(0.237)	(0.179)	(0.178)	(0.169)	(0.229)
Market run-up	0.015*	0.001	0.010	0.003	0.016**	ī 0.002	0.009	ī 0.007	0.007	0.002
	(0.009)	(0.009)	(0.009)	(0.010)	(0.007)	(0.016)	(0.007)	(0.020)	(0.007)	(0.024)
Market volatility	0.658	ī 0.252	ī 0.036	0.377	1.932***	ī 0.141	1.058***	ī 1.740*	0.781**	ī 1.453
	(0.445)	(0.480)	(0.476)	(0.567)	(0.319)	(0.726)	(0.373)	(0.968)	(0.390)	(1.231)
Relative issue size	0.097	ī 0.444	0.085	ī 0.581**	0.376*	ī 0.084	0.083	ī 0.502	0.090	ī 1.634*
	(0.172)	(0.277)	(0.163)	(0.290)	(0.194)	(0.220)	(0.238)	(0.972)	(0.229)	(0.933)
Years-to-maturity(LN)	ī 0.722***	ī 1.140***	ī 0.569**	ī 1.176***	ī 0.699***	ī 1.134**	ī 0.574***	ī 0.281	ī 0.468**	0.029
	(0.263)	(0.304)	(0.282)	(0.363)	(0.182)	(0.505)	(0.196)	(0.808)	(0.219)	(1.075)
Credit enhancer	ī 0.974	0.612	ī 1.329	1.205	ī	ī	ī 0.167	ī	0.323	ī
	(1.920)	(1.196)	(1.312)	(1.488)			(1.007)		(0.979)	
Call protection dummy	ī 1.483***	ī 0.377	ī 1.399***	ī 0.778	0.234	ī 0.288	1.217**	ī 1.456	1.361***	ī 4.228**
	(0.385)	(0.831)	(0.401)	(0.819)	(0.409)	(0.695)	(0.493)	(1.979)	(0.482)	(2.067)

Table 4.5: (continued)

	Panel A: Model									
	1	2	3	4	5	6	7	8	9	10
VARIABLES	Domestic	Non-domestic	Regional	Non-regional	Reputable	Non-reputable	Dom & Rep	Non-dom & Non-rep	Reg & Rep	Non-reg & Non-rep
Public offering dummy	1.510***	0.842**	1.809***	0.828**	0.235	1.896***	0.871***	1.911**	1.066***	2.454**
	(0.298)	(0.332)	(0.307)	(0.379)	(0.220)	(0.504)	(0.218)	(0.789)	(0.232)	(1.043)
S&P rated bond dummy	ī 0.411	0.401	ī 0.643**	0.588	ī 0.104	ī 0.961	ī 0.388	ī 0.672	ī 0.474*	ī 0.939
	(0.327)	(0.421)	(0.317)	(0.469)	(0.265)	(0.619)	(0.264)	(1.321)	(0.265)	(1.451)
Number of bookrunner(s)	ī 0.089	ī 0.023	0.022	0.106	0.226	ī 1.225*	0.400**	0.900	0.468***	3.448
	(0.184)	(0.233)	(0.188)	(0.345)	(0.156)	(0.727)	(0.167)	(1.870)	(0.178)	(2.320)
Inverse Mills 1	4.011***						1.668***			
	(0.638)						(0.318)			
Inverse Mills 2		1.340***						2.471***		
		(0.404)						(0.941)		
Inverse Mills 3			5.016***						2.183***	
			(0.928)						(0.529)	
Inverse Mills 4				1.375**						3.950**
				(0.602)						(1.669)
Inverse Mills 5					2.234***		3.693***		3.785***	
					(0.532)		(0.537)		(0.522)	
Inverse Mills 6						ī 0.872		ī 2.314		ī 1.309
						(1.022)		(1.693)		(1.602)
Constant	1.241	9.961***	2.319	5.623*	1.185	ī 2.765	ī 37.621***	28.226***	ī 32.711***	18.039**
	(5.777)	(3.330)	(1.870)	(3.411)	(2.126)	(6.532)	(4.774)	(9.658)	(4.068)	(8.137)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared/Adjusted R-squared	0.092	0.086	0.087	0.089	0.148	0.039	0.101	0.034	0.098	0.080
Observations	4,477	1,586	4,757	1,295	4,161	1,892	5,644	425	5,760	309

	Panel B: What-if Analysis									
	Domestic	Nondomestic	Regional	Non-regional	Reputable	Non-reputable	Dom & Rep	Non-dom & Non-rep	Reg & Rep	Non-reg & Non-rep
Actual CAR	ī 1.19***	ī 1.25***	ī 1.18***	ī 1.28***	ī 1.75***	0.01	ī 1.28	ī 0.17***	ī 1.25	ī 0.21***
Hypothetical CAR	ī 1.65***	ī 0.17***	ī 1.74***	ī 0.37***	ī 1.37***	ī 1.22***	0.11**	ī 0.24**	1.01***	ī 0.32***
Improvement	ī 0.46***	1.08***	ī 0.56***	0.91***	0.38***	ī 1.23***	1.39***	ī 0.07	2.26***	ī 0.11

Table 4.6: Whole sample—Switching regression model for the determinants of underwriting fees

This table presents the estimation results of the switching regression model for the determinants of the underwriting fees on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in 30 countries over the period 1984 to 2015. Panel A presents the coefficient estimates. The first-step regression of the switching regression models are based on the probit (Column 1 to 6) and recursive for bivariate probit (Column 7 to 10) regression specifications as shown in Table 1. The detailed definition of all variables are provided in Appendix A. Inverse Mills ratio 1, 2, 3, 4, 5 and 6 adjust for self-selection bias of domestic bookrunners, non-domestic bookrunners, regional bookrunners, non-regional bookrunners, reputable bookrunners and non-reputable bookrunners, respectively. Panel B presents the results expressed in percentages of the what-if analysis based on the switching regression model estimates. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	Panel A: Model									
	1	2	3	4	5	6	7	8	9	10
VARIABLES	Domestic	Non-domestic	Regional	Non-regional	Reputable	Non-reputable	Dom & Rep	Non-dom & Non-rep	Reg & Rep	Non-reg & Non-rep
Firm size	ī 0.105***	ī 0.026	ī 0.094***	ī 0.048*	ī 0.047***	ī 0.173***	ī 0.094***	0.176**	ī 0.093***	0.094
	(0.017)	(0.022)	(0.016)	(0.025)	(0.013)	(0.051)	(0.016)	(0.077)	(0.015)	(0.091)
Financial leverage	0.040	0.020	0.085	0.063	0.077	ī 0.168	0.119	ī 0.800	0.168	0.309
	(0.105)	(0.177)	(0.106)	(0.166)	(0.087)	(0.197)	(0.106)	(0.500)	(0.105)	(0.474)
Return on assets	ī 0.135	ī 1.101***	ī 0.101	ī 0.668	ī 0.419**	ī 0.347	ī 0.333*	ī 1.007	ī 0.327*	2.351**
	(0.126)	(0.400)	(0.129)	(0.491)	(0.193)	(0.235)	(0.172)	(1.283)	(0.178)	(0.990)
Financial slack	ī 0.190**	ī 0.180	ī 0.189**	ī 0.082	ī 0.013	ī 0.545*	ī 0.125	ī 1.072**	ī 0.138*	ī 0.267
	(0.092)	(0.221)	(0.093)	(0.199)	(0.068)	(0.278)	(0.083)	(0.506)	(0.083)	(0.510)
Stock run-up	ī 0.001	ī 0.001	ī 0.001*	ī 0.001*	ī 0.000	ī 0.002	ī 0.001*	ī 0.003	ī 0.001*	ī 0.008***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
Stock volatility	0.115***	0.035	0.091***	0.100**	0.087***	0.084**	0.114***	ī 0.036	0.092***	0.234***
	(0.024)	(0.046)	(0.026)	(0.039)	(0.021)	(0.039)	(0.022)	(0.111)	(0.023)	(0.060)
Market run-up	0.005***	0.001	0.005***	0.002	0.002	ī 0.001	0.003**	0.002	0.003**	0.016***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.003)	(0.001)	(0.005)	(0.001)	(0.005)
Market volatility	ī 0.321***	0.132	ī 0.159	0.075	ī 0.146**	ī 0.355**	ī 0.209***	0.548**	ī 0.103	ī 0.188
	(0.100)	(0.094)	(0.099)	(0.098)	(0.064)	(0.181)	(0.075)	(0.236)	(0.078)	(0.242)
Relative issue size	ī 0.016	0.201*	ī 0.002	0.224**	ī 0.037**	0.118	ī 0.025	1.954**	ī 0.014	2.337***
	(0.021)	(0.108)	(0.022)	(0.096)	(0.017)	(0.076)	(0.024)	(0.765)	(0.024)	(0.498)
Years-to-maturity(LN)	ī 0.038	0.309***	ī 0.048	0.235***	0.074*	0.414***	0.099**	0.373	0.085*	ī 0.184
	(0.058)	(0.070)	(0.060)	(0.064)	(0.044)	(0.121)	(0.046)	(0.256)	(0.048)	(0.172)
Credit enhancer	ī 0.003	ī 0.028	0.714	ī 0.138	ī	ī	0.258	ī	0.314	ī
	(0.144)	(0.281)	(0.584)	(0.283)			(0.249)		(0.253)	
Call protection dummy	0.607***	0.129	0.654***	0.067	0.349***	0.488***	0.489***	1.054**	0.514***	ī 0.256
	(0.088)	(0.151)	(0.089)	(0.146)	(0.073)	(0.170)	(0.094)	(0.434)	(0.093)	(0.360)

Table 4.6: (continued)

Panel A: Model

	1	2	3	4	5	6	7	8	9	10
VARIABLES	Domestic	Non-domestic	Regional	Non-regional	Reputable	Non-reputable	Dom & Rep	Non-dom & Non-rep	Reg & Rep	Non-reg & Non-rep
Public offering dummy	ī 0.090	0.157**	ī 0.187**	0.184**	0.078**	ī 0.166	0.039	0.009	ī 0.045	0.357*
	(0.066)	(0.078)	(0.074)	(0.076)	(0.039)	(0.158)	(0.049)	(0.260)	(0.055)	(0.192)
S&P rated bond dummy	ī 0.092	ī 0.054	ī 0.088	ī 0.083	ī 0.087*	ī 0.034	ī 0.070	ī 0.104	ī 0.054	ī 0.458*
	(0.063)	(0.078)	(0.061)	(0.086)	(0.050)	(0.132)	(0.051)	(0.263)	(0.052)	(0.270)
Number of bookrunner(s)	0.079*	ī 0.285***	0.035	ī 0.203*	ī 0.022	1.234**	0.092**	0.027	0.064	ī 0.316
	(0.043)	(0.106)	(0.042)	(0.110)	(0.034)	(0.540)	(0.042)	(0.559)	(0.041)	(0.424)
Inverse Mills 1	ī 0.661***						ī 0.205***			
	(0.128)						(0.063)			
Inverse Mills 2		ī 0.097						ī 0.020		
		(0.098)						(0.248)		
Inverse Mills 3			ī 0.936***						ī 0.463***	
			(0.196)						(0.100)	
Inverse Mills 4				ī 0.123						0.004
				(0.118)						(0.325)
Inverse Mills 5					ī 0.139		0.073		0.038	
					(0.097)		(0.095)		(0.092)	
Inverse Mills 6						0.316*		0.197		ī 0.240
						(0.186)		(0.238)		(0.225)
Constant	5.598***	ī 0.089	6.162***	1.705	1.446***	4.769***	5.231***	ī 0.157	5.443***	5.639***
	(0.374)	(0.467)	(0.463)	(1.603)	(0.479)	(0.741)	(0.455)	(1.590)	(0.463)	(1.882)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared/Adjusted R-squared	0.207	0.245	0.185	0.389	0.206	0.244	0.181	0.435	0.171	0.725
Observations	2,215	794	2,348	652	2,064	937	2,791	221	2,850	162

Panel B: What-if Analysis

	Domestic	Non-domestic	Regional	Non-regional	Reputable	Non-reputable	Dom & Rep	Non-dom & Non-rep	Reg & Rep	Non-reg & Non-rep
Actual Fees	2.30***	2.31***	2.31***	2.26***	2.31***	2.51***	2.26***	2.51***	2.50***	2.46***
Hypothetical Fees	2.34***	2.20***	2.36***	2.23***	2.52***	2.28***	2.41***	2.51***	3.37***	2.46***
Improvement	0.04*	ī 0.11***	0.05**	ī 0.03	0.21***	ī 0.23***	0.15***	0.00	0.87***	0.00

Table 4.7: Whole sample—Switching regression model for the determinants of convertible bond offering yields

This table presents the estimation results of the switching regression model for the determinants of the convertible bond offering yields on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in 30 countries over the period 1984 to 2015. Panel A presents the coefficient estimates. The first-step regression of the switching regression models are based on the probit (Column 1 to 6) and recursive for bivariate probit (Column 7 to 10) regression specifications as shown in Table 1. The detailed definition of all variables are provided in Appendix A. Inverse Mills ratio 1, 2, 3, 4, 5 and 6 adjust for self-selection bias of domestic bookrunners, non-domestic bookrunners, regional bookrunners, non-regional bookrunners, reputable bookrunners and non-reputable bookrunners, respectively. Panel B presents the results expressed in percentages of the what-if analysis based on the switching regression model estimates. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Model

	1	2	3	4	5	6	7	8	9	10
VARIABLES	Domestic	Non-domestic	Regional	Non-regional	Reputable	Non-reputable	Dom & Rep	Non-dom & Non-rep	Reg & Rep	Non-reg & Non-rep
Firm size	ī 0.248***	ī 0.091	ī 0.237***	ī 0.003	0.119*	ī 0.018	ī 0.162**	ī 0.396*	ī 0.112	ī 0.236
	(0.073)	(0.076)	(0.065)	(0.091)	(0.064)	(0.195)	(0.073)	(0.220)	(0.070)	(0.254)
Financial leverage	ī 0.036	ī 1.009	ī 0.138	ī 0.357	ī 0.321	ī 0.960	ī 0.122	ī 0.905	ī 0.186	ī 2.263
	(0.434)	(0.663)	(0.415)	(0.513)	(0.410)	(0.625)	(0.425)	(1.278)	(0.418)	(1.400)
Return on assets	ī 0.065	ī 2.115	ī 0.165	ī 1.748**	0.619	ī 1.121	ī 0.248	ī 0.720	ī 0.035	ī 2.070
	(0.525)	(1.330)	(0.501)	(0.763)	(0.975)	(0.749)	(0.598)	(1.313)	(0.570)	(1.713)
Financial slack	ī 0.095	1.033	ī 0.013	0.090	0.406	0.787	0.154	4.201	0.154	ī 0.271
	(0.395)	(0.806)	(0.385)	(0.532)	(0.441)	(0.618)	(0.393)	(2.936)	(0.396)	(1.847)
Stock run-up	ī 0.009***	ī 0.004**	ī 0.009***	ī 0.002	ī 0.003	ī 0.009**	ī 0.007***	ī 0.003	ī 0.006***	ī 0.001
	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.004)	(0.002)	(0.004)	(0.002)	(0.004)
Stock volatility	0.481***	0.341***	0.479***	0.224**	0.484***	0.239**	0.453***	0.251	0.442***	0.010
	(0.095)	(0.124)	(0.090)	(0.095)	(0.107)	(0.104)	(0.086)	(0.165)	(0.085)	(0.142)
Market run-up	ī 0.002	0.002	ī 0.002	0.000	0.001	ī 0.001	0.002	ī 0.021**	0.002	ī 0.009
	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.009)	(0.004)	(0.010)	(0.004)	(0.010)
Market volatility	ī 2.290***	ī 0.897***	ī 2.231***	ī 0.461	ī 1.704***	ī 0.618	ī 1.877***	ī 0.337	ī 1.602***	ī 0.319
	(0.459)	(0.280)	(0.450)	(0.328)	(0.378)	(0.474)	(0.335)	(0.771)	(0.360)	(0.843)
Relative issue size	0.044	0.409*	0.037	0.417*	0.127	ī 0.028	0.045	0.475	0.084	ī 0.737
	(0.058)	(0.245)	(0.059)	(0.253)	(0.141)	(0.077)	(0.071)	(0.537)	(0.076)	(0.532)
Years-to-maturity(LN)	ī 0.657***	0.559***	ī 0.605**	0.517***	0.065	ī 0.138	ī 0.199	1.225*	ī 0.345*	1.470**
	(0.236)	(0.188)	(0.237)	(0.192)	(0.126)	(0.391)	(0.187)	(0.628)	(0.204)	(0.586)
Credit enhancer	ī 1.441	ī 2.282***	ī 1.140	ī 1.900**	ī	ī	ī 2.034***	ī	ī 1.577***	ī
	(0.955)	(0.635)	(0.713)	(0.773)			(0.601)		(0.601)	
Call protection dummy	ī 1.711***	ī 1.397***	ī 1.615***	ī 1.398***	ī 1.439***	0.612	ī 1.663***	3.056	ī 1.313***	ī 0.279
	(0.349)	(0.510)	(0.349)	(0.389)	(0.406)	(0.541)	(0.400)	(3.040)	(0.392)	(1.280)

Table 4.7: (continued)

Panel A: Model										
	1	2	3	4	5	6	7	8	9	10
VARIABLES	Domestic	Non-domestic	Regional	Non-regional	Reputable	Non-reputable	Dom & Rep	Non-dom & Non-rep	Reg & Rep	Non-reg & Non-rep
Public offering dummy	ī 0.402	0.671***	ī 0.393	0.709***	ī 0.254	ī 0.314	ī 0.016	0.108	ī 0.124	0.100
	(0.299)	(0.207)	(0.281)	(0.189)	(0.191)	(0.515)	(0.210)	(0.502)	(0.203)	(0.530)
S&P rated bond dummy	1.211***	0.681	1.307***	ī 0.141	1.153***	1.218*	1.007***	3.736*	1.139***	0.310
	(0.317)	(0.570)	(0.337)	(0.284)	(0.299)	(0.707)	(0.279)	(2.135)	(0.291)	(0.861)
Number of bookrunner(s)	ī 0.057	ī 0.553***	ī 0.129	ī 0.460***	ī 0.086	0.314	ī 0.065	ī 0.754	ī 0.161	ī 1.331
	(0.106)	(0.119)	(0.112)	(0.151)	(0.098)	(0.468)	(0.097)	(1.062)	(0.108)	(1.506)
Inverse Mills 1	0.188						0.258			
	(0.463)						(0.271)			
Inverse Mills 2		0.713**						0.199		
		(0.278)						(0.758)		
Inverse Mills 3			0.332						ī 0.314	
			(0.697)						(0.437)	
Inverse Mills 4				0.021						ī 0.443
				(0.287)						(0.885)
Inverse Mills 5					1.202**		0.408		0.287	
					(0.564)		(0.358)		(0.351)	
Inverse Mills 6						1.819**		ī 0.576		ī 0.531
						(0.788)		(0.890)		(1.052)
Constant	7.157***	12.818***	10.712***	4.995***	6.299***	10.435*	1.399	4.688	2.156	20.184***
	(1.621)	(1.968)	(1.518)	(1.664)	(1.770)	(5.909)	(3.116)	(7.089)	(3.057)	(4.576)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared/Adjusted R-squared	0.152	0.178	0.147	0.250	0.147	0.185	0.138	0.343	0.140	0.478
Observations	3,478	1,247	3,719	999	3,493	1,225	4,387	341	4,485	243

Panel B: What-if Analysis										
	Domestic	Non-domestic	Regional	Non-regional	Reputable	Non-reputable	Dom & Rep	Non-dom & Non-rep	Reg & Rep	Non-reg & Non-rep
Actual CARs	4.09***	3.73***	4.20***	3.37***	3.38***	5.77***	2.08***	4.92***	3.98***	4.32***
Hypothetical CARs	4.00***	3.57***	4.08***	3.61***	4.62***	4.88***	5.06***	4.25***	4.89***	4.09***
Improvement	ī 0.09	ī 0.16	ī 0.12	0.24**	1.24***	ī 0.89***	2.98***	ī 0.67***	0.91***	ī 0.23

Table 4.8: US & Canada sample—Cross-sectional regression analysis (OLS) for the determinants of convertible bond issuer CARs

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of convertible bond issuer CARs on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in US and Canada over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.229	ī 0.223	ī 0.230	ī 0.141	ī 0.140	ī 0.141
	(0.185)	(0.185)	(0.185)	(0.187)	(0.187)	(0.187)
Financial leverage	0.072	0.121	0.076	0.051	0.100	0.055
	(1.599)	(1.609)	(1.602)	(1.599)	(1.609)	(1.602)
Return on assets	0.767	0.815	0.767	0.744	0.791	0.743
	(1.812)	(1.823)	(1.815)	(1.812)	(1.823)	(1.815)
Financial slack	ī 1.175*	ī 1.120*	ī 1.136*	ī 1.076*	ī 1.029	ī 1.037
	(0.659)	(0.665)	(0.663)	(0.653)	(0.659)	(0.657)
Stock run-up	ī 0.006	ī 0.006	ī 0.006	ī 0.006	ī 0.006	ī 0.006
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Stock volatility	ī 0.087	ī 0.080	ī 0.083	ī 0.092	ī 0.085	ī 0.089
	(0.221)	(0.221)	(0.221)	(0.221)	(0.221)	(0.221)
Market run-up	ī 0.021	ī 0.019	ī 0.020	ī 0.021	ī 0.019	ī 0.020
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Market volatility	3.546	3.620	3.597	3.520	3.593	3.571
	(2.648)	(2.652)	(2.650)	(2.646)	(2.650)	(2.648)
Relative issue size	0.389**	0.400**	0.394**	0.410**	0.419**	0.414**
	(0.172)	(0.174)	(0.173)	(0.169)	(0.171)	(0.170)
Years-to-maturity(LN)	ī 0.812*	ī 0.792*	ī 0.789*	ī 0.775*	ī 0.758*	ī 0.751*
	(0.421)	(0.423)	(0.423)	(0.419)	(0.421)	(0.421)
Credit enhancer	ī	ī	ī	ī	ī	ī
Call protection dummy	ī 0.085	ī 0.139	ī 0.128	ī 0.035	ī 0.090	ī 0.078
	(0.656)	(0.659)	(0.653)	(0.659)	(0.662)	(0.656)
Public offering dummy	ī 0.071	ī 0.049	ī 0.050	ī 0.099	ī 0.076	ī 0.078
	(0.484)	(0.483)	(0.485)	(0.483)	(0.482)	(0.483)

Table 4.8: (continued)

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	1.034**	1.101**	1.085**	1.024**	1.089**	1.075**
	(0.449)	(0.446)	(0.448)	(0.448)	(0.445)	(0.447)
Number of bookrunner(s)	0.192	0.272	0.257	0.236	0.311	0.301
	(0.288)	(0.290)	(0.291)	(0.288)	(0.290)	(0.291)
Domestic bookrunners		ī 1.178**			ī 1.139**	
		(0.500)			(0.501)	
Regional bookrunners			ī 0.987**			ī 0.992**
			(0.496)			(0.496)
Reputable bookrunners				ī 0.852*	ī 0.798*	ī 0.856*
				(0.479)	(0.481)	(0.480)
Constant	ī 15.941**	ī 15.492**	ī 15.385**	ī 16.772**	ī 16.286**	ī 16.217**
	(7.485)	(7.516)	(7.523)	(7.506)	(7.541)	(7.546)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.051	0.053	0.052	0.052	0.054	0.053
Observations	1,909	1,909	1,909	1,909	1,909	1,909

Table 4.9: US & Canada sample—Cross-sectional regression analysis (OLS) for the determinants of underwriting fees

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of underwriting fees on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in US and Canada over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.332***	ī 0.332***	ī 0.332***	ī 0.300***	ī 0.300***	ī 0.301***
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Financial leverage	0.155	0.152	0.157	0.150	0.146	0.152
	(0.101)	(0.101)	(0.101)	(0.097)	(0.097)	(0.096)
Return on assets	0.126	0.124	0.130	0.122	0.118	0.125
	(0.118)	(0.118)	(0.117)	(0.112)	(0.112)	(0.112)
Financial slack	ī 0.351***	ī 0.352***	ī 0.349***	ī 0.306***	ī 0.306***	ī 0.304***
	(0.110)	(0.110)	(0.110)	(0.106)	(0.105)	(0.106)
Stock run-up	ī 0.003***	ī 0.003***	ī 0.003***	ī 0.002***	ī 0.002***	ī 0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Stock volatility	0.108***	0.108***	0.107***	0.105***	0.105***	0.104***
	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)
Market run-up	ī 0.000	ī 0.000	ī 0.000	ī 0.000	ī 0.000	ī 0.000
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Market volatility	ī 0.464*	ī 0.468*	ī 0.455*	ī 0.494*	ī 0.500*	ī 0.485*
	(0.265)	(0.266)	(0.265)	(0.264)	(0.264)	(0.264)
Relative issue size	ī 0.095***	ī 0.095***	ī 0.094***	ī 0.084***	ī 0.085***	ī 0.083***
	(0.027)	(0.027)	(0.027)	(0.024)	(0.024)	(0.024)
Years-to-maturity(LN)	ī 0.289***	ī 0.291***	ī 0.284***	ī 0.275***	ī 0.277***	ī 0.269***
	(0.061)	(0.061)	(0.061)	(0.060)	(0.060)	(0.060)
Credit enhancer	ī	ī	ī	ī	ī	ī
Call protection dummy	0.032	0.035	0.025	0.052	0.056	0.044
	(0.084)	(0.085)	(0.084)	(0.084)	(0.084)	(0.084)
Public offering dummy	ī 0.001	ī 0.001	0.000	ī 0.011	ī 0.013	ī 0.010
	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)

Table 4.9: (continued)

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	ī 0.070	ī 0.073	ī 0.065	ī 0.078	ī 0.081	ī 0.073
	(0.077)	(0.077)	(0.078)	(0.077)	(0.077)	(0.077)
Number of bookrunner(s)	ī 0.006	ī 0.008	ī 0.001	0.008	0.006	0.013
	(0.041)	(0.041)	(0.041)	(0.040)	(0.041)	(0.041)
Domestic bookrunners		0.041			0.057	
		(0.084)			(0.085)	
Regional bookrunners			ī 0.111			ī 0.110
			(0.086)			(0.087)
Reputable bookrunners				ī 0.313***	ī 0.315***	ī 0.313***
				(0.070)	(0.070)	(0.070)
Constant	9.326***	9.336***	9.308***	8.979***	8.990***	8.962***
	(0.867)	(0.867)	(0.865)	(0.864)	(0.864)	(0.862)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.441	0.441	0.442	0.451	0.451	0.451
Observations	1,152	1,152	1,152	1,152	1,152	1,152

Table 4.10: US & Canada sample —Cross-sectional regression analysis (OLS) for the determinants of convertible bond offering yields

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of convertible bond offering yields on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in US and Canada over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.278**	ī 0.282**	ī 0.276**	ī 0.187	ī 0.188	ī 0.186
	(0.117)	(0.117)	(0.117)	(0.123)	(0.122)	(0.122)
Financial leverage	ī 0.500	ī 0.536	ī 0.519	ī 0.538	ī 0.576	ī 0.555
	(0.598)	(0.598)	(0.598)	(0.602)	(0.602)	(0.602)
Return on assets	ī 0.776	ī 0.813	ī 0.794	ī 0.821	ī 0.861	ī 0.839
	(0.714)	(0.714)	(0.714)	(0.719)	(0.719)	(0.719)
Financial slack	ī 0.059	ī 0.099	ī 0.122	0.044	0.005	ī 0.021
	(0.424)	(0.424)	(0.423)	(0.424)	(0.424)	(0.423)
Stock run-up	ī 0.009***	ī 0.009***	ī 0.009***	ī 0.009***	ī 0.009***	ī 0.009***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Stock volatility	0.291***	0.287***	0.286***	0.281***	0.277***	0.276***
	(0.089)	(0.089)	(0.088)	(0.090)	(0.089)	(0.089)
Market run-up	ī 0.004	ī 0.005	ī 0.004	ī 0.004	ī 0.005	ī 0.004
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Market volatility	0.265	0.232	0.172	0.184	0.147	0.093
	(0.578)	(0.580)	(0.580)	(0.585)	(0.587)	(0.587)
Relative issue size	ī 0.139**	ī 0.148**	ī 0.149**	ī 0.123**	ī 0.131**	ī 0.133**
	(0.066)	(0.066)	(0.067)	(0.061)	(0.061)	(0.062)
Years-to-maturity(LN)	ī 0.952***	ī 0.957***	ī 0.970***	ī 0.920***	ī 0.924***	ī 0.939***
	(0.240)	(0.240)	(0.240)	(0.237)	(0.236)	(0.237)
Credit enhancer	ī	ī	ī	ī	ī	ī
Call protection dummy	ī 0.486	ī 0.437	ī 0.394	ī 0.387	ī 0.333	ī 0.298
	(0.361)	(0.357)	(0.360)	(0.380)	(0.377)	(0.380)
Public offering dummy	ī 1.076**	ī 1.096**	ī 1.097**	ī 1.089**	ī 1.111**	ī 1.110**
	(0.476)	(0.477)	(0.475)	(0.475)	(0.475)	(0.474)

Table 4.10: (continued)

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	ī 0.324	ī 0.364	ī 0.397	ī 0.344	ī 0.388	ī 0.417
	(0.459)	(0.468)	(0.459)	(0.460)	(0.469)	(0.460)
Number of bookrunner(s)	ī 0.116	ī 0.162	ī 0.196*	ī 0.068	ī 0.115	ī 0.148
	(0.105)	(0.112)	(0.110)	(0.106)	(0.112)	(0.109)
Domestic bookrunners		0.718**			0.755**	
		(0.307)			(0.307)	
Regional bookrunners			1.291***			1.281***
			(0.275)			(0.274)
Reputable bookrunners				ī 0.905**	ī 0.934**	ī 0.892**
				(0.438)	(0.439)	(0.435)
Constant	12.398***	11.957***	11.568***	11.559***	11.068***	10.748***
	(1.970)	(1.972)	(1.961)	(1.926)	(1.926)	(1.925)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.155	0.157	0.161	0.158	0.160	0.163
Observations	1,694	1,694	1,694	1,694	1,694	1,694

Table 4.11: Japan sample—Cross-sectional regression analysis (OLS) for the determinants of convertible bond issuer CARs

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of convertible bond issuer CARs on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in Japan over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.148*	ī 0.134*	ī 0.134*	ī 0.155*	ī 0.141*	ī 0.141*
	(0.080)	(0.081)	(0.081)	(0.080)	(0.081)	(0.081)
Financial leverage	ī 0.726	ī 0.692	ī 0.692	ī 0.687	ī 0.658	ī 0.658
	(0.730)	(0.731)	(0.731)	(0.737)	(0.738)	(0.738)
Return on assets	3.456	2.839	2.839	3.559	2.948	2.948
	(5.056)	(5.049)	(5.049)	(5.083)	(5.075)	(5.075)
Financial slack	ī 0.088	ī 0.048	ī 0.048	ī 0.106	ī 0.065	ī 0.065
	(0.636)	(0.640)	(0.640)	(0.636)	(0.640)	(0.640)
Stock run-up	ī 0.017***	ī 0.017***	ī 0.017***	ī 0.017***	ī 0.017***	ī 0.017***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Stock volatility	0.295	0.284	0.284	0.297	0.286	0.286
	(0.228)	(0.228)	(0.228)	(0.228)	(0.228)	(0.228)
Market run-up	0.030***	0.030***	0.030***	0.030***	0.030***	0.030***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Market volatility	0.289	0.317	0.317	0.285	0.313	0.313
	(0.504)	(0.506)	(0.506)	(0.504)	(0.507)	(0.507)
Relative issue size	ī 2.167***	ī 2.049***	ī 2.049***	ī 2.201***	ī 2.082***	ī 2.082***
	(0.710)	(0.709)	(0.709)	(0.713)	(0.713)	(0.713)
Years-to-maturity(LN)	ī 0.590*	ī 0.741**	ī 0.741**	ī 0.600*	ī 0.746**	ī 0.746**
	(0.324)	(0.351)	(0.351)	(0.325)	(0.351)	(0.351)
Credit enhancer	1.108	1.298	1.298	1.065	1.254	1.254
	(1.349)	(1.407)	(1.407)	(1.352)	(1.408)	(1.408)
Call protection dummy	ī 0.189	ī 0.190	ī 0.190	ī 0.237	ī 0.233	ī 0.233
	(0.647)	(0.640)	(0.640)	(0.650)	(0.643)	(0.643)
Public offering dummy	0.732**	0.645**	0.645**	0.695**	0.614**	0.614**
	(0.303)	(0.310)	(0.310)	(0.301)	(0.307)	(0.307)

Table 4.11: (continued)

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	0.868	0.924	0.924	0.853	0.908	0.908
	(0.695)	(0.685)	(0.685)	(0.693)	(0.683)	(0.683)
Number of bookrunner(s)	ī 1.108**	ī 1.119**	ī 1.119**	ī 1.143**	ī 1.149**	ī 1.149**
	(0.538)	(0.533)	(0.533)	(0.539)	(0.534)	(0.534)
Domestic bookrunners		0.474			0.462	
		(0.315)			(0.315)	
Regional bookrunners			0.474			0.462
			(0.315)			(0.315)
Reputable bookrunners				0.264	0.239	0.239
				(0.320)	(0.319)	(0.319)
Constant	ī 4.103**	ī 4.247**	ī 4.247**	ī 4.088**	ī 4.230**	ī 4.230**
	(1.953)	(1.889)	(1.889)	(1.910)	(1.856)	(1.856)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.100	0.101	0.101	0.100	0.101	0.101
Observations	1,907	1,907	1,907	1,907	1,907	1,907

Table 4.12: Japan sample—Cross-sectional regression analysis (OLS) for the determinants of underwriting fees

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of underwriting fees on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in Japan over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	0.003	0.003	0.003	0.005	0.005	0.005
	(0.007)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Financial leverage	0.117**	0.124**	0.124**	0.108*	0.115**	0.115**
	(0.057)	(0.057)	(0.057)	(0.056)	(0.056)	(0.056)
Return on assets	0.082	ī 0.012	ī 0.012	0.047	ī 0.046	ī 0.046
	(0.297)	(0.299)	(0.299)	(0.295)	(0.298)	(0.298)
Financial slack	0.017	0.022	0.022	0.033	0.039	0.039
	(0.056)	(0.054)	(0.054)	(0.057)	(0.054)	(0.054)
Stock run-up	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Stock volatility	0.017	0.013	0.013	0.016	0.012	0.012
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Market run-up	0.000	0.000	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Market volatility	0.030	0.038	0.038	0.033	0.040	0.040
	(0.052)	(0.052)	(0.052)	(0.052)	(0.051)	(0.051)
Relative issue size	ī 0.045	ī 0.031	ī 0.031	ī 0.033	ī 0.019	ī 0.019
	(0.034)	(0.035)	(0.035)	(0.035)	(0.036)	(0.036)
Years-to-maturity(LN)	0.314***	0.301***	0.301***	0.315***	0.302***	0.302***
	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)
Credit enhancer	0.084	0.111	0.111	0.091	0.118	0.118
	(0.161)	(0.172)	(0.172)	(0.167)	(0.178)	(0.178)
Call protection dummy	0.006	0.004	0.004	0.020	0.018	0.018
	(0.044)	(0.043)	(0.043)	(0.043)	(0.043)	(0.043)
Public offering dummy	0.163***	0.170***	0.170***	0.170***	0.177***	0.177***
	(0.026)	(0.026)	(0.026)	(0.025)	(0.026)	(0.026)

Table 4.12: (continued)

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	0.008	0.019	0.019	0.014	0.025	0.025
	(0.053)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
Number of bookrunner(s)	ī 0.018	ī 0.022	ī 0.022	ī 0.009	ī 0.013	ī 0.013
	(0.018)	(0.017)	(0.017)	(0.018)	(0.017)	(0.017)
Domestic bookrunners		0.078***			0.078***	
		(0.026)			(0.026)	
Regional bookrunners			0.078***			0.078***
			(0.026)			(0.026)
Reputable bookrunners				ī 0.074***	ī 0.074***	ī 0.074***
				(0.023)	(0.023)	(0.023)
Constant	1.795***	1.749***	1.749***	1.791***	1.745***	1.745***
	(0.143)	(0.144)	(0.144)	(0.141)	(0.139)	(0.139)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.572	0.577	0.577	0.577	0.582	0.582
Observations	1,056	1,056	1,056	1,056	1,056	1,056

Table 4.13: Japan sample —Cross-sectional regression analysis (OLS) for the determinants of convertible bond offering yields

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of convertible bond offering yields on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in Japan over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.072***	ī 0.058***	ī 0.058***	ī 0.073***	ī 0.056***	ī 0.056***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
Financial leverage	0.245	0.272	0.272	0.243	0.275	0.275
	(0.168)	(0.168)	(0.168)	(0.168)	(0.168)	(0.168)
Return on assets	ī 1.471	ī 2.030	ī 2.030	ī 1.444	ī 2.074	ī 2.074
	(1.361)	(1.394)	(1.394)	(1.357)	(1.413)	(1.413)
Financial slack	ī 0.144	ī 0.148	ī 0.148	ī 0.148	ī 0.143	ī 0.143
	(0.150)	(0.155)	(0.155)	(0.150)	(0.158)	(0.158)
Stock run-up	ī 0.002***	ī 0.002**	ī 0.002**	ī 0.002**	ī 0.002**	ī 0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Stock volatility	0.054	0.035	0.035	0.053	0.037	0.037
	(0.043)	(0.041)	(0.041)	(0.042)	(0.041)	(0.041)
Market run-up	ī 0.007***	ī 0.008***	ī 0.008***	ī 0.007***	ī 0.008***	ī 0.008***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Market volatility	0.374***	0.404***	0.404***	0.377***	0.401***	0.401***
	(0.134)	(0.132)	(0.132)	(0.133)	(0.132)	(0.132)
Relative issue size	ī 0.731*	ī 0.590	ī 0.590	ī 0.728*	ī 0.591	ī 0.591
	(0.383)	(0.369)	(0.369)	(0.383)	(0.369)	(0.369)
Years-to-maturity(LN)	0.249***	0.075	0.075	0.245***	0.075	0.075
	(0.078)	(0.088)	(0.088)	(0.078)	(0.088)	(0.088)
Credit enhancer	ī 0.024	0.206	0.206	ī 0.026	0.212	0.212
	(0.134)	(0.179)	(0.179)	(0.134)	(0.182)	(0.182)
Call protection dummy	0.444	0.301	0.301	0.430	0.315	0.315
	(0.304)	(0.299)	(0.299)	(0.313)	(0.295)	(0.295)
Public offering dummy	0.430***	0.228***	0.228***	0.427***	0.227***	0.227***
	(0.081)	(0.082)	(0.082)	(0.081)	(0.082)	(0.082)

Table 4.13: (continued)

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	ī 0.103	ī 0.087	ī 0.087	ī 0.108	ī 0.082	ī 0.082
	(0.135)	(0.138)	(0.138)	(0.133)	(0.139)	(0.139)
Number of bookrunner(s)	2.049***	2.666***	2.666***	2.072***	2.654***	2.654***
	(0.252)	(0.291)	(0.291)	(0.246)	(0.306)	(0.306)
Domestic bookrunners		0.584***			0.597***	
		(0.102)			(0.100)	
Regional bookrunners			0.584***			0.597***
			(0.102)			(0.100)
Reputable bookrunners				0.058	ī 0.065	ī 0.065
				(0.089)	(0.086)	(0.086)
Constant	ī 3.322***	ī 4.767***	ī 4.767***	ī 2.460***	ī 3.661***	ī 3.661***
	(0.794)	(0.837)	(0.837)	(0.799)	(0.850)	(0.850)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.836	0.843	0.843	0.836	0.843	0.843
Observations	1,532	1,532	1,532	1,532	1,532	1,532

Table 4.14: European sample—Cross-sectional regression analysis (OLS) for the determinants of convertible bond issuer CARs

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of convertible bond issuer CARs on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in European countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.032	0.018	ī 0.008	0.050	0.084	0.062
	(0.122)	(0.122)	(0.122)	(0.124)	(0.124)	(0.124)
Financial leverage	1.473	1.222	1.157	1.357	1.146	1.091
	(1.062)	(1.068)	(1.059)	(1.098)	(1.101)	(1.094)
Return on assets	ī 1.419	ī 1.432	ī 1.318	ī 1.368	ī 1.387	ī 1.285
	(2.074)	(2.063)	(2.022)	(2.058)	(2.059)	(2.016)
Financial slack	ī 2.072	ī 1.855	ī 1.662	ī 1.833	ī 1.670	ī 1.499
	(1.366)	(1.363)	(1.336)	(1.374)	(1.372)	(1.348)
Stock run-up	ī 0.010	ī 0.010	ī 0.010	ī 0.009	ī 0.010	ī 0.009
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Stock volatility	ī 0.124	ī 0.094	ī 0.123	ī 0.187	ī 0.151	ī 0.179
	(0.303)	(0.296)	(0.299)	(0.292)	(0.288)	(0.290)
Market run-up	0.002	0.003	0.001	0.003	0.004	0.002
	(0.021)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
Market volatility	ī 0.589	ī 0.654	ī 0.668	ī 0.512	ī 0.581	ī 0.590
	(1.016)	(0.988)	(1.010)	(1.011)	(0.987)	(1.008)
Relative issue size	0.147	0.154	0.155	0.161	0.165	0.167
	(0.191)	(0.163)	(0.187)	(0.165)	(0.145)	(0.164)
Years-to-maturity(LN)	ī 0.522	ī 0.233	ī 0.357	ī 0.417	ī 0.171	ī 0.283
	(0.535)	(0.543)	(0.538)	(0.535)	(0.547)	(0.540)
Credit enhancer	1.045	1.251	1.164	0.874	1.084	0.998
	(1.666)	(1.519)	(1.848)	(1.649)	(1.517)	(1.810)
Call protection dummy	ī 2.552*	ī 3.172**	ī 3.319**	ī 1.847	ī 2.506*	ī 2.602*
	(1.429)	(1.443)	(1.407)	(1.431)	(1.440)	(1.418)
Public offering dummy	ī 0.197	ī 0.383	ī 0.342	ī 0.070	ī 0.256	ī 0.213
	(0.691)	(0.715)	(0.699)	(0.686)	(0.709)	(0.696)

Table 4.14: (continued)

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	ī 0.261	ī 0.279	ī 0.248	ī 0.168	ī 0.197	ī 0.167
	(0.651)	(0.651)	(0.649)	(0.658)	(0.658)	(0.657)
Number of bookrunner(s)	ī 0.090	ī 0.269	ī 0.225	ī 0.048	ī 0.216	ī 0.172
	(0.272)	(0.279)	(0.277)	(0.269)	(0.275)	(0.274)
Domestic bookrunners		1.265***			1.142***	
		(0.434)			(0.422)	
Regional bookrunners			1.262**			1.113**
			(0.497)			(0.496)
Reputable bookrunners				ī 1.326**	ī 1.141**	ī 1.178**
				(0.583)	(0.569)	(0.583)
Constant	15.846***	15.050***	15.136***	13.091***	12.757***	12.772***
	(4.456)	(4.461)	(4.503)	(4.531)	(4.532)	(4.578)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.034	0.048	0.043	0.044	0.055	0.050
Observations	614	614	614	614	614	614

Table 4.15: European sample—Cross-sectional regression analysis (OLS) for the determinants of underwriting fees

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of underwriting fees on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in European countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.018	ī 0.019	ī 0.019	ī 0.021	ī 0.023	ī 0.022
	(0.028)	(0.028)	(0.027)	(0.028)	(0.029)	(0.028)
Financial leverage	0.462	0.473	0.479	0.451	0.461	0.465
	(0.409)	(0.416)	(0.407)	(0.409)	(0.417)	(0.409)
Return on assets	ī 0.460	ī 0.461	ī 0.473	ī 0.384	ī 0.386	ī 0.396
	(0.505)	(0.501)	(0.494)	(0.496)	(0.492)	(0.487)
Financial slack	0.249	0.242	0.230	0.201	0.195	0.186
	(0.298)	(0.303)	(0.308)	(0.287)	(0.291)	(0.296)
Stock run-up	0.001	0.001	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Stock volatility	0.036	0.032	0.033	0.049	0.045	0.046
	(0.062)	(0.061)	(0.063)	(0.064)	(0.063)	(0.065)
Market run-up	0.006*	0.006*	0.006*	0.006	0.006	0.006
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Market volatility	0.646***	0.651***	0.659***	0.651***	0.655***	0.661***
	(0.225)	(0.224)	(0.233)	(0.227)	(0.227)	(0.236)
Relative issue size	0.097	0.091	0.095	0.092	0.086	0.090
	(0.101)	(0.104)	(0.099)	(0.100)	(0.103)	(0.099)
Years-to-maturity(LN)	0.081	0.073	0.073	0.078	0.070	0.071
	(0.077)	(0.084)	(0.078)	(0.078)	(0.084)	(0.079)
Credit enhancer	ī 0.431	ī 0.435	ī 0.423	ī 0.423	ī 0.427	ī 0.416
	(0.544)	(0.544)	(0.549)	(0.549)	(0.549)	(0.553)
Call protection dummy	ī	ī	ī	ī	ī	ī
Public offering dummy	ī 0.024	ī 0.018	ī 0.013	ī 0.018	ī 0.012	ī 0.009
	(0.202)	(0.204)	(0.205)	(0.205)	(0.207)	(0.208)

Table 4.15: (continued)

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	ī 0.020	ī 0.021	ī 0.019	ī 0.030	ī 0.031	ī 0.030
	(0.111)	(0.112)	(0.111)	(0.109)	(0.110)	(0.110)
Number of bookrunner(s)	ī 0.217**	ī 0.208**	ī 0.208**	ī 0.223**	ī 0.214**	ī 0.215**
	(0.087)	(0.088)	(0.091)	(0.087)	(0.089)	(0.092)
Domestic bookrunners		ī 0.033			ī 0.031	
		(0.088)			(0.087)	
Regional bookrunners			ī 0.041			ī 0.035
			(0.103)			(0.107)
Reputable bookrunners				0.130	0.129	0.128
				(0.118)	(0.119)	(0.121)
Constant	0.104	0.160	0.112	ī 0.001	0.133	0.033
	(0.638)	(0.675)	(0.591)	(0.594)	(0.669)	(0.591)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.328	0.325	0.326	0.331	0.328	0.328
Observations	272	272	272	272	272	272

Table 4.16: European sample —Cross-sectional regression analysis (OLS) for the determinants of convertible bond offering yields

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of convertible bond offering yields on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in European countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.212**	ī 0.232***	ī 0.219**	ī 0.196**	ī 0.211***	ī 0.198**
	(0.086)	(0.081)	(0.085)	(0.080)	(0.076)	(0.079)
Financial leverage	0.601	0.704	0.815*	0.564	0.663	0.778
	(0.465)	(0.468)	(0.467)	(0.480)	(0.481)	(0.480)
Return on assets	ī 2.472***	ī 2.495***	ī 2.511***	ī 2.463***	ī 2.485***	ī 2.502***
	(0.895)	(0.838)	(0.855)	(0.912)	(0.852)	(0.875)
Financial slack	0.170	0.082	ī 0.116	0.235	0.163	ī 0.047
	(0.564)	(0.554)	(0.546)	(0.567)	(0.558)	(0.554)
Stock run-up	ī 0.007***	ī 0.007***	ī 0.007***	ī 0.007***	ī 0.006**	ī 0.007***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Stock volatility	0.305***	0.292***	0.306***	0.290***	0.271***	0.287***
	(0.073)	(0.076)	(0.073)	(0.071)	(0.074)	(0.072)
Market run-up	0.003	0.002	0.003	0.003	0.003	0.004
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Market volatility	ī 0.400	ī 0.380	ī 0.369	ī 0.377	ī 0.346	ī 0.336
	(0.357)	(0.351)	(0.359)	(0.348)	(0.338)	(0.347)
Relative issue size	0.023	0.021	0.022	0.023	0.022	0.023
	(0.052)	(0.052)	(0.052)	(0.052)	(0.050)	(0.052)
Years-to-maturity(LN)	ī 0.117	ī 0.255	ī 0.233	ī 0.094	ī 0.238	ī 0.211
	(0.389)	(0.390)	(0.385)	(0.389)	(0.390)	(0.386)
Credit enhancer	1.702*	1.782*	1.481	1.670*	1.746*	1.425
	(0.989)	(0.982)	(1.031)	(0.979)	(0.975)	(1.018)
Call protection dummy	ī 1.402*	ī 1.106	ī 0.931	ī 1.211	ī 0.816	ī 0.648
	(0.773)	(0.788)	(0.779)	(0.773)	(0.776)	(0.759)
Public offering dummy	ī 0.534	ī 0.423	ī 0.421	ī 0.506	ī 0.375	ī 0.378
	(0.602)	(0.603)	(0.599)	(0.608)	(0.610)	(0.605)

Table 4.16: (continued)

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	ī 0.137	ī 0.153	ī 0.167	ī 0.113	ī 0.121	ī 0.137
	(0.374)	(0.372)	(0.376)	(0.379)	(0.378)	(0.380)
Number of bookrunner(s)	ī 0.246*	ī 0.159	ī 0.163	ī 0.235*	ī 0.135	ī 0.142
	(0.141)	(0.143)	(0.148)	(0.142)	(0.142)	(0.147)
Domestic bookrunners		ī 0.565**			ī 0.618***	
		(0.233)			(0.223)	
Regional bookrunners			ī 0.799**			ī 0.848**
			(0.337)			(0.330)
Reputable bookrunners				ī 0.313	ī 0.429	ī 0.417
				(0.294)	(0.284)	(0.282)
Constant	13.068***	13.297***	13.571***	12.362***	12.353***	12.663***
	(2.055)	(2.028)	(2.021)	(1.965)	(1.946)	(1.960)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.321	0.326	0.328	0.321	0.327	0.329
Observations	566	566	566	566	566	566

Table 4.17: Asia Pacific sample—Cross-sectional regression analysis (OLS) for the determinants of convertible bond issuer CARs

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of convertible bond issuer CARs on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in Asia Pacific countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.405***	ī 0.349***	ī 0.359***	ī 0.306**	ī 0.289**	ī 0.298**
	(0.131)	(0.132)	(0.132)	(0.131)	(0.132)	(0.132)
Financial leverage	0.355	0.355	0.401	0.286	0.303	0.337
	(1.459)	(1.470)	(1.478)	(1.462)	(1.471)	(1.476)
Return on assets	ī 5.048**	ī 4.935**	ī 4.875**	ī 4.924**	ī 4.872**	ī 4.831**
	(2.175)	(2.213)	(2.236)	(2.212)	(2.232)	(2.248)
Financial slack	0.246	0.106	0.114	0.366	0.233	0.240
	(1.361)	(1.349)	(1.355)	(1.382)	(1.365)	(1.373)
Stock run-up	ī 0.008*	ī 0.007*	ī 0.008*	ī 0.008*	ī 0.007*	ī 0.007*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Stock volatility	ī 0.248	ī 0.273	ī 0.283	ī 0.269	ī 0.282	ī 0.288
	(0.336)	(0.331)	(0.332)	(0.335)	(0.331)	(0.332)
Market run-up	0.008	0.008	0.009	0.007	0.008	0.008
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Market volatility	ī 1.346*	ī 1.127	ī 1.080	ī 1.362*	ī 1.198*	ī 1.166
	(0.742)	(0.715)	(0.724)	(0.741)	(0.719)	(0.731)
Relative issue size	ī 0.509	ī 0.463	ī 0.453	ī 0.458	ī 0.437	ī 0.431
	(0.410)	(0.415)	(0.417)	(0.417)	(0.420)	(0.420)
Years-to-maturity(LN)	0.176	0.259	0.299	0.273	0.310	0.336
	(0.606)	(0.607)	(0.607)	(0.613)	(0.612)	(0.612)
Credit enhancer	0.827	1.034	0.812	1.189	1.251	1.085
	(2.417)	(2.423)	(2.395)	(2.437)	(2.436)	(2.418)
Call protection dummy	0.231	0.882	0.725	0.457	0.878	0.754
	(0.628)	(0.758)	(0.695)	(0.646)	(0.757)	(0.697)
Public offering dummy	0.402	0.307	0.272	0.347	0.291	0.267
	(0.545)	(0.553)	(0.552)	(0.546)	(0.552)	(0.551)

Table 4.17: (continued)

VARIABLES	1 All	2 Domestic	3 Regional	4 Reputable	5 Domestic & Reputable	6 Regional & Reputable
S&P rated bond dummy	ī 0.348	ī 0.136	ī 0.055	ī 0.163	ī 0.053	0.000
	(0.661)	(0.673)	(0.674)	(0.671)	(0.678)	(0.678)
Number of bookrunner(s)	ī 0.558**	ī 0.561**	ī 0.613**	ī 0.447*	ī 0.477*	ī 0.515**
	(0.246)	(0.244)	(0.246)	(0.247)	(0.246)	(0.249)
Domestic bookrunners		1.254**			0.919	
		(0.584)			(0.590)	
Regional bookrunners			1.244**			0.895*
			(0.510)			(0.516)
Reputable bookrunners				ī 1.101***	ī 0.830**	ī 0.818**
				(0.409)	(0.403)	(0.409)
Constant	10.757***	9.095***	8.057***	10.394***	9.266***	8.545***
	(2.144)	(2.317)	(2.439)	(2.147)	(2.328)	(2.459)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.050	0.053	0.053	0.053	0.054	0.054
Observations	1,643	1,643	1,643	1,643	1,643	1,643

Table 4.18: Asia Pacific sample—Cross-sectional regression analysis (OLS) for the determinants of underwriting fees

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of underwriting fees on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in Asia Pacific countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.313***	ī 0.312***	ī 0.314***	ī 0.292***	ī 0.293***	ī 0.294***
	(0.067)	(0.067)	(0.067)	(0.068)	(0.068)	(0.068)
Financial leverage	0.114	0.124	0.105	0.151	0.147	0.121
	(0.296)	(0.297)	(0.299)	(0.293)	(0.295)	(0.297)
Return on assets	ī 0.778**	ī 0.755*	ī 0.789**	ī 0.694*	ī 0.704*	ī 0.731*
	(0.379)	(0.384)	(0.382)	(0.373)	(0.377)	(0.376)
Financial slack	ī 0.345	ī 0.360	ī 0.342	ī 0.314	ī 0.307	ī 0.298
	(0.287)	(0.291)	(0.288)	(0.280)	(0.282)	(0.278)
Stock run-up	ī 0.001	ī 0.001	ī 0.001	ī 0.000	ī 0.000	ī 0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Stock volatility	ī 0.088	ī 0.089	ī 0.086	ī 0.100	ī 0.100	ī 0.094
	(0.068)	(0.068)	(0.069)	(0.067)	(0.068)	(0.068)
Market run-up	ī 0.002	ī 0.001	ī 0.002	ī 0.002	ī 0.002	ī 0.002
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Market volatility	ī 0.004	0.017	ī 0.017	ī 0.007	ī 0.017	ī 0.057
	(0.235)	(0.228)	(0.229)	(0.236)	(0.236)	(0.238)
Relative issue size	0.065	0.068	0.063	0.073	0.072	0.066
	(0.087)	(0.087)	(0.087)	(0.086)	(0.086)	(0.085)
Years-to-maturity(LN)	0.225	0.218	0.228	0.201	0.203	0.211
	(0.211)	(0.216)	(0.216)	(0.216)	(0.219)	(0.218)
Credit enhancer	0.319	0.323	0.318	0.449*	0.450*	0.457*
	(0.225)	(0.225)	(0.226)	(0.260)	(0.260)	(0.260)
Call protection dummy	ī 0.320	ī 0.291	ī 0.329	ī 0.270	ī 0.283	ī 0.299
	(0.349)	(0.340)	(0.345)	(0.341)	(0.337)	(0.339)
Public offering dummy	ī 0.278	ī 0.283	ī 0.271	ī 0.314	ī 0.312	ī 0.293
	(0.263)	(0.264)	(0.265)	(0.266)	(0.266)	(0.266)

Table 4.18: (continued)

VARIABLES	1 All	2 Domestic	3 Regional	4 Reputable	5 Domestic & Reputable	6 Regional & Reputable
S&P rated bond dummy	0.532***	0.539***	0.525***	0.604***	0.603***	0.582***
	(0.135)	(0.138)	(0.140)	(0.147)	(0.148)	(0.150)
Number of bookrunner(s)	0.635**	0.635**	0.634**	0.683**	0.684**	0.685**
	(0.289)	(0.289)	(0.290)	(0.303)	(0.303)	(0.303)
Domestic bookrunners		0.078			ī 0.037	
		(0.182)			(0.176)	
Regional bookrunners			ī 0.043			ī 0.171
			(0.155)			(0.149)
Reputable bookrunners				ī 0.322**	ī 0.329**	ī 0.355**
				(0.145)	(0.143)	(0.145)
Constant	7.844***	7.823***	7.856***	8.040***	8.054***	8.104***
	(1.954)	(1.945)	(1.948)	(1.998)	(1.994)	(1.997)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.164	0.163	0.163	0.171	0.169	0.170
Observations	533	533	533	533	533	533

Table 4.19: Asia Pacific sample—Cross-sectional regression analysis (OLS) for the determinants of convertible bond offering yields

This table presents the estimation results of the cross-sectional OLS regression analysis for the determinants of convertible bond offering yields on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in Asia Pacific countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.621***	ī 0.631***	ī 0.624***	ī 0.569***	ī 0.578***	ī 0.572***
	(0.139)	(0.144)	(0.142)	(0.144)	(0.146)	(0.145)
Financial leverage	1.627**	1.631**	1.627*	1.575*	1.570*	1.566*
	(0.828)	(0.831)	(0.829)	(0.826)	(0.829)	(0.828)
Return on assets	1.300*	1.292*	1.295*	1.342**	1.334**	1.320**
	(0.670)	(0.671)	(0.666)	(0.673)	(0.677)	(0.667)
Financial slack	0.514	0.531	0.518	0.574	0.634	0.610
	(0.960)	(0.962)	(0.962)	(0.970)	(0.976)	(0.976)
Stock run-up	ī 0.008**	ī 0.008**	ī 0.008**	ī 0.008*	ī 0.008**	ī 0.008**
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Stock volatility	0.179	0.185	0.181	0.168	0.178	0.177
	(0.142)	(0.144)	(0.145)	(0.143)	(0.144)	(0.145)
Market run-up	0.006	0.006	0.006	0.006	0.005	0.005
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Market volatility	ī 0.210	ī 0.239	ī 0.221	ī 0.225	ī 0.300	ī 0.294
	(0.406)	(0.413)	(0.417)	(0.408)	(0.423)	(0.429)
Relative issue size	ī 0.084	ī 0.089	ī 0.086	ī 0.062	ī 0.067	ī 0.068
	(0.164)	(0.164)	(0.164)	(0.168)	(0.168)	(0.168)
Years-to-maturity(LN)	ī 2.058***	ī 2.064***	ī 2.062***	ī 2.010***	ī 2.013***	ī 2.026***
	(0.517)	(0.516)	(0.515)	(0.514)	(0.512)	(0.512)
Credit enhancer	ī 9.957*	ī 10.006*	ī 9.953*	ī 9.834*	ī 9.920*	ī 9.785*
	(5.291)	(5.285)	(5.301)	(5.302)	(5.281)	(5.345)
Call protection dummy	0.185	0.082	0.163	0.301	0.082	0.193
	(0.501)	(0.546)	(0.520)	(0.496)	(0.546)	(0.516)
Public offering dummy	0.717**	0.738**	0.725**	0.665**	0.703**	0.702**
	(0.337)	(0.350)	(0.352)	(0.336)	(0.347)	(0.350)

Table 4.19: (continued)

	1	2	3	4	5	6
VARIABLES	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	ī 1.062	ī 1.082	ī 1.069	ī 1.016	ī 1.052	ī 1.049
	(0.774)	(0.778)	(0.778)	(0.777)	(0.779)	(0.781)
Number of bookrunner(s)	0.303*	0.309*	0.306*	0.343*	0.367*	0.366*
	(0.183)	(0.185)	(0.185)	(0.184)	(0.192)	(0.191)
Domestic bookrunners		ī 0.182			ī 0.444	
		(0.314)			(0.389)	
Regional bookrunners			ī 0.052			ī 0.304
			(0.289)			(0.362)
Reputable bookrunners				ī 0.497	ī 0.633	ī 0.600
				(0.410)	(0.468)	(0.471)
Constant	15.830***	16.157***	15.909***	15.353***	16.023***	15.717***
	(1.937)	(2.044)	(2.000)	(1.920)	(2.032)	(1.985)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.325	0.325	0.324	0.326	0.325	0.325
Observations	940	940	940	940	940	940

Table 4.20: English origin sample—Cross-sectional regression analysis (OLS) for the determinants of convertible bond issuer CARs

This table presents the estimation results of the Cross-sectional OLS regression analysis for the determinants of convertible bond offering yields on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in English origin countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.411***	ī 0.435***	ī 0.415***	ī 0.239**	ī 0.261**	ī 0.238**
	(0.115)	(0.115)	(0.115)	(0.121)	(0.121)	(0.121)
Financial leverage	0.374	0.379	0.354	0.376	0.381	0.344
	(1.268)	(1.269)	(1.269)	(1.271)	(1.271)	(1.271)
Return on assets	1.256	1.260	1.232	1.241	1.245	1.203
	(1.434)	(1.435)	(1.436)	(1.437)	(1.437)	(1.438)
Financial slack	ī 1.767***	ī 1.710***	ī 1.750***	ī 1.554***	ī 1.491***	ī 1.520***
	(0.567)	(0.568)	(0.568)	(0.566)	(0.567)	(0.566)
Stock run-up	ī 0.011***	ī 0.011***	ī 0.011***	ī 0.010***	ī 0.011***	ī 0.010***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Stock volatility	ī 0.065	ī 0.053	ī 0.059	ī 0.093	ī 0.081	ī 0.085
	(0.211)	(0.211)	(0.211)	(0.211)	(0.211)	(0.210)
Market run-up	0.011	0.009	0.010	0.011	0.008	0.009
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Market volatility	1.261*	0.930	1.105	1.231*	0.881	0.989
	(0.733)	(0.771)	(0.775)	(0.733)	(0.771)	(0.777)
Relative issue size	0.251	0.250	0.250	0.300	0.300	0.301
	(0.189)	(0.191)	(0.190)	(0.183)	(0.185)	(0.184)
Years-to-maturity(LN)	ī 1.594***	ī 1.543***	ī 1.578***	ī 1.468***	ī 1.412***	ī 1.439***
	(0.315)	(0.319)	(0.319)	(0.313)	(0.316)	(0.317)
Credit enhancer	4.681**	4.450**	4.698**	4.819**	4.577*	4.851**
	(2.233)	(2.266)	(2.133)	(2.443)	(2.483)	(2.294)
Call protection dummy	0.227	0.151	0.214	0.274	0.194	0.256
	(0.603)	(0.606)	(0.602)	(0.607)	(0.612)	(0.606)
Public offering dummy	0.379	0.309	0.363	0.307	0.231	0.279
	(0.409)	(0.412)	(0.409)	(0.408)	(0.411)	(0.408)

Table 4.20: (continued)

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	0.808**	0.937**	0.839**	0.822**	0.958***	0.870**
	(0.368)	(0.371)	(0.369)	(0.367)	(0.370)	(0.368)
Number of bookrunner(s)	ī 0.194	ī 0.117	ī 0.169	ī 0.082	0.002	ī 0.039
	(0.259)	(0.263)	(0.261)	(0.255)	(0.260)	(0.257)
Domestic bookrunners		ī 0.814**			ī 0.861**	
		(0.377)			(0.376)	
Regional bookrunners			ī 0.363			ī 0.562
			(0.383)			(0.381)
Reputable bookrunners				ī 1.663***	ī 1.690***	ī 1.727***
				(0.403)	(0.403)	(0.403)
Constant	4.468	5.547*	5.072	2.125	3.229	2.969
	(3.155)	(3.117)	(3.250)	(3.091)	(3.055)	(3.194)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,527	2,527	2,527	2,527	2,527	2,527
Adjusted R-squared	0.055	0.057	0.055	0.061	0.062	0.061

Table 4.21: English origin sample—Cross-sectional regression analysis (OLS) for the determinants of underwriting fees

This table presents the estimation results of the Cross-sectional OLS regression analysis for the determinants of underwriting fees on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in English origin over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.225***	ī 0.223***	ī 0.225***	ī 0.208***	ī 0.206***	ī 0.208***
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)
Financial leverage	0.092	0.090	0.091	0.100	0.098	0.099
	(0.119)	(0.120)	(0.120)	(0.118)	(0.118)	(0.118)
Return on assets	ī 0.016	ī 0.018	ī 0.016	ī 0.006	ī 0.008	ī 0.007
	(0.140)	(0.141)	(0.140)	(0.139)	(0.139)	(0.139)
Financial slack	ī 0.238**	ī 0.239**	ī 0.238**	ī 0.209**	ī 0.210**	ī 0.209**
	(0.102)	(0.102)	(0.102)	(0.100)	(0.100)	(0.100)
Stock run-up	ī 0.002**	ī 0.002**	ī 0.002**	ī 0.002**	ī 0.002**	ī 0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Stock volatility	0.042	0.041	0.042	0.037	0.037	0.037
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Market run-up	ī 0.000	0.000	ī 0.000	ī 0.000	ī 0.000	ī 0.000
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Market volatility	ī 0.295**	ī 0.278*	ī 0.298**	ī 0.296**	ī 0.277*	ī 0.303**
	(0.142)	(0.146)	(0.147)	(0.141)	(0.146)	(0.147)
Relative issue size	ī 0.052**	ī 0.052**	ī 0.051**	ī 0.046**	ī 0.046**	ī 0.046**
	(0.020)	(0.021)	(0.020)	(0.020)	(0.020)	(0.020)
Years-to-maturity(LN)	ī 0.101	ī 0.106*	ī 0.100	ī 0.086	ī 0.091	ī 0.084
	(0.064)	(0.063)	(0.065)	(0.064)	(0.064)	(0.065)
Credit enhancer	0.418	0.437	0.418	0.435	0.455	0.436
	(0.475)	(0.475)	(0.479)	(0.455)	(0.454)	(0.464)
Call protection dummy	0.138	0.145	0.137	0.145*	0.153*	0.144*
	(0.088)	(0.088)	(0.088)	(0.087)	(0.087)	(0.087)
Public offering dummy	ī 0.041	ī 0.037	ī 0.042	ī 0.046	ī 0.042	ī 0.047
	(0.083)	(0.083)	(0.083)	(0.083)	(0.083)	(0.083)

Table 4.21: (continued)

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	ī 0.237***	ī 0.247***	ī 0.236***	ī 0.238***	ī 0.250***	ī 0.236***
	(0.066)	(0.068)	(0.067)	(0.066)	(0.068)	(0.067)
Number of bookrunner(s)	0.027	0.023	0.027	0.043	0.039	0.043
	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)
Domestic bookrunners		0.058			0.064	
		(0.081)			(0.082)	
Regional bookrunners			ī 0.012			ī 0.025
			(0.078)			(0.078)
Reputable bookrunners				ī 0.205***	ī 0.206***	ī 0.206***
				(0.067)	(0.067)	(0.067)
Constant	7.034***	6.994***	7.039***	6.731***	6.684***	6.740***
	(0.524)	(0.529)	(0.527)	(0.531)	(0.537)	(0.534)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,332	1,332	1,332	1,332	1,332	1,332
Adjusted R-squared	0.293	0.292	0.292	0.297	0.297	0.296

Table 4.22: English origin sample—Cross-sectional regression analysis (OLS) for the determinants of convertible bond offering yields

This table presents the estimation results of the Cross-sectional OLS regression analysis for the determinants of convertible bond offering yields on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in English origin countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.312***	ī 0.289***	ī 0.298***	ī 0.227***	ī 0.205**	ī 0.225***
	(0.082)	(0.085)	(0.082)	(0.087)	(0.089)	(0.087)
Financial leverage	ī 0.224	ī 0.241	ī 0.183	ī 0.234	ī 0.251	ī 0.195
	(0.489)	(0.487)	(0.489)	(0.488)	(0.487)	(0.489)
Return on assets	ī 0.456	ī 0.477	ī 0.411	ī 0.478	ī 0.498	ī 0.433
	(0.579)	(0.578)	(0.580)	(0.581)	(0.579)	(0.582)
Financial slack	ī 0.031	ī 0.085	ī 0.085	0.078	0.024	0.015
	(0.381)	(0.383)	(0.382)	(0.385)	(0.386)	(0.386)
Stock run-up	ī 0.006***	ī 0.006***	ī 0.006***	ī 0.006***	ī 0.005***	ī 0.005***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Stock volatility	0.219***	0.210***	0.201***	0.203***	0.195***	0.189***
	(0.072)	(0.071)	(0.071)	(0.072)	(0.072)	(0.071)
Market run-up	ī 0.004	ī 0.001	0.001	ī 0.004	ī 0.001	0.000
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Market volatility	ī 0.440	ī 0.142	0.022	ī 0.484	ī 0.192	ī 0.049
	(0.311)	(0.302)	(0.305)	(0.310)	(0.302)	(0.306)
Relative issue size	ī 0.118*	ī 0.120**	ī 0.120*	ī 0.098*	ī 0.100*	ī 0.102*
	(0.061)	(0.060)	(0.061)	(0.057)	(0.057)	(0.058)
Years-to-maturity(LN)	ī 1.023***	ī 1.068***	ī 1.063***	ī 0.959***	ī 1.004***	ī 1.004***
	(0.200)	(0.205)	(0.202)	(0.200)	(0.205)	(0.203)
Credit enhancer	ī 4.391***	ī 4.230***	ī 3.963***	ī 4.156***	ī 4.003***	ī 3.789***
	(0.858)	(0.877)	(0.857)	(0.825)	(0.843)	(0.830)
Call protection dummy	ī 0.537	ī 0.437	ī 0.485	ī 0.485	ī 0.388	ī 0.444
	(0.359)	(0.349)	(0.356)	(0.368)	(0.357)	(0.365)
Public offering dummy	ī 0.689**	ī 0.637*	ī 0.645*	ī 0.720**	ī 0.668*	ī 0.675**
	(0.347)	(0.346)	(0.344)	(0.345)	(0.344)	(0.342)

Table 4.22: (continued)

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	ī 0.168	ī 0.273	ī 0.254	ī 0.163	ī 0.266	ī 0.244
	(0.386)	(0.399)	(0.384)	(0.385)	(0.399)	(0.383)
Number of bookrunner(s)	ī 0.171*	ī 0.238**	ī 0.243***	ī 0.112	ī 0.179*	ī 0.187**
	(0.088)	(0.094)	(0.090)	(0.090)	(0.096)	(0.092)
Domestic bookrunners		0.741***			0.726***	
		(0.240)			(0.240)	
Regional bookrunners			1.090***			1.013***
			(0.202)			(0.202)
Reputable bookrunners				ī 0.845***	ī 0.830***	ī 0.737**
				(0.321)	(0.321)	(0.321)
Constant	15.115***	14.753***	14.426***	13.523***	13.197***	13.086***
	(1.195)	(1.207)	(1.181)	(1.407)	(1.406)	(1.387)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,202	2,202	2,202	2,202	2,202	2,202
Adjusted R-squared	0.145	0.148	0.151	0.149	0.151	0.153

Table 4.23: French origin sample—Cross-sectional regression analysis (OLS) for the determinants of convertible bond issuer CARs

This table presents the estimation results of the Cross-sectional OLS regression analysis for the determinants of convertible bond offering yields on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in French origin countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.062	ī 0.041	ī 0.051	0.026	0.036	0.030
	(0.186)	(0.186)	(0.189)	(0.191)	(0.191)	(0.193)
Financial leverage	ī 0.119	ī 0.255	ī 0.247	ī 0.246	ī 0.347	ī 0.324
	(1.205)	(1.204)	(1.196)	(1.230)	(1.231)	(1.226)
Return on assets	ī 5.607	ī 5.156	ī 5.358	ī 5.455	ī 5.101	ī 5.299
	(4.464)	(4.466)	(4.518)	(4.458)	(4.462)	(4.514)
Financial slack	ī 1.167	ī 0.843	ī 0.901	ī 0.981	ī 0.733	ī 0.816
	(1.706)	(1.676)	(1.704)	(1.722)	(1.702)	(1.738)
Stock run-up	ī 0.011	ī 0.011	ī 0.011	ī 0.011	ī 0.011	ī 0.011
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Stock volatility	0.085	0.131	0.108	0.056	0.095	0.071
	(0.561)	(0.556)	(0.568)	(0.534)	(0.532)	(0.542)
Market run-up	0.012	0.011	0.011	0.013	0.012	0.012
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Market volatility	0.056	ī 0.015	0.029	0.213	0.145	0.192
	(1.635)	(1.625)	(1.643)	(1.617)	(1.609)	(1.627)
Relative issue size	0.204*	0.185	0.212*	0.208*	0.193*	0.213*
	(0.118)	(0.120)	(0.115)	(0.112)	(0.114)	(0.111)
Years-to-maturity(LN)	ī 0.665	ī 0.597	ī 0.576	ī 0.486	ī 0.444	ī 0.435
	(0.776)	(0.783)	(0.794)	(0.786)	(0.794)	(0.802)
Call protection dummy	ī 2.992	ī 3.100	ī 3.203	ī 2.444	ī 2.572	ī 2.595
	(2.038)	(2.035)	(2.031)	(2.002)	(1.995)	(1.992)
Public offering dummy	0.110	ī 0.006	ī 0.007	0.370	0.257	0.288
	(1.088)	(1.115)	(1.119)	(1.093)	(1.120)	(1.128)
S&P rated bond dummy	ī 0.433	ī 0.457	ī 0.445	ī 0.235	ī 0.268	ī 0.248
	(1.035)	(1.031)	(1.033)	(1.098)	(1.095)	(1.099)

Table 4.23: (continued)

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Number of bookrunner(s)	0.092	ī 0.017	0.046	0.094	0.006	0.064
	(0.312)	(0.330)	(0.321)	(0.309)	(0.323)	(0.315)
Domestic bookrunners		0.736			0.595	
		(0.613)			(0.595)	
Regional bookrunners			0.521			0.333
			(0.830)			(0.807)
Reputable bookrunners				ī 1.352	ī 1.254	ī 1.314
				(0.858)	(0.844)	(0.849)
Constant	13.627***	13.261***	12.943***	10.735**	10.649**	10.380**
	(4.544)	(4.587)	(4.713)	(4.765)	(4.792)	(4.934)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	340	340	340	340	340	340
Adjusted R-squared	ī 0.026	ī 0.024	ī 0.028	ī 0.016	ī 0.016	ī 0.019

Table 4.24: French origin sample—Cross-sectional regression analysis (OLS) for the determinants of underwriting fees

This table presents the estimation results of the Cross-sectional OLS regression analysis for the determinants of underwriting fees on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in French origin over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	0.034	0.034	0.042	0.024	0.025	0.032
	(0.068)	(0.069)	(0.064)	(0.073)	(0.073)	(0.066)
Financial leverage	1.392*	1.399*	1.334*	1.404*	1.411*	1.348*
	(0.776)	(0.792)	(0.763)	(0.781)	(0.797)	(0.770)
Return on assets	0.147	0.150	0.225	0.240	0.243	0.314
	(1.006)	(1.009)	(1.005)	(0.992)	(0.994)	(0.999)
Financial slack	0.530	0.505	0.614	0.463	0.438	0.545
	(0.735)	(0.787)	(0.791)	(0.712)	(0.766)	(0.758)
Stock run-up	0.001	0.001	0.001	0.001	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Stock volatility	0.050	0.049	0.067	0.059	0.057	0.075
	(0.088)	(0.091)	(0.093)	(0.089)	(0.092)	(0.096)
Market run-up	ī 0.006	ī 0.006	ī 0.006	ī 0.006	ī 0.006	ī 0.006
	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)	(0.005)
Market volatility	0.229	0.218	0.221	0.215	0.204	0.208
	(0.313)	(0.309)	(0.317)	(0.317)	(0.311)	(0.322)
Relative issue size	0.491*	0.492*	0.499*	0.463*	0.465*	0.472*
	(0.267)	(0.270)	(0.266)	(0.264)	(0.267)	(0.261)
Years-to-maturity(LN)	0.113	0.110	0.137	0.102	0.098	0.124
	(0.155)	(0.156)	(0.161)	(0.155)	(0.155)	(0.158)
Public offering dummy	ī 0.027	ī 0.023	ī 0.030	ī 0.053	ī 0.049	ī 0.055
	(0.280)	(0.280)	(0.280)	(0.294)	(0.296)	(0.295)
S&P rated bond dummy	0.003	0.001	ī 0.011	ī 0.015	ī 0.017	ī 0.028
	(0.227)	(0.229)	(0.220)	(0.214)	(0.217)	(0.208)

Table 4.24: (continued)

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Number of bookrunner(s)	ī 0.186	ī 0.180	ī 0.195	ī 0.203	ī 0.197	ī 0.211
	(0.118)	(0.117)	(0.122)	(0.123)	(0.123)	(0.128)
Domestic bookrunners		ī 0.026			ī 0.027	
		(0.144)			(0.145)	
Regional bookrunners			0.097			0.093
			(0.206)			(0.205)
Reputable bookrunners				0.134	0.134	0.132
				(0.185)	(0.185)	(0.184)
Constant	ī 0.479	ī 0.464	ī 0.828	ī 0.293	ī 0.277	ī 0.630
	(1.986)	(2.013)	(1.793)	(2.074)	(2.096)	(1.827)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	148	148	148	148	148	148
Adjusted R-squared	0.326	0.319	0.321	0.325	0.317	0.318

Table 4.25: French origin sample—Cross-sectional regression analysis (OLS) for the determinants of convertible bond offering yields

This table presents the estimation results of the Cross-sectional OLS regression analysis for the determinants of convertible bond offering yields on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in French origin countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.257***	ī 0.257***	ī 0.262***	ī 0.260***	ī 0.260***	ī 0.263***
	(0.058)	(0.059)	(0.059)	(0.062)	(0.063)	(0.063)
Financial leverage	0.702	0.699	0.759	0.710	0.705	0.763
	(0.469)	(0.475)	(0.466)	(0.471)	(0.477)	(0.469)
Return on assets	ī 7.333***	ī 7.323***	ī 7.403***	ī 7.345***	ī 7.334***	ī 7.409***
	(2.350)	(2.370)	(2.344)	(2.362)	(2.381)	(2.353)
Financial slack	ī 0.827	ī 0.819	ī 0.927	ī 0.839	ī 0.830	ī 0.932
	(0.688)	(0.703)	(0.693)	(0.695)	(0.708)	(0.700)
Stock run-up	ī 0.007***	ī 0.007***	ī 0.007***	ī 0.007***	ī 0.007***	ī 0.007***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Stock volatility	0.117	0.118	0.109	0.118	0.119	0.109
	(0.090)	(0.092)	(0.092)	(0.091)	(0.093)	(0.093)
Market run-up	ī 0.001	ī 0.001	ī 0.001	ī 0.001	ī 0.001	ī 0.001
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Market volatility	ī 0.397	ī 0.400	ī 0.380	ī 0.403	ī 0.407	ī 0.383
	(0.425)	(0.428)	(0.426)	(0.423)	(0.427)	(0.424)
Relative issue size	ī 0.002	ī 0.002	ī 0.005	ī 0.002	ī 0.002	ī 0.005
	(0.035)	(0.035)	(0.036)	(0.035)	(0.035)	(0.036)
Years-to-maturity(LN)	ī 0.742**	ī 0.741**	ī 0.770**	ī 0.747**	ī 0.746**	ī 0.773**
	(0.326)	(0.329)	(0.329)	(0.327)	(0.330)	(0.330)
Call protection dummy	ī 1.459*	ī 1.464**	ī 1.400*	ī 1.482*	ī 1.491*	ī 1.414*
	(0.745)	(0.743)	(0.753)	(0.762)	(0.757)	(0.771)
Public offering dummy	ī 0.401	ī 0.404	ī 0.359	ī 0.409	ī 0.413	ī 0.364
	(0.423)	(0.426)	(0.428)	(0.424)	(0.428)	(0.428)
S&P rated bond dummy	0.113	0.112	0.124	0.107	0.106	0.121
	(0.271)	(0.273)	(0.272)	(0.275)	(0.276)	(0.276)

Table 4.25: (continued)

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Number of bookrunner(s)	−0.459***	−0.463***	−0.440***	−0.459***	−0.464***	−0.440***
	(0.117)	(0.120)	(0.121)	(0.117)	(0.121)	(0.121)
Domestic bookrunners		0.020			0.026	
		(0.211)			(0.209)	
Regional bookrunners			−0.189			−0.186
			(0.276)			(0.276)
Reputable bookrunners				0.042	0.047	0.025
				(0.256)	(0.254)	(0.257)
Constant	17.003***	17.000***	17.216***	17.068***	17.072***	17.251***
	(1.704)	(1.711)	(1.744)	(1.741)	(1.739)	(1.778)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	313	313	313	313	313	313
Adjusted R-squared	0.695	0.694	0.694	0.694	0.692	0.693

Table 4.26: German origin sample—Cross-sectional regression analysis (OLS) for the determinants of convertible bond issuer CARs

This table presents the estimation results of the Cross-sectional OLS regression analysis for the determinants of convertible bond offering yields on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in German origin countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.245***	ī 0.246***	ī 0.244***	ī 0.225***	ī 0.227***	ī 0.224***
	(0.070)	(0.070)	(0.070)	(0.070)	(0.071)	(0.071)
Financial leverage	ī 1.264	ī 1.270	ī 1.256	ī 1.341	ī 1.347	ī 1.334
	(0.894)	(0.900)	(0.901)	(0.897)	(0.903)	(0.904)
Return on assets	ī 6.695**	ī 6.701**	ī 6.685**	ī 6.708**	ī 6.716**	ī 6.699**
	(2.671)	(2.678)	(2.684)	(2.668)	(2.675)	(2.681)
Financial slack	0.207	0.209	0.205	0.267	0.269	0.265
	(0.628)	(0.628)	(0.628)	(0.629)	(0.628)	(0.628)
Stock run-up	ī 0.012***	ī 0.012***	ī 0.012***	ī 0.011***	ī 0.011***	ī 0.011***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Stock volatility	ī 0.350**	ī 0.350**	ī 0.351**	ī 0.352**	ī 0.351**	ī 0.352**
	(0.171)	(0.171)	(0.170)	(0.170)	(0.170)	(0.170)
Market run-up	0.014*	0.014*	0.014*	0.013	0.013	0.013
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Market volatility	0.352	0.346	0.360	0.330	0.323	0.338
	(0.412)	(0.412)	(0.412)	(0.411)	(0.412)	(0.412)
Relative issue size	ī 0.413	ī 0.421	ī 0.401	ī 0.347	ī 0.356	ī 0.337
	(0.731)	(0.729)	(0.729)	(0.729)	(0.728)	(0.727)
Years-to-maturity(LN)	ī 0.498**	ī 0.492*	ī 0.506*	ī 0.472*	ī 0.465*	ī 0.479*
	(0.254)	(0.263)	(0.262)	(0.255)	(0.264)	(0.263)
Credit enhancer	0.738	0.726	0.752	0.787	0.773	0.799
	(0.821)	(0.826)	(0.823)	(0.816)	(0.820)	(0.817)
Call protection dummy	ī 0.662**	ī 0.670**	ī 0.653**	ī 0.555*	ī 0.564*	ī 0.547*
	(0.315)	(0.321)	(0.318)	(0.322)	(0.328)	(0.326)
Public offering dummy	0.741***	0.748***	0.729***	0.748***	0.756***	0.738***
	(0.252)	(0.259)	(0.259)	(0.252)	(0.259)	(0.259)

Table 4.26: (continued)

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	0.541	0.537	0.548	0.553	0.547	0.558
	(0.496)	(0.497)	(0.496)	(0.497)	(0.498)	(0.497)
Number of bookrunner(s)	ī 0.385**	ī 0.386**	ī 0.386**	ī 0.348*	ī 0.349*	ī 0.349*
	(0.191)	(0.191)	(0.191)	(0.193)	(0.194)	(0.193)
Domestic bookrunners		ī 0.032			ī 0.036	
		(0.248)			(0.247)	
Regional bookrunners			0.046			0.040
			(0.250)			(0.249)
Reputable bookrunners				ī 0.346	ī 0.346	ī 0.345
				(0.255)	(0.254)	(0.254)
Constant	ī 19.915***	ī 19.890***	ī 19.948***	ī 20.129***	ī 20.100***	ī 20.157***
	(5.040)	(5.009)	(5.015)	(5.037)	(5.006)	(5.013)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-digit-SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,166	3,166	3,166	3,166	3,166	3,166
Adjusted R-squared	0.078	0.077	0.077	0.078	0.078	0.078

Table 4.27: German origin sample—Cross-sectional regression analysis (OLS) for the determinants of underwriting fees

This table presents the estimation results of the Cross-sectional OLS regression analysis for the determinants of underwriting fees on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in German origin over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	ī 0.042*	ī 0.042*	ī 0.042*	ī 0.034	ī 0.034	ī 0.034
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Financial leverage	ī 0.205	ī 0.202	ī 0.202	ī 0.228	ī 0.224	ī 0.224
	(0.197)	(0.197)	(0.196)	(0.201)	(0.200)	(0.200)
Return on assets	ī 2.320*	ī 2.308*	ī 2.311*	ī 2.318*	ī 2.304*	ī 2.308*
	(1.261)	(1.260)	(1.259)	(1.258)	(1.257)	(1.256)
Financial slack	ī 0.157	ī 0.159	ī 0.158	ī 0.117	ī 0.119	ī 0.118
	(0.129)	(0.129)	(0.129)	(0.124)	(0.124)	(0.124)
Stock run-up	ī 0.000	ī 0.000	ī 0.000	ī 0.000	ī 0.000	ī 0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Stock volatility	0.035	0.035	0.035	0.034	0.034	0.034
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Market run-up	0.004*	0.004*	0.004*	0.003	0.003	0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Market volatility	0.093	0.096	0.096	0.075	0.078	0.078
	(0.099)	(0.099)	(0.099)	(0.104)	(0.103)	(0.103)
Relative issue size	ī 0.172	ī 0.169	ī 0.169	ī 0.145	ī 0.141	ī 0.141
	(0.154)	(0.154)	(0.154)	(0.149)	(0.149)	(0.149)
Years-to-maturity(LN)	0.329***	0.328***	0.328***	0.321***	0.320***	0.320***
	(0.064)	(0.064)	(0.064)	(0.065)	(0.065)	(0.065)
Credit enhancer	ī 0.139	ī 0.135	ī 0.135	ī 0.123	ī 0.118	ī 0.119
	(0.253)	(0.253)	(0.253)	(0.258)	(0.258)	(0.258)
Call protection dummy	0.219**	0.219**	0.219**	0.261**	0.262**	0.262**
	(0.110)	(0.110)	(0.110)	(0.104)	(0.104)	(0.104)
Public offering dummy	0.048	0.047	0.047	0.050	0.049	0.049
	(0.066)	(0.066)	(0.066)	(0.066)	(0.066)	(0.066)
S&P rated bond dummy	0.069	0.072	0.071	0.073	0.076	0.075
	(0.079)	(0.079)	(0.079)	(0.079)	(0.078)	(0.079)

Table 4.27: (continued)

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Number of bookrunner(s)	0.248	0.248	0.248	0.264	0.264	0.264
	(0.160)	(0.160)	(0.160)	(0.164)	(0.164)	(0.164)
Domestic bookrunners		0.013			0.014	
		(0.037)			(0.038)	
Regional bookrunners			0.011			0.013
			(0.037)			(0.037)
Reputable bookrunners				ī 0.144**	ī 0.144**	ī 0.144**
				(0.061)	(0.061)	(0.061)
Constant	1.256***	2.038***	1.246***	1.230***	2.023***	1.219***
	(0.352)	(0.470)	(0.350)	(0.347)	(0.468)	(0.346)
Observations	1,525	1,525	1,525	1,525	1,525	1,525
Adjusted R-squared	0.134	0.133	0.133	0.138	0.137	0.137

Table 4.28: German origin sample—Cross-sectional regression analysis (OLS) for the determinants of convertible bond offering yields

This table presents the estimation results of the Cross-sectional OLS regression analysis for the determinants of convertible bond offering yields on domestic bookrunners, regional bookrunners and reputable bookrunners for a sample of global convertible bond offerings in German origin countries over the period 1984 to 2015. The detailed definition of all variables are provided in Appendix A. The robust standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
Firm size	0.033	0.039	0.041	0.063	0.073	0.075
	(0.067)	(0.068)	(0.068)	(0.071)	(0.072)	(0.072)
Financial leverage	ī 0.226	ī 0.179	ī 0.156	ī 0.288	ī 0.223	ī 0.201
	(0.602)	(0.611)	(0.609)	(0.609)	(0.614)	(0.612)
Return on assets	ī 0.178	ī 0.132	ī 0.103	ī 0.125	ī 0.056	ī 0.024
	(0.905)	(0.899)	(0.895)	(0.901)	(0.892)	(0.889)
Financial slack	0.438	0.408	0.397	0.516	0.477	0.468
	(0.561)	(0.560)	(0.560)	(0.576)	(0.574)	(0.574)
Stock run-up	ī 0.010**	ī 0.010**	ī 0.010**	ī 0.010**	ī 0.010**	ī 0.010**
	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)
Stock volatility	0.552***	0.550***	0.549***	0.559***	0.556***	0.554***
	(0.200)	(0.201)	(0.200)	(0.200)	(0.200)	(0.200)
Market run-up	0.009	0.009	0.009	0.008	0.008	0.008
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Market volatility	0.151	0.182	0.198	0.086	0.128	0.143
	(0.317)	(0.324)	(0.322)	(0.323)	(0.328)	(0.327)
Relative issue size	1.187	1.233	1.262	1.361	1.436	1.469
	(1.229)	(1.229)	(1.231)	(1.241)	(1.244)	(1.247)
Years-to-maturity(LN)	ī 0.773***	ī 0.809***	ī 0.829***	ī 0.760***	ī 0.810***	ī 0.831***
	(0.251)	(0.258)	(0.261)	(0.249)	(0.257)	(0.259)
Credit enhancer	ī 2.418*	ī 2.351*	ī 2.344*	ī 2.348*	ī 2.247*	ī 2.247*
	(1.321)	(1.315)	(1.303)	(1.344)	(1.335)	(1.321)
Call protection dummy	ī 2.151***	ī 2.088***	ī 2.066***	ī 1.797***	ī 1.688***	ī 1.663***
	(0.551)	(0.564)	(0.560)	(0.511)	(0.527)	(0.523)
Public offering dummy	0.945***	0.880***	0.842***	0.954***	0.860***	0.821***
	(0.193)	(0.205)	(0.202)	(0.193)	(0.204)	(0.201)

Table 4.28: (continued)

	1	2	3	4	5	6
Variables	All	Domestic	Regional	Reputable	Domestic & Reputable	Regional & Reputable
S&P rated bond dummy	ī 0.530	ī 0.510	ī 0.503	ī 0.491	ī 0.460	ī 0.454
	(0.658)	(0.651)	(0.652)	(0.649)	(0.640)	(0.640)
Number of bookrunner(s)	0.216	0.215	0.208	0.269*	0.271*	0.263
	(0.160)	(0.159)	(0.160)	(0.162)	(0.159)	(0.161)
Domestic bookrunners		0.184			0.266	
		(0.180)			(0.186)	
Regional bookrunners			0.283			0.368*
			(0.182)			(0.189)
Reputable bookrunners				ī 0.670**	ī 0.702**	ī 0.714**
				(0.317)	(0.323)	(0.323)
Constant	1.418	1.234	1.247	1.042	0.758	0.796
	(1.714)	(1.709)	(1.714)	(1.669)	(1.663)	(1.669)
Observations	2,180	2,180	2,180	2,180	2,180	2,180
Adjusted R-squared	0.272	0.272	0.272	0.275	0.275	0.275

5 Conclusion

My thesis examines three different key areas of international convertible bond offerings including the market reaction and its determinants, the determinants of bookrunner selection in the underwriting market and the outcomes of bookrunner selection for a sample of 11,350 deals issued by convertible bond issuers worldwide from 1984 to 2015.

These three issues are interrelated. The first issue on market reaction and its determinants concerns corporate issuers in identifying the direction of stock price reactions and possible determinants to design convertible bond contracts that can enhance the wealth of shareholders. It is important for issuing firms to identify the movement of stock price reactions in respond to different countries, industrial classifications and stated proceeds of convertible bond offerings. My further analysis on the determinants of the stock price reaction provides issuers with new information to identify the significant factors that can improve the stock price reactions following the announcements of convertible bond offerings.

The second issue helps issuers to identify the possible determinants of reputable and geographic proximate bookrunner selection in convertible bond market. Corporate treasurers may want to study whether firm-specific, issue-specific, market-specific and country-specific factors can have significant impact on the likelihood of hiring domestic, regional and reputable bookrunners in providing debt value certification. Issuing firms without investigating the capacity and determining factors may fail to hire the most suitable bookrunners and may incur more cost in issuing debt.

The third issue concerns about issuers in choosing the correct type of bookrunner to gain certification of debt value in underwriting services that could improve the market reaction and pricing terms. A rationale corporate treasurer will choose the bookrunners that can deliver them with more superior underwriting outcome of stock price reaction, underwriting fees and offering yields at-issue. My further analysis on the outcome of bookrunner based on the issuing firm region provides important implications for issuers to evaluate the performance of bookrunners across different regions.

5.1 Summary of empirical findings

5.1.1 Stock market reaction and its determinants to convertible bond offerings worldwide

My first empirical chapter examines if there is different stock price reaction in respond to different countries, industrial classifications and stated purpose of offerings. I also provide detailed analysis on the key determinants of the stock price reaction surrounding the announcements of convertible bond offerings. The main theoretical rationale suggests that convertible bond issuers are expected to experience negative stock price reactions due to asymmetric information and adverse selection effect (Myers and Majluf, 1984; Kim, 1990; Stein, 1992). Moreover, the literature points out that institutional factors including corporate governance systems, different industrial classification and the different reasons for the offerings in different countries could have impact on the market reaction (McConnell and Muscarella, 1985; Eckbo, 1986; Smith, 1986; Linn and Pinegar, 1988; Kang and Stulz, 1996; Dutordoir et al., 2016).

The different market reactions of convertible bond offerings could be influenced by the issue-specific, firm-specific and market-specific via default risk, information asymmetry, market conditions and bond designs (Lewis et al., 2003; Duca et al., 2012; Dutordoir et al., 2016). A number of studies also highlight country level factors for instance short-sale bans, economic growth, market capitalization, government debt and investor protection could have an impact on the stock price reactions (La Porta et al., 1997; La Porta et al., 2000; Dutordoir and Gucht, 2007; De Jong et al., 2012; Badoer and James, 2016). Moreover, some studies argue that the designs of bond contract particularly the rating, conversion premium, DELTA, call provision, private placements and multiple tranches could also influence the stock price reactions of debt offerings (Fields and Mais, 1991; Stein, 1992; Lewis, Rogalski, and Seward, 1999; Yasuda, 2005; Ammann, Fehr, and Seiz, 2006; De Jong et al., 2012; Duca et al., 2012). Thus, in this chapter I examine the main potential factors in explaining the stock price reactions with respect to convertible bond offerings.

I test the stock price reactions by using standard event study methodology to estimate three-day cumulative average abnormal stock returns of the announcements of convertible bonds in different countries, regions, industrial classifications and purpose of offerings. My results show that the stock prices of convertible bond issuers react differently to different countries, regions, industrial classifications and stated purpose of offerings. In particular, I find that U.S., Japanese, European, U.K. and Canadian convertible issuers face significant negative stock price reactions. While, issuers in Asia and Australia & New Zealand regions experience a positive market reaction. Additionally, I also find that stock prices of industrial issuers in

Western Europe, U.K., U.S. and Anglo-Saxon regions have a negative market reaction, while industrial issuers domiciled in Asia and Australia and New Zealand experience positive stock price reactions.

My results on the market reaction of industrial issuers to different purposes of convertible offerings document that issuers from the U.S., Canada and Europe react negatively to capital expenditure. This finding is in line with the explanation of Heaton (2002) that the negative impact of the increase capital investment could reflect optimistic managers taking negative net present value projects. Convertible bond issuers domiciled in Asia experience significantly positive market returns and issuers based in Japanese, Canadian, U.K. and U.S. react significantly negatively to debt refinancing. The evidence of positive impact of debt refinancing could suggest that firms refinance to exploit tax benefits of debt in pursuing optimal capital structure (see Fischer, Heinkel, and Zechner, 1989, Welch, 2004, Leary and Roberts, 2005). The negative impact of debt refinancing may suggest that firms are more likely to bear greater costs due to asset substitution problem (Green, 1984) and adverse selection costs (Brennan and Kraus, 1987; Brennan and Schwartz, 1988). Convertible bond issuers in Australia and New Zealand react positively, but firms in Western Europe, U.K., Canada and U.S. react negatively to general corporate purpose. The results are supportive of Dutordoir et al. (2016) that the negative reaction of corporate purpose driven offerings could be due to involvement of issuers in targeting for opportunistic timing motives.

My regression results show firm size, financial leverage, stock run-up, financial slack and year-to-maturity have negative impact on stock price reactions. While, market run-up and market return volatility have a positive impact on the stock price of the issuing firms. Further analysis shows that country-level, investor protection and bond market access factors have significant impact on the stock price reactions of convertible bond issuers. This result provides useful information to convertible bond issuers to design the best features of offering contracts that could alleviate the negative stock price reactions and asymmetric information. For instance, I find that bond with longer maturity is negatively associated with stock price reaction while bond with multiple tranches is positively related with stock price movement. This suggests that issuers should issue convertible bonds with shorter maturity and more tranches of offerings.

Overall, I find that the movement of stock price reaction following the announcements of convertible bonds differ significantly between countries, industrial classifications and stated proceeds of convertible bond offerings. My regression analysis show that firm-specific, issue-specific, market-specific, country-specific and legal system factors could explain why the stock prices of issuing firms react differently to convertible bond offerings.

5.1.2 The determinants of geographic proximate and reputable bookrunner selection

My second empirical chapter examines the key variables determining the selection of domestic, regional and reputable bookrunners. In this chapter I consider a sample of 8,069 convertible bond deals issued by industrial issuers for a sample period covering 1984 to 2015. There are two key reasons why bookrunner selection is an important decision for corporate issuers in raising capital. First, a financial intermediary is capable to mitigate asymmetric information between potential investors and issuers (Diamond, 1984). Second, bookrunner selection provides issuers with extensive bookbuilding process including information production, certification, analyst coverage and market making (Corwin and Schultz, 2005).

The geographical location of the bookrunner is one of the main choices in determining bookrunner selection in underwriting. Soft information attained through lending relationship could make local investment banks more comparative in providing underwriting services (Butler, 2008; Lau and Yu, 2010). Rajan, Seru, and Vig (2010; 2015) claim that the costs of ignoring soft information are relatively large. However, the soft information advantage maintained by the local bookrunners could be offset by the lack of placement skills on debt offerings and may result in providing poor underwriting performance (Lau and Yu, 2010).

Bookrunner reputation is another matter to be considered by corporate issuers in choosing a bookrunner to manage their debt offerings. In particular, the reputation of the financial intermediary serves a bonding mechanism with issuers to mitigate the asymmetric information problem and certify the value of debt in capital raising (Booth & Smith, 1986; Chemmanur & Fulghieri, 1994). In addition, reputable bookrunners could provide better placement in managing the complexity design of certain debt offerings (Carbó-Valverde et al., 2017; Corwin and Schultz, 2005; Fang, 2005). Nonetheless, dominant bookrunners could also use their market power to exploit rents from corporate issuers through issuing risky debt with higher fees (Gopalan, Nanda, and Yerramilli, 2011; Andres, Betzer, & Limbach, 2014).

I test the determinants of bookrunner selection using probit regression analysis with year dummies and clustered standard errors. I also use ordinary least squares and Tobit regression analysis to check the robustness of my baseline regression results. Domestic and regional bookrunners are the most visible and direct proxy for bookrunner geography (Lau and Yu, 2010). In considering different bookrunner structures in global debt offerings, bookrunner reputation is measured by a combination of Top-21 in global and Top-3 country level in convertible market share rankings. I control for additional contributing factors from two different main sources of literature on bookrunner geography (Butler, 2008; Lau and Yu, 2010) and bookrunner reputation (Corwin and Schultz, 2005; Fang, 2005; Carbó-Valverde et al.,2017).

My main results on the bookrunner geography selection show that domestic and regional bookunners are positively associated with publicly offered, longer maturity, and risky bonds and a syndicate bookrunner. This suggests that domestic and regional bookrunners could have more advantages in using their soft information advantage in underwriting publicly offered, longer maturity and risky convertible bond offerings. This finding confirms the predictions by Butler (2008) that local banks have strongest comparative advantage to assess soft information of issuers and underwrite bonds with higher credit risk. This it because the local banks have better private information of the future prospects of issuers with risky bonds whether they can meet the debt obligations prior to provide debt value certification.

My results on bookrunner reputation show that reputable bookrunner are more likely to offer underwriting services to corporate firms with larger firm size, higher financial slack and higher stock run-up and lower stock return volatility. This confirms Fang (2005)ôs arguments that reputable bookrunners are incentivised to underwrite larger and less risky corporate firms to maintain their reputation and obtain higher fees in providing certification role for their clients. Additionally, I find that reputable bookrunners underwrite bonds with longer maturity and call option. This confirms the ability of reputable underwriters in bookbuilding and placing complex bond offerings (Carbó-Valverde et al., 2017; Andres et al., 2014; Fang, 2005). I also find that reputable underwriters tend to place convertible bond with low or no credit rating. This may suggest that reputable underwriters use their market-power to gain underwriting contracts from issuers by issuing risky convertible bonds. Interestingly, I find that reputable bookrunners are more likely to invite other syndicate members to bookbuild and place convertible bond offerings. Additionally, I document contradictory results that reputable bookrunners prefer to underwrite lower risk firms but are also more likely to underwrite risky bonds. This suggests that reputable bookrunners may use their market power to underwrite risky convertible bonds but preferably to issuing firms with larger firm size to reduce their reputational damage.

In summary, I find that domestic and regional bookunners are more likely to underwrite publicly offered, longer maturity and risky bonds. They also prefer to invite other bookrunners to participate in providing underwriting services. On the other hand, I find that reputable bookrunners are more likely to provide underwriting services to issuers large in firm size, higher financial slack and higher stock run-up and lower stock return volatility. I also document that reputable bookrunners prefer to underwrite convertible bonds with longer maturity, call protection and unrated features. In addition, reputable bookrunners also likely to invite other syndicate members in underwriting convertible bond offerings.

Further testing show that the scope of service provided by bookrunner to the issuer in the past have significant impact on the bookrunner selection. I find that economies of scale benefits domestic bookrunner and reputable bookrunners to gain convertible bond contracts from corporate firms. This is in line with Fang (2005) that the underwriters with economies of scale have more extensive distributional networks and superior private informational advantage in underwriting. Nonetheless, I find that regional bookrunners do not enjoy benefits with economies of scale in gaining underwriting deals in convertible bonds. The economies of scale is defined as the top 3 country level bookrunner or Top 21 global bookrunner that has served the issuer in the past five years in M&A, equity and bond issuance prior to the convertible bond issue.

5.1.3 The outcomes of geographic proximate and reputable bookrunner selection

My third empirical chapter addresses the outcome of bookrunner selection in global convertible bond offerings. This is an interesting study as the structure of bookrunner composition is shown to vary across different regions and thus the findings could offer a wide range of possible suggestions to practitioners across these regions. Prior literature does suggest that the capital structure of firms in making security issuance decisions differs across regions ((Rajan and Zingales, 1995; Henderson, Jegadeesh, and Weisbach, 2006; Kim and Weisbach, 2008). However, few studies have explored the price and quality of bookrunner selection between regions. In addition, most studies evaluate outcomes of underwriter selection based on the fees and yields only but ignore the overall stock price reaction which I consider in this study (Butler, 2008; Fang, 2005; Lau & Yu, 2010; McCahery & Schwienbacher, 2010; Lou & Vasvari, 2013).

Bookrunner reputation provides a certification role to alleviate costly asymmetric information for the corporate firms to raise capital from the potential investors (Booth and Smith, 1986; Chemmanur and Fulghieri, 1994). In particular, Fang (2005) finds that reputable investment banks offer superior quality underwriting services to deliver better bond pricing for their clients for higher underwriting fees. The bookrunner geography is alternative point to be considered by issuers. Local banks have better access to soft information about issuers acquired through lending relationship and therefore could provide substantial comparative and absolute advantages over nonlocal counterparts in delivering superior quality in terms of lower fees and lower bond yields (Butler, 2008; Lau and Yu, 2010).

My main results show that domestic bookrunners are associated with a more positive stock price reaction and lower fees. I find that regional bookrunners deliver positive market reaction with higher yields at-issue. On the other hand, I also find that reputable bookrunners offer their clients lower fees, lower yields and have a positive market reaction. This suggests that convertible bond issuers enjoy superior certification role offered by reputable boookrunners in obtaining better price reactions for lower costs. This is inconsistent with Fang (2005) who finds higher fees and lower yields in nonconvertible bond offerings. A reasonable explanation could be due to the competition resulting from commercial bank entry and bank consolidation provides a more competitive environment in underwriting market and reputable underwriters are forced to offer lower fees to get the bookbuilding contracts from clients (Andres, Betzer, and Limbach, 2014).

My results show that bookrunner performance varies between regions depending on the bookrunner selection. I find that domestic and regional bookrunners in the North America region obtain negative stock price reaction with higher bond yields at-issue. Reputable bookrunners offer lower fees, lower yields and negative price reactions. Evidently, reputable bookrunners offer better quality of obtaining lower fees and lower yields for their issuers. Nevertheless, the negative stock price reaction could be beyond the control of bookrunners in underwriting because convertible bond offerings made in North America may subject short selling downward pressure created by convertible bond arbitrageurs and hedge fund managers. (Choi et al., 2009; De Jong et al., 2012; Grundy & Verwijmeren, 2018).

My regression results show that domestic, regional and reputable bookrunners in Japan region deliver issuing firms with higher fees and higher yields. This evidence may suggest the presence of market power to exploit convertible bond issuers with higher fees and higher yields for obtaining debt value certification. On the other hand, I find that reputable bookrunners offer lower underwriting fees to issuing firms.

The results from regressions on the bookrunner performance in European region show that domestic bookrunners deliver positive stock price reaction, lower fees and lower yields at-issue. I further show that regional bookrunners deliver positive stock price reaction with lower yields. However, reputable bookrunners deliver poor underwriting quality with a negative market reaction. This is consistent with Butler (2008) who finds that the geographical proximity of bookrunners provides higher quality of underwriting due to soft information advantage. Finally, I show that domestic and regional bookrunners in Asia Pacific region obtain positive stock price reaction for convertible bond issuers. However, I show that reputable bookrunners in Asia pacific region offer their clients with negative stock price reaction with lower fees. This implies that domestic and bookrunners have better access to private information of issuing firms and could provide better underwriting outcome.

In summary, I find that reputable bookrunners offer better underwriting outcomes to their clients in North America and Japan regions. On the other hand, I show that domestic and regional bookrunners deliver better quality underwriting services to convertible bond issuers in European and Asia Pacific regions. The condition of the convertible market, methods and stated purpose of convertible bond offerings, sources of available bookrunners, legal environment and country-specific factors could be the reasons to why the presence of different outcome of bookrunner selection.

5.2 Overall contribution of the thesis

The main contributions of this thesis is to address the market reaction and its determinants in seven main regions following the international convertible bond offerings. This is motivated by Kim and Weisbach (2008) and Henderson, Jegadeesh, and Weisbach (2006) who highlight the need to explore whether different corporate governance policies in different regions affect the motivations in global securities issuance.

Second, I provide a more comprehensive examination whether stock prices of convertible bond issuers react differently to different country, industrial groups and purpose of convertible bond offerings. This is interesting to provide a robust investigation for issuers to understand the stock price reactions. Issuers could benefit from this investigation to know how to design the convertible bond that could reduce the negative impact of convertible bond announcements on the stock price reactions. Investors could obtain more accurate information to know how the stock price of convertible issuers react to certain features of offerings.

Third, I contribute to investigate what are the potential determinants of reputable bookrunner and geographic proximate bookrunner selections in international convertible bond offerings. To my knowledge, these two areas of financial intermediary are examined separately on either reputation (Carbó-Valverde et al., 2017; Andres et al., 2014; Fang, 2005) or geographic distance (Lau and Yu, 2010; Butler, 2008) in corporate bond offerings. It is important for corporate treasurers to identify and hire the most suitable bookrunner in underwriting convertible bond offerings.

Fourth, I also contribute to the global and country-level league table constructions on the investment bank ranking to reveal the leading and active investment banks in international convertible bond offerings. This provides important information to key players in knowing the ranking and market share of bookrunner in convertible bond underwriting market. Corporate issuers could easily identify number of active bookrunners in certain country and region.

Fifth, I contribute to examine the price and quality of two different literatures of geographic proximate and reputable bookrunners selection on the CARs, underwriting fees and offering yields in international convertible bond offerings. Since convertible bond has an equity feature and thus it is important to offer the performance of stock price reaction following the convertible bond issuance.

Sixth, I contribute to perform what-if analysis based on switching regressions to draw a more reliable inferences on the price and quality of bookrunner performance between regions. This is important to draw a reliable inference to key players in the convertible underwriting market on the effects of reputable and proximate bookrunners if they were to underwrite convertible deals underwritten by their counterparts.

5.3 Importance and relevance to key players

This study has some suggestions to the main parties in the convertible bond underwriting market. My findings on the market reaction following convertible bond announcements are important to issuing firms in accessing the convertible bond market worldwide. The analysis on the key factors determining the stock price reactions provides additional useful information to convertible bond issuers in main regions to identify the potential benefits that favour convertible bond offerings to better improve wealth effect of shareholders and mitigate asymmetric information. My findings may bring benefits to the convertible arbitrageurs and hedge fund managers to plan the most profitable investment plans to gain potential profits from the convertible bond market (Grundy and Verwijmeren, 2018).

Additionally, corporate borrowers could better evaluate the determining factors of bookrunners in international convertible bonds. Bookrunners could benefit from this study by focusing and establishing their underwriting networks in strengthening their economies of scale to better obtain underwriting contracts and distribute convertible bond offerings to the potential investors. For example, I find that the reputable bookrunner who has served issuer in the past five years in M&A, equity and bond issuance is more likely to be hired in providing underwriting services to convertible bond issuers.

Taken together, my results show that the underwriting performance offered by bookrunners is not equally distributed between bookrunner geography and bookrunner reputation selections across regions. Issuers could benefit from this study by analysing the price and quality of hiring bookrunner and choose the most rewarding bookrunner to certify the quality of the convertible bond offerings. My findings could help financial regulators across regions to have better assessment on the performance of underwriting banks and to design a better monitoring mechanisms in the convertible bond underwriting market. For example, I document that reputable bookrunners perform better in North America and Japan regions, while domestic and regional bookrunners deliver better quality underwriting outcomes to issuers in European and Asia Pacific regions. This evidence provides new information to both issuers and financial regulators on the quality of underwriting delivered by bookrunners across different regions.

In summary, I find that reputable bookrunners offer better underwriting outcomes to their clients in North America and Japan regions. On the other hand, I show that domestic and regional bookrunners deliver better quality underwriting services to convertible bond issuers in European and Asia Pacific regions.

5.4 Areas for future research

In this section I provide potential areas for future research arising from my three empirical chapters.

5.4.1 Stock market reaction and its determinants to convertible bond offerings worldwide

My study on stock market reaction could be extended by examining the stock price reactions for deals without bookrunners and self-underwritten. This could determine the negative impact of asymmetric information faced by issuers without hiring financial intermediary and self-underwrite risky and complex convertible bond deals. It would be interesting to examine what are the determinants of stock price reactions of these types of firms and the comparison of returns to underwritten and self-underwritten deals.

It would be interesting to study impact of convertible arbitrage and hedge funds through short-selling activities on the stock price reactions following the convertible bond offerings. Some studies argue that these activities could create more negative impact on the stock price reactions (Grundy and Verwijmeren, 2018) but its impact on the global corporate issuers remain unknown.

5.4.2 The determinants of geographic proximate and reputable bookrunner selection

Future study should consider to examine the determinants of both bookrunner geography and bookrunner reputation in other debt markets for instance high-yield bonds and private investment in private equity. The main reason is to know whether booookrunner selection is an important matter for corporate issuers in considering different structure of bookrunner syndicates in different debt and equity markets. Providing analysis on a type of bookrunner may not be able informative for readers in making informed decision in hiring the best or a combination of bookrunner in bookbuilding.

It would be interesting to examine the determinants of bookrunner selection in cross-border corporate bond underwriting market. Lau and Yu (2010) is the only study I am aware have examined the determinants of proximate banks in this market but they do not extend to examine the key determining factors of top-tier underwriters. This can further enhance our understanding whether reputable underwriters could offer more comparative advantages in underwriting in comparison to local banks.

5.4.3 The outcomes of geographic proximate and reputable bookrunner selection

It would be interesting to see future study to examine the impacts of geographic proximate and reputable bookrunner selection in other debt markets for example high-yield bonds. This provides better understanding to issuers which type of bookrunner offer them better cost and benefit in underwriting. This is important as issuers with high-yield bonds could face more asymmetric information due to its risky nature than straight debt offerings.

It is also worthwhile for future study to extend this study by investigating the bookrunner performance for firms that experience downgrades to their credit risk in convertible bond markets. This could provide issuers whether reputable and local underwriters exploit their market power to provide poor underwriting performance. Andres, Betzer, and Limbach (2014) have provided evidence that reputable underwriters are associated with significantly higher downgrade and default risk of high-yield bond issuers.

5.5 Limitations of the study

This study has some caveats. In my sample, I focus on deals underwritten by designated bookruners as specified by SDC. I do not include self-issued deals and self-underwritten deals. This means that the questions on the stock price reaction and its potential determinants on these particular offerings remain unsolved.

Moreover, domestic and regional bookrunners are measured by a dummy variable due to no detailed information provided by SDC on the specific address of both bookrunner and the issuer. As a result, the bookrunner geography measure may not be able to capture the exact distance between the convertible bond issuer and the underwriting bank. This is important for bookrunners to evaluate the worthiness of expanding bank outreach located closer to firms.

Furthermore, I find that some of the explanatory variables do not have complete number of observations. This could be due to missing data on certain issuing firms maintained by SDC and Worldscope. As a result, the missing data has reduced the overall sample in the empirical analysis for making more robust inference.

6 References

Abhyankar, Abhay, and Alison Dunning, 1999, Wealth effects of convertible bond and convertible preference share issues: An empirical analysis of the UK market, *Journal of Banking and Finance* 23, 1043ï 1065.

Agarwal, Sumit, and Robert Hauswald, 2010, Distance and private information in lending, *The Review of Financial Studies* 23, 2757ï 2788.

Akerlof, George A, 1970, The market for ñLemonsò: Quality uncertainty and the market mechanism, *The Quarterly Journal of Economics* 84, 488ï 500.

Alexandridis, G., D. Petmezas, and N.G. Travlos, 2010, Gains from mergers and acquisitions around the world: New evidence, *Financial Management* 39, 1671ï 1695.

Allen, Franklin, 1984, Reputation and product quality, *The RAND Journal of Economics* 15, 311ï 327.

Altinklic, Oya, and Robert S Hansen, 2000, Are there economies of scale in underwriting fees? Evidence of rising external financing costs, *The Review of Financial Studies* 13, 191ï 218.

Ammann, Manuel, Kristian Blickle, and Christian Ehmann, 2017, Announcement effects of contingent convertible securities: Evidence from the global banking industry, *European Financial Management* 23, 127ï 152.

Ammann, Manuel, Martin Fehr, and Ralf Seiz, 2006, New evidence on the announcement effect of convertible and exchangeable bonds, *Journal of Multinational Financial Management* 16, 43ï 63.

An, Heng (Hunter), and Kam C Chan, 2008, Credit ratings and IPO pricing, *Journal of Corporate Finance* 14, 584ï 595.

Andres, Christian, André Betzer, and Peter Limbach, 2014, Underwriter reputation and the quality of certification: Evidence from high-yield bonds, *Journal of Banking & Finance* 40, 97ï 115.

Arena, Matteo P., and Michaël Dewally, 2017, Investment bank expertise in cross-border mergers and acquisitions, *Journal of Financial Research* 40, 81ï 112.

Arsiraphongphisit, Oraluck, 2008, The information conveyed by debt and equity announcements in Australia, *International Journal of Banking and Finance* 5.

Asquith, Paul, 1995, Convertible bonds are not called late, *The Journal of Finance* 50, 1275ï 1289.

Badoer, Dominique C., and Christopher M. James, 2016, The determinants of long-term corporate debt issuances, *The Journal of Finance* 71, 457ï 492.

Bae, Sung C., and Haim Levy, 1994, Investment banker prestige, competition, and underwriter compensation in U.S. seasoned new equity issues, *Global Finance Journal* 5, 37ï 54.

Baker, Malcolm, and Jeffrey Wurgler, 2002, Market timing and capital structure, *The Journal of Finance* 57, 1ï 32.

Bates, Thomas W., Kathleen M. Kahle, and René M. Stulz, 2009, Why do U.S. firms hold so much more cash than they used to?, *The Journal of Finance* 64, 1985ï 2021.

Bayless, Mark, and Susan Chaplinsky, 1996, Is there a window of opportunity for seasoned equity issuance?, *The Journal of Finance* 51, 253ï 278.

Beatty, Randolph P., and Jay R. Ritter, 1986, Investment banking, reputation, and the underpricing of initial public offerings, *Journal of Financial Economics* 15, 213ï 232.

Beber, Alessandro, and Marco Pagano, 2013, Short-selling bans around the world: Evidence from the 2007-09 crisis, *The Journal of Finance* 68, 343ï 381.

Beber, Alessandro, and Marco Pagano, 2013, Short-selling bans around the world: evidence from the 2007-09 crisis, *The Journal of Finance* 68, 343ï 381.

Berger, Allen N, Rebecca S Demsetz, and Philip E Strahan, 1999, The consolidation of the financial services industry: Causes, consequences, and implications for the future, *Journal of Banking & Finance* 23, 135ï 194.

Berger, Allen N, Nathan H Miller, Mitchell A Petersen, Raghuram G Rajan, and Jeremy C Stein, 2005, Does function follow organizational form? Evidence from the lending practices of large and small banks, *Journal of Financial Economics* 76, 237ï 269.

Berger, Allen N, and Gregory F Udell, 1995, Relationship lending and lines of credit in small firm finance, *The Journal of Business* 68, 351ï 381.

Bhojraj, Sanjeev, and Partha Sengupta, 2003, Effect of corporate governance on bond ratings and yields: The role of institutional investors and outside directors, *The Journal of Business* 76, 455ï 475.

Billett, Matthew T., Mark J. Flannery, and Jon A. Garfinkel, 1995, The Effect of Lender Identity on a Borrowing Firmôs Equity Return, *The Journal of Finance* 50, 699ï 718.

Billingsley, Randall S., Robert E. Lamy, and David M. Smith, 1990, Units of debt with warrants: Evidence of the ñpenalty-freeò issuance of an equity-like security, *Journal of Financial Research* 13, 187ï 199.

Bøhren, Øyvind, B. Espen Eckbo, and Dag Michalsen, 1997, Why underwrite rights offerings? Some new evidence, *Journal of Financial Economics* 46, 223ï 261.

Booth, James R., and Richard L. Smith, 1986, Capital raising, underwriting and the certification hypothesis, *Journal of Financial Economics* 15, 261ï 281.

Bradley, Daniel, Incheol Kim, and Laurie Krigman, 2015, Top VC IPO underpricing, *Journal of Corporate Finance* 31, 186ï 202.

Brennan, Michael J., and Eduardo S. Schwartz, 1988, The case for convertibles, *Journal of Applied Corporate Finance* 1, 55ï 64.

Brennan, Michael, and Alan Kraus, 1987, Efficient financing under asymmetric information, *The Journal of Finance* 42, 1225ï 1243.

Brown, Heather, 2011, Marriage, BMI, and Wages: A double selection approach, *Scottish Journal of Political Economy* 58, 347ï 377.

Brown, Stephen J., and Jerold B. Warner, 1985, Using daily stock returns, *Journal of Financial Economics* 14, 3ï 31.

Brown, Stephen J, Bruce D Grundy, Craig M Lewis, and Patrick Verwijmeren, 2012, Convertibles and hedge funds as distributors of equity exposure, *The Review of Financial Studies* 25, 3077ï 3112.

Burlacu, Radu, 2000, New evidence on the pecking order hypothesis¿ The case of French convertible bonds, *Journal of Multinational Financial Management* 10, 439ï 459.

Butler, Alexander W., 2008, Distance still matters: Evidence from municipal bond underwriting, *Review of Financial Studies* 21, 763ï 784.

Carbó-Valverde, Santiago, Pedro J. Cuadros-Solas, and Francisco Rodríguez-Fernández, 2017, Do banks and industrial companies have equal access to reputable underwriters in debt markets?, *Journal of Corporate Finance* 45, 176ï 202.

Carter, Richard B, Frederick H Dark, and Ajai K Singh, 1998, Underwriter Reputation, Initial Returns, and the Long-Run Performance of IPO Stocks, *The Journal of Finance* 53, 285ï 311.

Carter, Richard, and Steven Manaster, 1990, Initial Public Offerings and Underwriter Reputation, *The Journal of Finance* 45, 1045ï 1067.

Chae, Joon, 2005, Trading volume, information asymmetry, and timing information, *The Journal of Finance* 60, 413ï 442.

Chakraborty, Archishman, and Bilge Yilmaz, 2011, Adverse selection and convertible bonds, *The Review of Economic Studies* 78, 148ï 175.

Chang, Shao-Chi, Sheng-Syan Chen, and Yichen Liu, 2004, Why firms use convertibles: A further test of the sequential-financing hypothesis, *Journal of Banking & Finance* 28, 1163ï 1183.

Chang, Shao-Chi, Sheng-Syan Chen, and Yichen Liu, 2004, Why firms use convertibles: A further test of the sequential-financing hypothesis, *Journal of Banking & Finance* 28, 1163ï 1183.

Chemmanur, Thomas J., and Paolo Fulghieri, 1994, Investment bank reputation, information production, and financial intermediation, *The Journal of Finance* 49, 57ï 79.

Cheng, Wei, Nuttawat Visaltanachoti, and Puspakaran Kesayan, 2005, A stock market reaction following convertible bond issuance: Evidence from Japan, *International Journal of Business* 10, 1ï 25.

Chiu, Jeckle, Jacqueline Chiu, and Jason Elder, 2017, Convertible bonds: An issuerøs guide (Asia Edition), *Mayer Brown JSM*, 1ï 27.

Choe, Hyuk, Ronald W. Masulis, and Vikram Nanda, 1993, Common stock offerings across the business cycle, *Journal of Empirical Finance* 1, 3ï 31.

Choi, Darwin, Mila Getmansky, and Heather Tookes, 2009, Convertible bond arbitrage, liquidity externalities, and stock prices, *Journal of Financial Economics* 91, 227ï 251.

Choudhry, Moorad, 2010, *An Introduction to Bond Markets*. Fourth. (John Wiley and Sons, Ltd, West Sussex, United Kingdom).

Christensen, Donald G., Hugo J. Faria, Chuck C.Y. Kwok, and Marc Bremer, 1996, Does the Japanese stock market react differently to public security offering announcements than the US stock market?, *Japan and the World Economy* 8, 99ï 119.

Constantinides, George M, and Bruce D Grundy, 1989, Optimal investment with stock repurchase and financing as signals, *The Review of Financial Studies* 2, 445ï 465.

Cook, Douglas O., Carolin D. Schellhorn, and Lewis J. Spellman, 2003, Lender certification premiums, *Journal of Banking and Finance* 27, 1561ï 1579.

Corrado, Charles J, 1989, A nonparametric test for abnormal security-price performance in event studies, *Journal of Financial Economics* 23, 385ï 395.

Corwin, Shane A., and Paul Schultz, 2005, The role of IPO underwriting syndicates: Pricing, information production, and underwriter competition, *The Journal of Finance* 60, 443ï 486.

Coval, Joshua D., and Tobias J. Moskowitz, 2001, The geography of investment: Informed trading and asset prices, *Journal of Political Economy* 109, 811ï 841.

Cowan, Arnold Richard, 1992, Nonparametric event study tests, *Review of Quantitative Finance and Accounting* 2, 343ï 358.

Daniels, Kenneth N., and Jayaraman Vijayakumar, 2007, Does underwriter reputation matter in the municipal bond market?, *Journal of Economics and Business* 59, 500ï 519.

Dann, Larry Y., and Wayne H. Mikkelson, 1984, Convertible debt issuance, capital structure change and financing-related information. Some new evidence, *Journal of Financial Economics* 13, 157ï 186.

Datta, Sudip, Mai Iskandar-Datta, and Ajay Patel, 2000, Some evidence on the uniqueness of initial public debt offerings, *The Journal of Finance* 55, 715ï 743.

Datta, Sudip, Mai Iskandar-Datta, and Kartik Raman, 2005, Managerial stock ownership and the maturity structure of corporate debt, *The Journal of Finance* 60, 2333ï 2350.

Davidson, Wallace N., John L. Glascock, and Won Jon Koh, 1993, A test of the tax-induced leverage hypothesis in convertible securities: A note, *Journal of Business Finance & Accounting* 20, 99ï 106.

Davidson, Wallace N, John L Glascock, and Thomas V Schwartz, 1995, Signaling with convertible debt, *The Journal of Financial and Quantitative Analysis* 30, 425ï 440.

De Jong, Abe, Marie Dutordoir, Nathalie Van Genuchten, and Patrick Verwijmeren, 2012, Convertible arbitrage price pressure and short-sale constraints, *Financial Analysts Journal* 68, 70ï 88.

De Roon, Frans, and Chris Veld, 1998, Announcement effects of convertible bond loans and warrant-bond loans: An empirical analysis for the Dutch market, *Journal of Banking & Finance* 22, 1481ï 1506.

Diamond, Douglas W, 1984, Financial intermediation and delegated monitoring, *The Review of Economic Studies* 51, 393ï 414.

Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, 2008, The law and economics of self-dealing, *Journal of Financial Economics* 88, 430ï 465.

Djankov, Simeon, Caralee McLiesh, and Andrei Shleifer, 2007, Private credit in 129 countries, *Journal of Financial Economics* 84, 299ï 329.

Duca, Eric, Marie Dutordoir, Chris Veld, and Patrick Verwijmeren, 2012, Why are convertible bond announcements associated with increasingly negative issuer stock returns? An arbitrage-based explanation, *Journal of Banking and Finance* 36, 2884ï 2899.

Dunbar, Craig G, 1995, The use of warrants as underwriter compensation in initial public offerings, *Journal of Financial Economics* 38, 59ï 78.

Dutordoir, Marie, and Linda Van de Gucht, 2007, Are there windows of opportunity for convertible debt issuance? Evidence for Western Europe, *Journal of Banking and Finance* 31, 2828ï 2846.

Dutordoir, Marie, Hui Li, Frank Hong Liu, and Patrick Verwijmeren, 2016, Convertible bond announcement effects: Why is Japan different?, *Journal of Corporate Finance* 37, 76ï 92.

Eckbo, B.E., R.W. Masulis, and O. Norli, 2007, Chapter 6 ï Security Offerings, *Handbook of Empirical Corporate Finance*.

Eckbo, B.Espen, 1986, Valuation effects of corporate debt offerings, *Journal of Financial Economics* 15, 119ï 151.

Eckbo, B.Espen, and Ronald W. Masulis, 1992, Adverse selection and the rights offer paradox, *Journal of Financial Economics* 32, 293ï 332.

Elliott, John, Dale Morse, and Gordon Richardson, 1984, The association between insider trading and information announcements, *The RAND Journal of Economics* 15, 521ï 536.

Entorf, Horst, 2012, Expected recidivism among young offenders: Comparing specific deterrence under juvenile and adult criminal law, *European Journal of Political Economy* 28, 414ï 429.

Fang, Lily Hua, 2005, Investment bank reputation and the price and quality of underwriting services, *The Journal of Finance* 60, 2729ï 2761.

Fenech, Jean-Pierre, Michael Skully, and Han Xuguang, 2014, Franking credits and market reactions: Evidence from the Australian convertible security market, *Journal of International Financial Markets, Institutions and Money* 32, 1ï 19.

Fenn, George W, 2000, Speed of issuance and the adequacy of disclosure in the 144A high-yield debt market, *Journal of Financial Economics* 56, 383ï 405.

Fernando, Chitru S, Vladimir A Gatchev, Anthony D May, and William L Megginson, 2015, Prestige without purpose? Reputation, differentiation, and pricing in U.S. equity underwriting, *Journal of Corporate Finance* 32, 41ï 63.

Fernando, Chitru S, Vladimir A Gatchev, and Paul A Spindt, 2005, Wanna dance? How firms and underwriters choose each other, *The Journal of Finance* 60, 2437ï 2469.

Fields, L. Paige, and Eric L. Mais, 1991, The valuation effect of private placements of convertible debt, *Journal of Finance* 46, 1925ï 1932.

Fischer, Edwin O, Robert Heinkel, and Josef Zechner, 1989, Dynamic capital structure choice: Theory and tests, *The Journal of Finance* 44, 19ï 40.

Fons, Jerome S, 1994, Using default rates to model the term structure of credit risk, *Financial Analysts Journal* 50, 25ï 32.

Friedman, Benjamin M, 1978, Crowding out or crowding in? Economic consequences of financing government deficits, *Brookings Papers on Economic Activity* 1978, 593ï 641.

Gande, Amar, Manju Puri, and Anthony Saunders, 1999, Bank entry , competition , and the market for corporate securities underwriting, *Journal of Financial Economics* 54, 165ï 195.

Gande, Amar, Manju Puri, Anthony Saunders, and Ingo Walter, 1997, Bank Underwriting of Debt Securities: Modern Evidence, *The Review of Financial Studies* 10, 1175ï 1202.

Gao, Xiaohui, and Jay R. Ritter, 2010, The marketing of seasoned equity offerings, *Journal of Financial Economics* 97, 33ï 52.

Godlewski, Christophe J, 2014, Bank loans and borrower value during the global financial crisis: Empirical evidence from France, *Journal of International Financial Markets, Institutions and Money* 28, 100ï 130.

Golubov, Andrey, Dimitris Petmezas, and Nickolaos G Travlos, 2012, When it pays to pay your investment banker: New evidence on the role of financial advisors in M&As, *The Journal of Finance* 67, 271ï 311.

Gopalan, Radhakrishnan, Vikram Nanda, and Vijay Yerramilli, 2011, Does Poor Performance Damage the Reputation of Financial Intermediaries? Evidence from the Loan Syndication Market, *The Journal of Finance* 66, 2083ï 2120.

Graham, John, Mark T. Leary, and Michael R. Roberts, 2014, How does government borrowing affect corporate financing and investment?, *NBER Working Paper*, 1ï 53.

Green, Richard C., 1984, Investment incentives, debt, and warrants, *Journal of Financial Economics* 13, 115ï 136.

Grundy, Bruce D, and Patrick Verwijmeren, 2018, The buyersô perspective on security design: Hedge funds and convertible bond call provisions, *Journal of Financial Economics* 127, 77ï 93.

Hair, J., W. C. Black, B. J. Babin, and R. E. Anderson, 2010, *Multivariate Data Analysis*. 7th ed. (Pearson Education International., Upper saddle River, New Jersey).

Hansen, Robert S, and Claire Crutchley, 1990, Corporate earnings and financings: An empirical analysis, *The Journal of Business* 63, 347ï 371.

Hauswald, Robert, and Robert Marquez, 2006, Competition and strategic information acquisition in credit markets, *The Review of Financial Studies* 19, 967ï 1000.

Hayes, Samuel, 1971, Investment banking: power structure in flux., *Harvard Business Review* 49, 136ï 152.

Heaton, J B, 2002, Managerial optimism and corporate finance, *Financial Management* 31, 33ï 45.

Heckman, James J, 1978, Dummy endogenous variables in a simultaneous equation system, *Econometrica* 46, 931ï 959.

Heckman, James J, 1979, Sample selection bias as a specification error, *Econometrica* 47, 153ï 161.

Helwege, Jean, and Christopher M Turner, 2002, The slope of the credit yield curve for speculative-grade issuers, *The Journal of Finance* 54, 1869ï 1884.

Henderson, Brian J., Narasimhan Jegadeesh, and Michael S. Weisbach, 2006, World markets for raising new capital, *Journal of Financial Economics* 82, 63ï 101.

Hinkle, D.E., W. Wiersma, and S.G Jurs, 2003, *Applied Statistics for the Behavioral Sciences*. 5th ed. (Mifflin, Houghton, Boston).

Humphery-Jenner, Mark, Sigitas Karpavicius, and Jo-Ann Suchard, 2018, Underwriter relationships and shelf offerings, *Journal of Corporate Finance* 49, 283ï 307.

Hunter, William C., and Julapa Jagtiani, 2003, An analysis of advisor choice, fees, and effort in mergers and acquisitions, *Review of Financial Economics* 12, 65ï 81.

Iannotta, Giuliano, 2010, *Investment Banking*. First. (Springer-Verlag Berlin Heidelberg).

Impson, Michael, 1997, Market reaction to dividend-decrease announcements: Public utilities vs. unregulated industrial firms, *The Journal of Financial Research* 20, 407ï 422.

Isagawa, Nobuyuki, 2002, Managerial opportunism and capital structure adjustments: Equityï forï debt swap and convertible debt, *International Review of Finance* 3, 53ï 69.

Ismail, Ahmad, 2010, Are good financial advisors really good? The performance of investment banks in the M&A market, *Review of Quantitative Finance and Accounting* 35, 411ï 429.

Janjigian, Vahan, 1987, The leverage changing consequences of convertible debt financing, *Financial Management* 16, 15ï 21.

Jen, Frank C, Dosoung Choi, and Seong-Hyo Lee, 1997, Some new evidence on why companies use convertible bonds, *Journal of Applied Corporate Finance* 10, 44ï 53.

Jensen, Michael C, 1986, Agency costs of free cash flow, corporate finance, and takeovers, *The American Economic Review* 76, 323ï 329.

Johnson, James M, and Robert E Miller, 1988, Investment banker prestige and the underpricing of initial public offerings, *Financial Management* 17, 19ï 29.

Jung, Mookwon, and Michael J. Sullivan, 2009, The signaling effects associated with convertible debt design, *Journal of Business Research* 62, 1358ï 1363.

Kang, Jun-Koo, Yong-Cheol Kim, Kyung-Joo Park, and René M. Stulz, 1995, An analysis of the wealth effects of Japanese offshore dollar-denominated convertible and warrant bond issues, *Journal of Financial and Quantitative Analysis* 30, 257ï 270.

Kang, Jun-Koo, and Rene M. Stulz, 1996, How different is Japanese corporate finance? An investigation of the information content of new security issues, *Review of Financial Studies* 9, 109ï 139.

Kim, Woojin, and Michael S. Weisbach, 2008, Motivations for public equity offers: An international perspective, *Journal of Financial Economics* 87, 281ï 307.

Kim, Yong-cheol, and Rene M Stulz, 1992, Is there a global market for convertible bonds, *Jounal of Business* 65, 75ï 91.

Kim, Yong O, 1990, Informative conversion ratios: A signalling approach, *The Journal of Financial and Quantitative Analysis* 25, 229ï 243.

Klein, Benjamin, and Keith B Leffler, 1981, The role of market forces in assuring contractual performance, *Journal of Political Economy* 89, 615ï 641.

Kolari, James W., and Seppo Pynnönen, 2010, Event study testing with cross-sectional correlation of abnormal returns, *Review of Financial Studies* 23, 3996ï 4025.

Krasker, William S., 1986, Stock price movements in response to stock issues under asymmetric information, *The Journal of Finance* 41, 93ï 105.

Krishnamurthy, Srinivasan, Paul Spindt, Venkat Subramaniam, and Tracie Woidtke, 2005, Does investor identity matter in equity issues? Evidence from private placements, *Journal of Financial Intermediation* 14, 210ï 238.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 2000, Investor protection and corporate governance, *Journal of Financial Economics* 58, 3ï 27.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 2000, Investor protection and corporate governance, *Journal of Financial Economics* 58, 3ï 27.

La Porta, Rafael, Florencio Lopez-De-Silanes, Andrei Shleifer, and Robert Vishny, 2002, Investor protection and corporate valuation, *The Journal of Finance* 57, 1147ï 1170.

La Porta, Rafael, Florencio Lopez-De-Silanes, Andrei Shleifer, and Robert W Vishny, 1997, Legal determinants of external finance, *The Journal of Finance* 52, 1131ï 1150.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 1998, Law and finance, *Journal of Political Economy* 106, 1113ï 1155.

Lau, Sie Ting, and Jing Yu, 2010, Does proximity matter in international bond underwriting?, *Journal of Banking & Finance* 34, 2027ï 2041.

Leary, Mark T, and Michael R Roberts, 2005, Do firms rebalance their capital structures?, *The Journal of Finance* 60, 2575ï 2619.

Lee, Cheng-Few, Kin-Wai Lee, and Gillian Hian-Heng Yeo, 2009, Investor protection and convertible debt design, *Journal of Banking & Finance* 33, 985ï 995.

Lee, Inmoo, Scott Lochhead, Jay Ritter, and Quanshui Zhao, 1996, The costs of raising capital, *Journal of Financial Research* 19, 59ï 74.

Lee, Lung-Fei, 1978, Unionism and wage rates¿ A simultaneous equations model with qualitative and limited dependent variables, *International Economic Review* 19, 415ï 433.

Lewis, Craig M., Richard J. Rogalski, and James K. Seward, 2003, Industry conditions, growth opportunities and market reactions to convertible debt financing decisions, *Journal of Banking & Finance* 27, 153ï 181.

Lewis, Craig M, Richard J Rogalski, and James K Seward, 1999, Is convertible debt a substitute for straight debt or for common equity?, *Financial Management* 28, 5ï 27.

Lewis, Craig M, Richard J Rogalski, and James K Seward, 2001, The long-run performance of firms that issue convertible debt: an empirical analysis of operating characteristics and analyst forecasts, *Journal of Corporate Finance* 7, 447ï 474.

Li, Hui, Hong Liu, and Antonios Siganos, 2016, A comparison of the stock market reactions of convertible bond offerings between financial and non-financial institutions: Do they differ?, *International Review of Financial Analysis* 45, 356ï 366.

Li, Xiaoyang, Shannon Lin, and Alan L. Tucker, 2016, The curious case of converts, *Global Finance Journal* 31, 1ï 17.

Liao, Qunfeng, Seyed Mehdian, and Rasoul Rezvanian, 2016, An examination of investorsô reaction to the announcement of CoCo bonds issuance: A global outlook, *Finance Research Letters*.

Liberti, Jose M, and Atif R Mian, 2009, Estimating the effect of hierarchies on information use, *The Review of Financial Studies* 22, 4057ï 4090.

Liberti, José María;, and Mitchell A. Petersen, 2017, Information: Hard and soft, *The Review of Corporate Finance Studies*, (conditional accepted).

Liberti, José María, 2017, Initiative, Incentives, and Soft Information, *Management Science*, mnsc.2016.2690.

Linn, Scott C, and J Michael Pinegar, 1988, The effect of issuing preferred stock on common and preferred stockholder wealth, *Journal of Financial Economics* 22, 155ï 184.

Livingston, Miles, and Robert E Miller, 2000, Investment bank reputation and the underwriting of nonconvertible debt, *Financial Management* 29, 21ï 34.

Livingston, Miles, and Lei Zhou, 2002, The impact of rule 144A debt offerings upon bond yields and underwriter fees, *Financial Management* 31, 5ï 27.

Ljungqvist, Alexander P, Tim Jenkinson, and Wilhelm William, 2003, Global integration in primary equity markets: The role of U.S. banks and U.S. investors, *The Review of Financial Studies* 16, 63ï 99.

Loncarski, Igor, Jenke Ter Horst, and Chris Veld, 2008, Why do companies issue convertible bond loans? An empirical analysis for the Canadian market, *Canadian Journal of Administrative Sciences* 25, 214ï 236.

Long, Michael S, and Stephan E Sefcik, 1990, Participation financing: A comparison of the characteristics of convertible debt and straight bonds issued in conjunction with warrants, *Financial Management* 19, 23ï 34.

Lou, Yun, and Florin P. Vasvari, 2013, The role of reputable auditors and underwriters in the design of bond contracts, *Journal of Accounting, Auditing and Finance* 28, 20ï 52.

Loughran, Tim, 2008, The impact of firm location on equity issuance, *Financial Management* 37, 1ï 21.

Loughran, Tim, 2008, The impact of firm location on equity issuance, *Financial Management* 37, 1ï 21.

Loughran, Tim, and Jayr Ritter, 1997, The Operating Performance of Firms Conducting Seasoned Equity Offerings, *The Journal of Finance* 52, 1823ï 1850.

Ma, Wanglin, Alan Renwick, Peng Nie, Jianjun Tang, and Rong Cai, 2018, Off-farm work, smartphone use and household income: Evidence from rural China, *China Economic Review* 52, 80ï 94.

Maddala, G. S., 1983, *Limited Dependent and Qualitative Variables in Econometrics* (Cambridge University Press, Cambridge).

Magennis, Darren, Edward Watts, and Sue Wright, 1998, Convertible notes: The debt versus equity classification problem, *Journal of Multinational Financial Management* 8, 303ï 315.

Marquardt, Carol, and Christine Wiedman, 2005, Earnings management through transaction structuring: Contingent convertible debt and diluted earnings per share, *Journal of Accounting Research* 43, 205ï 243.

Maskara, Pankaj Kumar, 2010, Economic value in tranching of syndicated loans, *Journal of Banking & Finance* 34, 946ï 955.

Mayers, David, 1998, Why firms issue convertible bonds: The matching of financial and real investment options, *Journal of Financial Economics* 47, 83ï 102.

McCahery, Joseph, and Armin Schwienbacher, 2010, Bank reputation in the private debt market, *Journal of Corporate Finance* 16, 498ï 515.

McConnell, John J., and Chris J. Muscarella, 1985, Corporate capital expenditure decisions and the market value of the firm, *Journal of Financial Economics* 14, 399ï 422.

McLaughlin, Robyn M., 1992, Does the form of compensation matter?, *Journal of Financial Economics* 32, 223ï 260.

McLaughlin, Robyn, Assem Safieddine, and Gopala K Vasudevan, 2000, Investment Banker Reputation and the Performance of Seasoned Equity Issuers, *Financial Management* 29, 96ï 110.

Megginson, William L., and Kathleen A. Weiss, 1991, Venture capitalist certification in initial public offerings, *The Journal of Finance* 46, 879ï 903.

Merton, Robert C, 1974, On the pricing of corporate debt: The risk structure of interest rates, *The Journal of Finance* 29, 449ï 470.

Mian, Atif, 2006, Distance constraints: The limits of foreign lending in poor economies, *The Journal of Finance* 61, 1465ï 1505.

Mikkelson, Wayne H., and M. Megan Partch, 1986, Valuation effects of security offerings and the issuance process, *Journal of Financial Economics* 15, 31ï 60.

Miller, Merton H, and Franco Modigliani, 1961, Dividend policy, growth, and the valuation of shares, *The Journal of Business* 34, 411ï 433.

Miller, Merton H, and Kevin Rock, 1985, Dividend policy under asymmetric Information, *The Journal of Finance* 40, 1031ï 1051.

Modigliani, Franco, and Merton H Miller, 1958, The cost of capital, corporation finance and the theory of investment, *The American Economic Review* 48, 261ï 297.

Moerland, Pieter W, 1995, Alternative disciplinary mechanisms in different corporate systems, *Journal of Economic Behavior & Organization* 26, 17ï 34.

Monfardini, Chiara, and Rosalba Radice, 2007, Testing exogeneity in the bivariate probit model: A Monte Carlo study*, *Oxford Bulletin of Economics and Statistics* 70, 271ï 282.

Morck, Randall, Andrei Shleifer, and Robert W Vishny, 1990, Do managerial objectives drive bad acquisitions?, *The Journal of Finance* 45, 31ï 48.

MuradoỲlu, Gulnur Yaz, and Sheeja Sivaprasad, 2012, Capital structure and abnormal returns, *International Business Review* 21, 328ï 341.

Myers, Stewart C., and Nicholas S. Majluf, 1984, Corporate financing and investment decisions when firms have information that investors do not have, *Journal of Financial Economics* 13, 187ï 221.

Narayanan, Rajesh P, Kasturi P Rangan, and Nanda K Rangan, 2007, The effect of private-debt-underwriting reputation on bank public-debt underwriting, *The Review of Financial Studies* 20, 597ï 618.

Neupane, Suman, and Chandra Thapa, 2013, Underwriter reputation and the underwriterï investor relationship in IPO markets, *Journal of International Financial Markets, Institutions and Money* 24, 105ï 126.

Nyborg, Kjell G, 1995, Convertible debt as delayed equity: Forced versus voluntary conversion and the information role of call policy, *Journal of Financial Intermediation* 4, 358ï 395.

Patell, James M, 1976, Corporate forecasts of earnings per share and stock price behavior: Empirical test, *Journal of Accounting Research* 14, 246ï 276.

Petersen, Mitchell A., and Raghuram G. Rajan, 1994, The benefits of lending relationshipsȷ Evidence from small business data, *The Journal of Finance* 49, 3ï 37.

Petersen, Mitchell A, 2004, Information: Hard and soft. Working paper, Northwestern University.

Petersen, Mitchell A, 2009, Estimating standard errors in finance panel data sets: Comparing approaches, *The Review of Financial Studies* 22, 435ï 480.

Petersen, Mitchell A, and Raghuram G Rajan, 2002, Does distance still matters? The information revolution in small business lending., *The Journal of Finance* 57, 2533ï 2570.

Puri, Manju, 1996, Commercial banks in investment banking conflict of interest or certification role?, *Journal of Financial Economics* 40, 373ï 401.

Rahim, Norhuda Abdul, 2012, A study on the market reaction to hybrid securities announcements, ((Doctoral thesis, University of Stirling, Glasgow, United Kingdom)).

Rahim, Norhuda Abdul, Alan Goodacre, and Chris Veld, 2014, Wealth effects of convertible-bond and warrant-bond offerings: a meta-analysis, *The European Journal of Finance* 20, 380ï 398.

Rajan, Raghuram G, and Luigi Zingales, 1995, What do we know about capital structure? Some evidence from international data, *The Journal of Finance* 50, 1421ï 1460.

Rajan, Raghuram, and Andrew Winton, 1995, Covenants and collateral as incentives to monitor, *The Journal of Finance* 50, 1113ï 1146.

Rajan, Uday, Amit Seru, and Vikrant Vig, 2010, Statistical default models and incentives, *American Economic Review* 100, 506ï 510.

Rajan, Uday, Amit Seru, and Vikrant Vig, 2015, The failure of models that predict failure: Distance, incentives, and defaults, *Journal of Financial Economics* 115, 237ï 260.

Rau, P Raghavendra, 2000, Investment bank market share, contingent fee payments, and the performance of acquiring firms, *Journal of Financial Economics* 56, 293ï 324.

Rogerson, William P, 1983, Reputation and product quality, *The Bell Journal of Economics* 14, 508ï 516.

Roll, Richard, 1986, The hubris hypothesis of corporate takeovers, *The Journal of Business* 59, 197ï 216.

Ross, David Gaddis, 2010, The ñDominant Bank Effect:ò How high lender reputation affects the information content and terms of bank loans, *Review of Financial Studies* 23, 2730ï 2756.

Sarig, Oded, and Arthur Warga, 1989, Some empirical estimates of the risk structure of interest rates, *The Journal of Finance* 44, 1351ï 1360.

Schadler, FP, and TL Manuel, 1994, Underwriter choice and announcement effects for seasoned equity offerings, *Journal Of Financial And …* 7, 53ï 65.

Servaes, Henri, and Marc Zenner, 1996, The Role of Investment Banks in Acquisitions, *The Review of Financial Studies* 9, 787ï 815.

Shapiro, Carl, 1983, Premiums for high quality products as returns to reputations, *The Quarterly Journal of Economics* 98, 659ï 679.

Shariff, Azim F, Dylan Wiwad, and Lara B Aknin, 2016, Income mobility breeds tolerance for income inequality: Cross-national and experimental evidence, *Perspectives on Psychological Science* 11, 373ï 380.

Smith, Clifford W., 1986, Investment banking and the capital acquisition process, *Journal of Financial Economics* 15, 3ï 29.

Smith, Clifford W., 1986, Investment banking and the capital acquisition process, *Journal of Financial Economics* 15, 3ï 29.

Spamann, Holger, 2010, The ñantidirector rights indexò revisited, *The Review of Financial Studies* 23, 467ï 486.

Stein, Jeremy C., 1992, Convertible bonds as backdoor equity financing, *Journal of Financial Economics* 32, 3ï 21.

Stein, Jeremy C, 2002, Information production and capital allocation: Decentralized versus hierarchical firms, *Journal of Finance* 57, 1891ï 1921.

Suchard, Jo Ann, 2007, The impact of rights issues of convertible debt in Australian markets, *Journal of Multinational Financial Management* 17, 187ï 202.

Sudarsanam, Sudi, Peter Holl, and Ayo Salami, 1996, Shareholder wealth gains in mergers: Effect of synergy and ownership structure, *Journal of Business Finance & Accounting* 23, 673ï 698.

Taylor, James, and Robert Flanigan, 2013, Convertible bonds: An issuerøs guide (European Edition), *Mayer Brown JSM*.

Terrell, Katherine, 1993, Public-private wage differentials in Haiti: Do public servants earn a rent?, *Journal of Development Economics* 42, 293ï 314.

Titman, Sheridan, K C John Wei, and Feixue Xie, 2004, Capital investments and stock returns, *Journal of Financial and Quantitative Analysis* 39, 677ï 700.

Uzzi, Brian, 1999, Embeddedness in the making of financial capital: How social relations and networks benefit firms seeking financing, *American Sociological Review* 64, 481ï 505.

Viswanath, P V, 1993, Strategic considerations, the pecking order hypothesis, and market reactions to equity financing, *The Journal of Financial and Quantitative Analysis* 28, 213ï 234.

Wang, Baoqian, Jing Miao, and Fengxian Wang, 2014, Research on the announcement effects of the convertible bonds in the A-share market of china, *Modern Economy* 5, 333ï 340.

Welch, Ivo, 2004, Capital structure and stock returns, *Journal of Political Economy* 112, 106ï 132.

Yasuda, Ayako, 2005, Do bank relationships affect the firmôs underwriter choice in the corporate-bond underwriting market?, *The Journal of Finance* 60, 1259ï 1292.

7 Appendices

7.1 Appendix A: Variable definitions

Variable	Source	Definition
Firm specific characteristics		
Size	Worldscope	Total assets in natural logarithms (denominated in U.S. dollar and adjusted for inflation). In considering of international sample, the dollar variable values has been adjusted to 2015 dollars using the monthly consumer price index of respective countries.
Market equity	Worldscope	Following Baker and Wurgler (2002), market equity is derived by multiplying common shares outstanding with stock price.
Leverage	Worldscope	Total book value of debt divided by total book value of assets; book value of debt divided by market value of equity.
Book leverage	Worldscope	Following Baker and Wurgler (2002), book leverage is defined as book debt divided by total assets. Book debt is defined as total assets minus book equity. Book equity can be derived as total assets minus total liabilities.
Market leverage	Worldscope	Following Baker and Wurgler (2002), this variable is defined as book debt divided by the result of total assets minus book equity plus market equity.
Net debt ratio	Worldscope	Following Bates et al. (2009), this variable is defined as defined as debt minus cash, divided by total assets.
Net debt book ratio	Worldscope	Following Baker and Wurgler (2002), net debt book ratio is defined as (Total assets minus book equity minus total cash) divided by total assets.

7.1 Appendix A: (continued)

Variable	Source	Definition
Financial Slack	Worldscope	Total cash and short-term investments divided by (total asset minus cash).
Capital expenditure	Worldscope	Total capital expenditure divided by total assets.
Stock run-up	Worldscope	Two stock run-up are constructed from daily stock return over two different windows at (ī 60, ī 2) and (ī 250, ī 10) prior to the announcement date of convertible bond issuance.
Market-to-book	Worldscope	Market value divided by the book value of common equity.
Stock return volatility	Worldscope	Two stock return volatility are calculated from daily stock returns over two different windows at (ī 60, ī 2) and (ī 250, ī 10) prior to the announcement date of convertible bond issuance.
Bond specific characteristics		
Proceeds	SDC Platinum	Proceeds is a relative issue size of the convertible bond issuance measured by dividing the total proceeds over total assets. In considering of international sample, the dollar variable values has been adjusted to 2015 dollars using the monthly consumer price index of respective countries.
Maturity	SDC Platinum	Maturity is calculated as time taken for the convertible bond to maturity as expressed in natural logarithm.
Credit rating	SDC Platinum	The credit rating of the issuing firm is measured based on Moodyǿs ratings and Standard & Poorǿs ratings.

7.1 Appendix A: (continued)

Variable	Source	Definition
Conversion premium	SDC Platinum	Conversion premium, expressed in percentage, is calculated by dividing the subtraction between initial conversion price and the last common stock price by the last common stock price. The value is then multiply by 100.
Delta	SDC Platinum; Worldscope	Following Lewis, Rogalski, and Seward (2003) and Dutordoir and Gucht (2007), the delta is derived from the Black and Scholes option pricing model and adjusted for continuous dividend payments: $\Delta = e^{-\delta T} \cdot N\left[\frac{\ln\frac{S}{K} + \left(r - \delta + \frac{\sigma^2}{2}\right)\cdot T}{\sigma \cdot \sqrt{T}}\right]$ where S is the stock price of the underlying stock measured at 1 week prior to announcement date, K is the conversion price, δ is the continuously compounded dividend yield measured at fiscal year-end prior to the announcement date, r is the continuously compounded risk free interest rate yield on a 10-year government bond (measured on the announcement date). ů is the standard deviation of the continuously compounded common stock returns estimated over the period ī 240 to ī 10 trading days prior to the announcement date, T is the number of years to maturity, and NÂ is the cumulative standard normal probability distribution. The delta ranges from 0 to 1, in which a value closer to 1 implying a high probability of conversion.

7.1 Appendix A: (continued)

Variable	Source	Definition
Stated uses of proceeds	SDC Platinum	Following Dutordoir et al. (2016), this variable is classified into five main categories including capital expenditure, debt refinancing, acquisition, working capital, and general corporate purposes.
First issue dummy	SDC Platinum	A value of 1 is assigned for the first issue of convertible bond made by issuing company.
Call protection	SDC Platinum	A value of 1 is assigned for convertible bond with non-callable characteristics.
Gross spread	SDC Platinum	Total fee incurred by the issuer paid to the underwriter for issuing convertible bonds. Expressed in in natural logarithms
Yield-to-maturity	SDC Platinum	Total return expected on a convertible bond until maturity.
Coupon	SDC Platinum	Actual amount of interest income earned by investor on the face value of convertible bond.
Public deal	SDC Platinum	A value of 1 is assigned for convertible bond offered in the public marketplace.
Private deal	SDC Platinum	A value of 1 is assigned for convertible bond offered in the private marketplace.
Multiple tranches dummy	SDC Platinum	A value of number is assigned based on the number of multiple tranches offerings.

7.1 Appendix A: (continued)

Variable	Source	Definition
Market specific characteristics		
Market run-up	Worldscope	Two market run-up are constructed from daily stock return on the S&P 500 index over two different windows at (ī 60, ī 2) and (ī 250, ī 10) prior to the announcement date of convertible bond.
Market return volatility	Worldscope	Two market return volatility are calculated from daily returns on the S&P 500 index over two different windows at (ī 60, ī 2) and (ī 250, ī 10) prior to the convertible bond announcement date of convertible bond.
Short selling dummy	Various reliable sources, including banks, stock market exchanges, and regulatory bodies	A value of 1 is assigned to countries allow short selling, and 0 is assigned to countries impose short sales bans relative to the offerings of convertible bonds. Following Dutordoir et al. (2016), I assume no short selling bans prior to 1990.
Shareholder rights index	La Porta et al. (1998); Djankov et al. (2008)	Shareholder rights index is measured based on one share-one vote, proxy by mail, shares not blocked before meeting, cumulative voting or proportional representation, oppressed minorities mechanism, pre-emptive rights, and percentage of share capital to call an extraordinary shareholdersô meeting. The index ranges from zero to six.
Creditor rights index	La Porta et al. (1998); Djankov et al. (2007)	Creditor rights index is measured by restrictions for going into reorganization, no automatic stay on secured assets, secured creditors first, and management does not stay. The index ranges from zero to four.

7.1 Appendix A: (continued)

Variable	Source	Definition
Legal enforcement index	La Porta et al. (1998)	Enforcement quality is measured by efficiency of the judicial system, rule of law, corruption, risk of expropriation, and risk of contract repudiation.
Legal of origin	La Porta et al. (1998)	Equals one if the origin is English common law, two if the origin is the French commercial code, three if the origin is the German commercial code, and four if the origin is Scandinavian civil law.
GDP	WDI, World Bank	GDP measures the total economic activity of a country.
GDP growth	WDI, World Bank	GDP growth measures the total economic performance of a country.
Interest rates	Worldscope	10-year government bond rates averaged over the quarter preceding the issue month.
Stock market capitalization/GDP	WDI, World Bank	Stock market capitalization is calculated as the share price multiply with the number of shares outstanding for listed domestic companies. Stock market capitalization is divided by GDP.
Government debt to GDP	Historical Public Debt Database, IMF	It is defined as gross government debt (%GDP).
Underwriter specific characteristics		
Domestic bookrunner	SDC Platinum	A dummy variable that equals one if a domestic bank lead underwrites the deal and zero if otherwise. For any deal with more than one lead underwriter, a dummy one is assigned for at least one lead underwriter domiciled in the same country with the issuer.

7.1 Appendix A: (continued)

Variable	Source	Definition
Regional bookrunner	SDC Platinum	A dummy variable that equals one if a bank from the same region as the issuer lead underwrites the deal and zero if otherwise. The main regional classification is based on Morgan Stanley Capital International (MSCI) in world market classifications. Americas, Europe and Asia Pacific are the three main regions. For robustness purposes in this study, I also create the regional classification based on Financial Times in global market classifications for corporate bond offerings.[20] In particular, U.S., Japan, Europe, Asia-Pacific excluding Japan and Americas are the main geographic regions. For any deal with more than one lead underwriter, a dummy one is assigned for at least one lead underwriter domiciled in the same country with the issuer.
Number of bookrunner(s)	SDC Platinum	Total number of lead underwriter(s) participation.
Syndicate size	SDC Platinum	Total number of lead underwriter(s) and co-manager(s) participation.
Number of domestic bookrunner(s)	SDC Platinum	Total number of domestic lead underwriter(s).
Number of regional bookrunner(s)	SDC Platinum	Total number of regional lead underwriter(s).
Proportion of domestic bookrunner(s)	SDC Platinum	Number of domestic lead underwriter(s) divided by total number of lead underwriter(s).

[20] See the details at https://markets.ft.com/data/league-tables/tables-and-trends/Bonds

7.1 Appendix A: (continued)

Variable	Source	Definition
Proportion of regional bookrunner(s)	SDC Platinum	Number of regional lead underwriter(s) divided by total number of lead underwriter(s).
Underwriter reputation	SDC Platinum	Bank reputation measure is based on Megginson and Weiss (1991) rank computed by the market share of the underwritten amount of proceeds by each bank. More specifically, [illegible] = [illegible] × 9, where [illegible] is a set of bookrunners, [illegible] is a market share by bookrunner [illegible], [illegible] equals year, [illegible] equals natural logarithms and [illegible] is the highest market share by the top bookrunner. In this study, I construct three different underwriter reputation variables. First, the underwriter reputation is defined as zero if the investment bank is not on the Top-21 in global convertible market share ranking with Megginson and Weiss (1991) rank score ≥ 7. Second, following Andres, Betzer, and Limbach (2014), McCahery and Schwienbacher (2010) and Ross (2010) the underwriter reputation is measured by Top-3 country level market share in convertible bond offerings. Third, the underwriter reputation is measured by either Top-3 in country level league table or Top-21 in global league table in convertible bond offerings. Following Yasuda (2005), if there is more than one lead underwriter in the bond issue, underwriter reputation equals the highest ranking among the lead underwriters.
Proportion of Top-3 country bookrunner syndicate	SDC Platinum	Number of Top-3 country lead underwriter(s) divided by total number of lead underwriter(s).
Proportion of Top-21 global bookrunner syndicate	SDC Platinum	Number of Top-21 global lead underwriter(s) divided by total number of lead underwriter(s).

7.1 Appendix A: (continued)

Variable	Source	Definition
Proportion of Top-3 country or Top-21 global bookrunner syndicate	SDC Platinum	Number of Top-3 country or Top-21 global lead underwriter(s) divided by total number of lead underwriter(s).
Global market share syndicate	SDC Platinum	A continuous variable of total market share of all lead underwriters in syndicate in global league table of convertible bond offerings.
National market share syndicate	SDC Platinum	A continuous variable of total market share of all lead underwriters in syndicate in national league table of convertible bond offerings.

7.2 Appendix B: List of Top-10 convertible bond bookrunners in 30 different countries

Rank	Year	Country of origin	Proceeds ($million)	Deals	Market share
Country: Australia					
1	UBS AG	Switzerland	7,916.19	70	15.02
2	Merrill Lynch	US	5,627.80	23	10.68
3	Macquarie Group Limited	Australia	4,838.98	56	9.18
4	Citigroup Inc	US	4,314.14	32	8.19
5	Credit Suisse	Switzerland	4,018.20	37	7.63
6	Goldman Sachs Group Inc	US	3,632.24	29	6.89
7	Deutsche Bank AG	Germany	3,484.17	27	6.61
8	JPMorgan Chase & Co	US	3,115.90	20	5.91
9	Morgan Stanley	US	2,049.25	13	3.89
10	Commonwealth Bank of Australia	Australia	1,444.52	8	2.74
Country: Austria					
1	JPMorgan Chase & Co	US	2,007.97	6	25.30
2	Deutsche Bank AG	Germany	1,349.23	8	17.00
3	Merrill Lynch	US	781.30	4	9.84
4	UniCredit Bank AG	Italy	653.98	6	8.24
5	HSBC Holdings PLC	UK	605.30	1	7.63
6	Morgan Stanley	US	577.03	2	7.27
7	Credit Suisse	Switzerland	444.93	4	5.61
8	Erste Group	Austria	308.97	2	3.89
9	Nomura Holdings, Inc.	Japan	283.90	2	3.58
10	Lehman Brothers Holdings Inc	US	181.20	1	2.28
Country: Belgium					
1	Merrill Lynch	US	4,945.15	2	29.71
2	JPMorgan Chase & Co	US	4,102.90	8	24.65
3	BNP Paribas	France	1,675.89	12	10.07
4	Morgan Stanley	US	1,182.93	5	7.11
5	UBS AG	Switzerland	1,053.70	3	6.33
6	KBC Securities	Belgium	515.20	6	3.10
7	Deutsche Bank AG	Germany	505.73	2	3.04
8	Societe General Corp	France	495.63	3	2.98
9	Lehman Brothers Holdings Inc	US	314.00	4	1.89
10	Barclays	UK	293.92	2	1.77
Country: Canada					
1	RBC Capital Markets	Canada	7,043.22	122	11.94
2	CIBC World Markets Inc	Canada	6,925.48	142	11.74
3	BMO Financial Group	Canada	5,630.17	100	9.55
4	TD Securities Inc	Canada	5,359.55	109	9.09
5	ScotiaMcLeod Inc	Canada	5,290.47	107	8.97
6	Goldman Sachs Group Inc	US	3,482.10	10	5.91
7	National Bank Financial Inc	Canada	2,798.89	94	4.75
8	Merrill Lynch	US	2,404.23	14	4.08
9	JPMorgan Chase & Co	US	2,712.43	13	4.60
10	Credit Suisse	Switzerland	2,289.33	11	3.88
Country: China					
1	China International Capital Co	China	10,254.47	24	11.34
2	CITIC Securities Co Ltd	China	9,686.71	25	10.72
3	UBS AG	Switzerland	8,192.11	29	9.06
4	JPMorgan Chase & Co	US	7,725.44	43	8.55
5	Goldman Sachs Group Inc	US	5,153.98	21	5.70

7.2 Appendix B: (continued)

Rank	Year	Country of origin	Proceeds ($million)	Deals	Market share
6	Credit Suisses	Switzerland	5,136.69	33	5.68
7	Guotai Junan Securities	China	4,083.39	11	4.52
8	Haitong International Securities Co Ltd	China	3,946.30	11	4.37
9	Morgan Stanley	US	3,151.65	23	3.49
10	Deutsche Bank AG	Germany	2,635.59	22	2.92
Country: Finland					
1	Goldman Sachs Group Inc	US	792.90	1	17.04
2	Merrill Lynch	US	481.20	1	10.34
3	Bank of America Merrill Lynch	US	375.88	2	8.08
4	Tokai Tokyo Financial Holdings	Japan	336.40	43	7.23
5	Salomon Brothers	US	300.00	1	6.45
6	Crédit Agricole Corporate and Investment Bank	France	285.10	1	6.13
7	Barclays	UK	243.48	1	5.23
8	Citigroup Inc	US	243.48	1	5.23
9	Deutsche Bank AG	Germany	243.48	1	5.23
10	ArosMaizels	SW	191.40	1	4.11
Country: France					
1	Societe General Corp	France	25,013.24	105	21.02
2	BNP Paribas	France	24,060.69	114	20.22
3	Crédit Agricole	France	7,673.88	58	6.45
4	Deutsche Bank AG	Germany	7,611.45	23	6.40
5	Goldman Sachs Group Inc	US	7,450.18	28	6.26
6	Morgan Stanley	US	6,997.53	27	5.88
7	UBS AG	Switzerland	4,740.56	14	3.98
8	JPMorgan Chase & Co	US	4,432.98	19	3.73
9	Credit Suisse	Switzerland	4,018.63	14	3.38
10	Citigroup Inc	US	3,327.43	12	2.80
Country: Germany					
1	Deutsche Bank AG	Germany	15,578.16	50	18.93
2	Morgan Stanley	US	9,869.20	20	11.99
3	JPMorgan Chase & Co	US	9,684.48	17	11.77
4	Goldman Sachs Group Inc	US	9,622.61	19	11.69
5	UBS AG	Switzerland	6,598.70	20	8.02
6	Dresdner Kleinwort	Germany	4,269.95	18	5.19
7	Credit Suisse	Switzerland	4,121.22	13	5.01
8	Citigroup Inc	US	3,544.01	15	4.31
9	Bank of America Merrill Lynch	US	2,807.23	13	3.41
10	UniCredit Bank AG	Italy	1,947.89	15	2.37
Country: Greece					
1	Deutsche Bank AG	Germany	2,484.68	10	28.87
2	UBS AG	Switzerland	1,028.75	4	11.95
3	EFG Eurobank Ergasias SA	Greece	966.46	5	11.23
4	BNP Paribas	France	933.36	4	10.84
5	Merrill Lynch	US	687.25	2	7.98
6	National Bank of Greece SA	Greece	586.03	3	6.81
7	BARCLAYS	UK	408.05	2	4.74
8	Morgan Stanley	US	354.45	2	4.12
9	NBG International	Greece	347.33	1	4.04
10	Credit Suisse Group AG	Switzerland	254.70	1	2.96

7.2 Appendix B: (continued)

Rank	Year	Country of origin	Proceeds ($million)	Deals	Market share
Country: Hong Kong					
1	Merrill Lynch	US	6,359.16	18	12.90
2	Goldman Sachs Group Inc	US	6,028.03	20	12.23
3	Morgan Stanley	US	4,004.23	21	8.13
4	JPMorgan Chase & Co	US	3,923.57	28	7.96
5	Deutsche Bank AG	Germany	2,908.87	25	5.90
6	UBS AG	Switzerland	2,832.72	15	5.75
7	HSBC Holdings PLC	UK	2,311.58	21	4.69
8	Citigroup Inc	US	2,163.52	17	4.39
9	Credit Suisse Group AG	Switzerland	2,140.38	19	4.34
10	Jardine Fleming	UK	1,942.50	12	3.94
Country: India					
1	Citigroup Inc	US	4,225.82	48	16.10
2	JPMorgan Chase & Co	US	3,386.50	29	12.90
3	Barclays	UK	2,427.80	25	9.25
4	Deutsche Bank AG	Germany	2,188.72	21	8.34
5	Standard Chartered PLC	UK	1,439.23	15	5.48
6	Morgan Stanley	US	1,271.84	14	4.85
7	Merrill Lynch	US	1,247.75	15	4.75
8	ABN AMRO Bank NV	Netherlands	875.98	9	3.34
9	JM Financial Group	India	806.47	6	3.07
10	Credit Suisse Group AG	Switzerland	802.08	10	3.06
Country: Indonesia					
1	Credit Suisse Group AG	Switzerland	1,461.95	8	22.65
2	UBS AG	Switzerland	1,100.00	4	17.05
3	Goldman Sachs Group Inc	US	820.00	3	12.71
4	Merrill Lynch	US	548.80	2	8.50
5	BNP Paribas	France	500.00	2	7.75
6	Danatama Makmur	Indonesia	339.70	1	5.26
7	JPMorgan Chase & Co	US	336.90	4	5.22
8	Morgan Stanley	US	325.00	2	5.04
9	Deutsche Bank AG	Germany	200.95	3	3.11
10	Swiss Bank Corp	Switzerland	198.40	6	3.07
Country: Ireland					
1	Merrill Lynch	US	842.60	2	25.41
2	Goldman Sachs Group Inc	US	550.00	2	16.59
3	Morgan Stanley	US	480.00	2	14.48
4	UBS AG	Switzerland	478.45	3	14.43
5	Deutsche Bank AG	Germany	326.45	1	9.85
6	Raymond James & Associates Inc	US	100.00	1	3.02
7	Cowen & Co	US	80.00	1	2.41
8	Guggenheim Partners LLC	US	80.00	1	2.41
9	Jefferies & Co Inc	US	80.00	1	2.41
10	Citigroup Inc	US	59.35	1	1.79
Country: Italy					
1	Mediobanca SpA	Italy	8,603.07	34	19.49
2	JPMorgan Chase & Co	US	7,397.04	15	16.75
3	Merrill Lynch	US	4,079.73	10	9.24
4	BNP Paribas	France	3,246.69	21	7.35

7.2 Appendix B: (continued)

Rank	Year	Country of origin	Proceeds ($million)	Deals	Market share
5	Morgan Stanley	US	2,427.84	9	5.50
6	Goldman Sachs Group Inc	US	2,276.07	7	5.16
7	Credit Agricole Indo-Laz Frere	France	2,166.10	1	4.91
8	Deutsche Bank AG	Germany	1,792.19	7	4.06
9	Credit Suisse Group AG	Switzerland	1,720.78	8	3.90
10	Lehman Brothers Holdings Inc	US	1,464.67	8	3.32
Country: Japan					
1	Nomura Holdings, Inc.	Japan	173,181.86	1,136	36.72
2	Yamaichi Securities	Japan	71,463.85	600	15.15
3	Daiwa Securities Group Inc	Japan	54,330.60	460	11.52
4	Nikko Securities Co Ltd	Japan	50,288.40	462	10.66
5	Citigroup Inc	US	12,665.25	73	2.69
6	UBS AG	Switzerland	11,237.93	113	2.38
7	Swiss Bank Corp	Switzerland	10,645.40	133	2.26
8	Goldman Sachs Group Inc	US	9,587.05	26	2.03
9	Mizuho Financial Group, Inc	Japan	9,526.56	91	2.02
10	Morgan Stanley	US	9,515.08	34	2.02
Country: Luxembourg					
1	Deutsche Bank AG	Germany	3,127.72	10	22.25
2	Goldman Sachs Group Inc	US	2,636.12	9	18.75
3	Crédit Agricole Corporate and Investment Bank	France	1,571.68	5	11.18
4	Societe Generale	France	1,361.53	6	9.68
5	Morgan Stanley	US	990.98	7	7.05
6	Merrill Lynch	US	859.10	3	6.11
7	Bank of America Merrill Lynch	US	836.12	3	5.95
8	Credit Suisse Group AG	Switzerland	473.03	4	3.36
9	UBS AG	Switzerland	292.47	3	2.08
10	Barclays	UK	273.62	2	1.95
Country: Malaysia					
1	CIMB Group Sdn Bhd	Malaysia	1,921.99	15	16.46
2	Credit Suisse Group AG	Switzerland	1,147.50	7	9.83
3	JPMorgan Chase & Co	US	1,139.19	7	9.76
4	Morgan Stanley	US	1,079.00	7	9.24
5	Deutsche Bank AG	Germany	1,041.43	8	8.92
6	Citigroup Inc	US	970.00	2	8.31
7	Merrill Lynch	US	922.65	5	7.90
8	UBS AG	Switzerland	805.00	4	6.89
9	AMMB Holdings Bhd	Malaysia	526.55	3	4.51
10	Hong Leong Investment Bank Bhd	Malaysia	393.60	8	3.37
Country: Netherlands					
1	Morgan Stanley	US	5,692.50	20	20.69
2	Deutsche Bank AG	Germany	3,920.92	17	14.25
3	ABN AMRO Bank NV	Netherlands	3,600.60	27	13.09
4	Citigroup Inc	US	1,890.48	6	6.87
5	Goldman Sachs Group Inc	US	1,776.43	8	6.46
6	Credit Suisse Group AG	Switzerland	1,381.97	6	5.02
7	Rothschild Group	UK	1,151.08	7	4.18
8	Barclays	UK	1,042.00	6	3.79
9	UBS AG	Switzerland	954.70	14	3.47

7.2 Appendix B: (continued)

Rank	Year	Country of origin	Proceeds ($million)	Deals	Market share
10	ING Group	Netherlands	859.05	12	3.12
Country: New Zealand					
1	Credit Suisse Group AG	Switzerland	490.10	4	29.03
2	JBWere Ltd	Australia	158.65	4	9.40
3	SG Warburg Soditic SA	Switzerland	152.40	3	9.03
4	UBS AG	Switzerland	144.90	2	8.58
5	ABN AMRO Rothschild	Netherlands	116.85	2	6.92
6	Morgan Stanley	US	100.30	1	5.94
7	ABN Amro Craigs Ltd	Netherlands	81.60	2	4.83
8	Soditic	Switzerland	66.20	1	3.92
9	ASB Securities Ltd	New Zealand	58.15	1	3.44
10	Ord Minnett Group	Australia	53.60	1	3.18
Country: Norway					
1	ABG Sundal Collier	Norway	2,310.78	13	27.40
2	Credit Suisse Group AG	Switzerland	1,192.37	5	14.14
3	Deutsche Bank AG	Germany	1,126.30	5	13.35
4	Lehman Brothers Holdings Inc	US	875.00	4	10.37
5	BNP Paribas	France	547.13	4	6.49
6	Citigroup Inc	US	461.05	2	5.47
7	Barclays	UK	404.40	2	4.79
8	Goldman Sachs & Co	US	319.35	2	3.79
9	SPN Fonds AS	Norway	188.70	1	2.24
10	Christiania Fonds AS	Norway	187.00	2	2.22
Country: Philippines					
1	Goldman Sachs Group Inc	US	925.00	6	19.54
2	Salomon Brothers International	US	705.00	5	14.89
3	Jardine Fleming	UK	576.40	7	12.17
4	JPMorgan Chase & Co	US	350.00	2	7.39
5	Deutsche Bank AG	Germany	271.50	2	5.73
6	Citigroup Inc	US	260.00	2	5.49
7	Morgan Stanley	US	200.00	2	4.22
8	Credit Suisse Group AG	Switzerland	150.00	1	3.17
9	Standard Chartered PLC	UK	150.00	1	3.17
10	UBS AG	Switzerland	150.00	1	3.17
Country: Singapore					
1	JPMorgan Chase & Co	US	4,519.65	16	21.21
2	Credit Suisse Group AG	Switzerland	3,663.03	16	17.19
3	Goldman Sachs Group Inc	US	2,339.82	8	10.98
4	Merrill Lynch	US	2,235.15	7	10.49
5	Morgan Stanley	US	1,758.77	12	8.25
6	Citigroup Inc	US	1,297.80	11	6.09
7	Bank of America Merrill Lynch	US	512.50	1	2.40
8	Robert Fleming Holdings PLC	UK	505.00	3	2.37
9	Standard Chartered PLC	UK	501.77	4	2.35
10	DBS Asia Capital Ltd	Singapore	463.43	6	2.17
Country: South Korea					
1	Daewoo Securities Co Ltd	South Korea	3,876.95	130	8.89
2	Credit Suisse Group AG	Switzerland	3,625.15	39	8.31
3	KDB Securities Co Ltd	South Korea	2,501.38	19	5.74

7.2 Appendix B: (continued)

Rank	Year	Country of origin	Proceeds ($million)	Deals	Market share
4	JPMorgan Chase & Co	US	2,347.22	13	5.38
5	Deutsche Bank AG	Germany	2,063.68	12	4.73
6	UBS AG	Switzerland	2,047.70	17	4.70
7	Goldman Sachs Group Inc	US	1,995.81	12	4.58
8	Morgan Stanley	US	1,843.87	9	4.23
9	Hyundai Securities Co Ltd	South Korea	1,564.47	32	3.59
10	Woori Invest & Sec Co Ltd	South Korea	1,560.68	18	3.58
Country: Spain					
1	Morgan Stanley	US	4,351.00	13	17.20
2	CaixaBank SA	Spain	2,559.32	3	10.12
3	Societe General Corp	France	2,426.07	9	9.59
4	UBS AG	Switzerland	1,810.78	8	7.16
5	Goldman Sachs Group Inc	US	1,795.65	7	7.10
6	Citigroup Inc	US	1,397.00	6	5.52
7	JPMorgan Chase & Co	US	1,125.68	4	4.45
8	Deutsche Bank AG	Germany	906.63	5	3.58
9	Barclays	UK	884.88	5	3.50
10	BNP Paribas	France	881.03	7	3.48
Country: Sweden					
1	Morgan Stanley	US	1,889.70	6	30.92
2	Skandinaviska Enskilda Banken	Sweden	1,414.20	2	23.14
3	Deutsche Bank AG	Germany	583.10	4	9.54
4	JPMorgan Chase & Co	US	469.90	2	7.69
5	Nomura Holdings, Inc	Japan	425.10	12	6.96
6	UBS AG	Switzerland	234.80	9	3.84
7	Credit Suisse Group AG	Switzerland	199.20	2	3.26
8	Merrill Lynch	US	180.30	2	2.95
9	Carnegie	Sweden	178.20	2	2.92
10	SEB	Sweden	141.00	2	2.31
Country: Switzerland					
1	Credit Suisse Group AG	Switzerland	13,234.38	58	22.74
2	UBS AG	Switzerland	9,403.75	49	16.16
3	Merrill Lynch	US	8,453.00	14	14.53
4	Goldman Sachs Group Inc	US	4,259.60	14	7.32
5	Citigroup Inc	US	3,821.85	11	6.57
6	Swiss Bank Corp	Switzerland	3,526.50	16	6.06
7	Lehman Brothers Holdings Inc	US	3,048.55	6	5.24
8	Deutsche Bank AG	Germany	2,745.67	10	4.72
9	JPMorgan Chase & Co	US	2,492.37	9	4.28
10	BNP Paribas	France	1,755.12	6	3.02
Country: Taiwan					
1	KGI Financial Services Group	Taiwan	4,819.15	72	8.43
2	Morgan Stanley	US	4,499.30	24	7.87
3	Goldman Sachs Group Inc	US	4,459.58	24	7.80
4	UBS AG	Switzerland	3,851.61	24	6.74
5	Citigroup Inc	US	3,750.76	32	6.56
6	JPMorgan Chase & Co	US	3,122.98	21	5.46
7	Lehman Brothers Holdings Inc	US	3,053.37	23	5.34
8	ABN AMRO Rothschild	NT	2,718.35	15	4.76
9	Credit Suisse Group AG	Switzerland	2,342.80	18	4.10
10	Deutsche Bank AG	Germany	1,967.46	16	3.44

7.2 Appendix B: (continued)

Rank	Year	Country of origin	Proceeds ($million)	Deals	Market share
Country: Thailand					
1	Salomon Smith Barney	US	1,608.00	2	20.87
2	Morgan Stanley	US	1,128.50	3	14.65
3	Jardine Fleming	UK	505.00	7	6.55
4	Merrill Lynch	US	392.80	5	5.10
5	Deutsche Bank AG	Germany	350.00	1	4.54
6	Lehman Brothers Holdings Inc	US	320.00	2	4.15
7	Credit Suisse Group AG	Switzerland	311.08	5	4.04
8	JPMorgan Chase & Co	US	300.00	3	3.89
9	Robert Fleming & Co Ltd	UK	235.00	4	3.05
10	Salomon Brothers	US	235.00	3	3.05
Country: UK					
1	UBS AG	Switzerland	8,703.88	32	7.69
2	Morgan Stanley	US	7,516.97	30	7.21
3	Credit Suisse	Switzerland	6,647.47	45	10.82
4	JPMorgan Chase & Co	US	6,095.01	31	7.45
5	Merrill Lynch	US	4,201.55	16	3.85
6	Goldman Sachs Group Inc	US	4,091.22	18	4.33
7	Citigroup Inc	US	3,507.80	10	2.40
8	Deutsche Bank AG	Germany	3,421.92	19	4.57
9	SG Warburg Securities	Switzerland	3,333.20	14	3.37
10	Lehman Brothers Holdings Inc	US	2,985.87	12	2.88
Country: US					
1	Goldman Sachs Group Inc	US	150,016.85	591	14.89
2	Morgan Stanley	US	125,411.41	567	12.44
3	Merrill Lynch	US	113,074.90	531	11.22
4	Citigroup Inc	US	101,175.25	432	10.04
5	JPMorgan Chase & Co	US	87,131.95	508	8.65
6	Credit Suisse	Switzerland	65,194.11	357	6.47
7	Bank of America Merrill Lynch	US	61,062.16	410	6.06
8	Lehman Brothers Holdings Inc	US	48,856.65	221	4.85
9	Deutsche Bank AG	Germany	45,326.82	251	4.50
10	UBS AG	Switzerland	31,336.43	173	3.11