Essays on Stock Market Integration
- On Stock Market Efficiency, Price Jumps and Stock Market Correlations

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刘煜娜
To my dear family
Abstract

This thesis consists of four self-contained papers related to the change of market structure and the quality of equity market.

In Paper [I] we found, by using of a Flexible Dynamic Component Correlations (FDCC) model, that the creation of a common cross-border stock trading platform has increased the long-run trends in conditional correlations between foreign and domestic stock market returns.

In Paper [II] we study whether the creation of a uniform Nordic and Baltic stock trading platform has affected weak-form information efficiency. The results indicate that the stock market consolidations have had a positive effect on the information efficiency and turnover for an average firm. The merger effects are, however, asymmetrically distributed in the sense that relatively large (small) firms located on relatively large (small) markets experience an improved (reduced) information efficiency and turnover. Although the results indicate that changes in the level of investor attention (measured by turnover) may explain part of the changes in information efficiency, they also lend support to the hypothesis that merger effects may partially be driven by changes in the composition of informed versus uninformed investors following a stock.

Paper [III] analyzes whether the measured level of trust in different countries can explain bilateral stock market correlations. One finding is that generalized trust among nations is a robust predictor for stock market correlations. Another is that the trust effect is larger for countries which are close to each other. This indicates that distance mitigates the trust effect. Finally, we confirm the effect of trust upon stock market correlations, by using particular trust data (bilateral trust between country A and country B) as an alternative measurement of trust.

In Paper [IV] we present the impact of the stock market mergers that took place in the Nordic countries during 2000 – 2007 on the probabilities for stock price jumps, i.e. for relatively extreme price movements. The main finding is that stock market mergers, on average, reduce the likelihood of observing stock price jumps. The effects are asymmetric in the sense that the probability of sudden price jumps is reduced for large and medium size firms whereas the effect is ambiguous for small size firms. The results also indicate that the market risk has been reduced after the stock market consolidations took place.

Keywords: Time-varying return predictability, Tests for jumps, International financial markets, Market structure, Common trading platform, Integration, Time-varying correlation, C-GARCH, Trust, Portfolio Diversification, Stock Market Participation
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Yuna
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This thesis consists of a summary and the following self-contained papers:


“An “efficient” market is defined as a market where there are large numbers of rational, profit-maximizers actively competing, with each trying to predict future market values of individual securities, and where important current information is almost freely available to all participants ... on the average, competition will cause the full effects of new information on intrinsic values to be reflected “instantaneously” in actual prices.” - (Fama, 1965b)

1. Introduction

This thesis consists of four self-contained papers on empirical finance which are related to different aspects of trading securities on multiple markets. The overall purpose is to study how changes in the market structure, such as stock market mergers (stock market integration), affect key stock market characteristics such as market efficiency, the interdependence of stock markets and the prevalence of sudden price jumps. This thesis is also concerned with how differences in trust levels between countries influence cross-country stock market correlations.

The fundamental task of a stock market is to serve as a place of exchange for capital and one basic requirement of a stock market is that it performs this task ‘well’. The question is then what is meant when we say that the stock market ‘functions well’ and what factors determine whether a stock market fulfills this criterion? One criterion for a well-functioning stock market is that it is able to allocate resources where they can be put to the most effective use. A prerequisite for this is that asset prices fully reflect all available information so that agents can make balanced investment decisions. The question is then whether stock markets fulfill this requirement and here there are two competing schools: the Efficient Market Hypothesis (EMH) (Fama, 1965a, b; Malkiel and Fama, 1970) and Behavioral Finance (Shiller, 2003; Barberis and Thaler, 2003; Ritter, 2003).
The Efficient Market Hypothesis was proposed by Eugene Fama in the 1960s in which he defined an efficient market to be a market where the actual prices at each point in time represent good estimates of the assets’ intrinsic values given the information available (Fama, 1965a). If this assumption is satisfied, it is not possible (except by pure luck or by taking on more risk) to ‘beat the market’ because the observed prices already reflect all the relevant information. Malkiel and Fama (1970) proposed three different levels of market efficiency: weak form, semi-strong and strong. In its weak form, the EMH asserts that securities prices reflect all past, publically-available information whereas a market is semi-strongly efficient if the set of information consists both of the previous prices plus all publically-available information. Finally, a market is strongly efficient if the set of information consists of the previous prices plus all publically-available information plus private (or insider) information.

The EMH was the dominant theory in finance until Behavioral Finance emerged in the 1990s. The key assumption in the latter field is that people, under certain circumstances, take decisions which are not fully rational. These decisions are caused either by certain types of preference or because of cognitive limitations such as overconfidence, loss aversion, overreaction, mental accounting and herd behaviour (see e.g. Shiller, 2003; Barberis and Thaler, 2003; Ritter, 2003). One implication of these arguments is that financial markets do not always function well and price changes do not always accurately reflect the arrival of new information (Shiller, 2003). This conclusion differs from the conclusion of the EMH, where it is assumed that prices are unpredictable. The field of behavioural finance received much interests during the financial crisis in 2008 – 2009 because it made it possible to understand price movements that were not consistent with EMH (Barberis, 2011; Shefrin and Statman, 2011).

In an attempt to reconcile the classical EMH with behavioural finance, Lo (2004; 2005) proposes the adaptive market hypothesis by applying evolutionary
principles to financial interactions (incorporating features such as competition, adaption and natural selection). The adaptive market hypothesis implies that the degree of market efficiency is extremely dynamic since it is capable of adapting to an ever-changing environment with respect to factors characterizing market ecology, such as the number of competitors in the market, the magnitude of profit opportunities available and the adaptability of the market participants. In addition, several empirical studies point out that the degree of weak-form market efficiency may vary over time (see, for example, Gu and Finnerty, 2002; Lagoarde-Segot, 2009; Kim et al., 2011; Chuluun et al., 2011). These findings suggest that it is important to understand the type of factors that may cause a market to become efficient. In a review study, Lim and Brooks (2011) conclude that some key determinants are financial liberalization, the occurrence of market crashes or financial crises, changes in regulatory policy and advances in information technology.

In recent years, there has been a trend towards consolidating stock markets via mergers and acquisitions. Examples are the Euronext merger in 2005, the New York Stock Exchange (NYSE) acquisition of Euronext in 2006, the OMX mergers of the Nordic and Baltic exchanges 2003 – 2006, the NASDAQ acquisition of the OMX Nordic stock exchange in 2007, the London Stock Exchange merger with Borsa Italia in 2007 and the acquisition by Intercontinental Exchange (ICE) of NYSE Euronext in 2013. Since the studies referred to in the preceding paragraph emphasize that the degree of market efficiency is time-variable, it is also interesting and important to understand whether a changing market structure (via stock exchange mergers) is a process which may affect market efficiency. This question is addressed in Paper II in this thesis which focuses on the effect of the OMX Nordic and Baltic exchange mergers in 2003-2006 on weak-form market efficiency. To provide a comparison between the pre and the post-merger periods, data covers the period 2000-2007.
As Shiller (1992) has pointed out, excess volatility is evidence of a failure of the efficient markets model. In an efficient market, the observed prices represent good estimates of intrinsic values, given all publicly-available information. As a consequence, price data would be expected to contain less extreme volatility since publicly-available information does not normally change extensively over time. This argument indicates that there may be a negative relationship between market efficiency and extreme price volatility.

A main finding in Paper II is that stock market mergers on average increase weak-form market efficiency. Combined with the previous discussion, the findings in Paper II indicate that stock market mergers may also reduce extreme volatility in prices. Paper IV therefore studies whether stock market mergers affect price jumps. A price jump is defined as a deviation from the current normal variation in the stock price (Hellström et al., 2012; Huang and Tauchen, 2005; Jorion, 1988; Kim and Mei, 2001; Lahaye et al., 2011; Lee, 2012). In other words, jumps are changes in returns that do not belong to the normal price variations. In this framework, the ‘current normal’ price variation is assumed to follow a specific structure which may change over time. For example, normal price variations are commonly assumed to follow a GARCH (Generalized AutoRegressive Conditional Heteroskedasticity) process because this specification makes it possible to capture volatility clustering. A price jump is not a rate of return above a certain level. Instead, it is a relative concept which depends on the ‘normal’ valuation. This means that a given level of return may be viewed as normal when the stock market is volatile but it may be viewed as a price jump when the stock market is calm. Paper IV in this thesis tests whether the mergers of the Nordic stock exchanges, which took place in the period 2003-2006, reduce the probability of observing price jumps for stocks listed on the Danish, Finnish and Swedish stock markets, using data that ranges from 2000-2007.
The findings in Papers II and IV imply that stock market mergers increase market efficiency and reduce the probability of observing price jumps. To further investigate the effects of stock market mergers on key market characteristics, Paper I tests whether the creation of a common, cross-border stock trading platform also changes return correlations between stock markets. By studying the effects of the Nordic and Baltic stock exchange mergers that took place in the period 2003-2006, the primary conclusion is that market consolidation does lead to increased stock market interdependence. This result indicates that international risks may be more important after a stock market merger has taken place because the more correlated stock market returns are, the more difficult it will be to alleviate risk by diversification. It may also imply that the more correlated stock market returns are, the more difficult it will be to avoid financial contagion between countries.

Another objective of this thesis is to empirically study the impact of trust on stock market correlations. This is carried out in Paper III. This is important because understanding under what circumstances stock market correlations are high or low may provide key insights as to when and where to invest in order to achieve a well-diversified portfolio of financial assets. The results gained from Paper III indicate that stock market returns, on average, move together more between trusting countries than between mistrusting countries.

The following part of this introduction is organized as follows. Section 2 gives a short overview of the stock market mergers that have taken place in the Nordic markets. Moreover, Section 2 relates this thesis to the existing literature on stock market mergers, price jumps, stock market correlations and trust. Section 3 summarizes the papers.

2. Background and Previous Studies

In subsection 2.1, I will briefly describe the process of stock market mergers that took place in the Nordic and Baltic countries in the period 2003-2006. I will
thereafter review the most important previous studies related to stock market mergers, price jumps, stock market correlations and trust, respectively, in subsections 2.2-2.5.

2.1 Background

Let us begin by briefly describing the process of stock market consolidations that has taken place in the Nordic and Baltic countries over the last decade. The first step towards consolidation took place in 1998 when the Stockholm and the Copenhagen stock exchanges constructed a strategic partnership called the NOREX Alliance. This alliance implemented a joint equity trading system called SAXESS and harmonized trading rules and membership requirements. As such, this alliance aimed to facilitate interaction between the two exchanges without formally merging them. In 2000, both the Iceland Stock Exchange and the Oslo stock exchange joined the NOREX Alliance, and the Helsinki, Riga and Tallinn stock exchanges joined in 2004. In 2005, the Vilnius stock exchange also joined the alliance.

Subsequently, the stock exchanges in Stockholm, Copenhagen, Helsinki and Iceland, as well as the Baltic stock exchanges, have formally merged into what is today called the NASDAQ-OMX exchange. This process was initiated in 2003 when the Stockholm stock exchange (OMX) merged with the Helsinki (HEX) stock exchange to form a common trading platform called OMHEX. OMHEX changed its name to OMX in 2004. In 2004 the Riga and the Tallinn stock exchanges also merged with OMX, and the Vilnius exchange followed in 2005. In the same year, OMX acquired the Copenhagen stock exchange. In 2006, the OMX Nordic Exchange brand (Stockholm, Helsinki and Copenhagen) was launched together with common listings of all Nordic companies. Finally in 2006, the Iceland stock exchange merged with OMX. In February 2008, OMX was acquired by NASDAQ. After merging the trading platforms, the exchanges are still separate legal entities in their respective jurisdictions, but the rules for
issuers are basically harmonized, especially regarding the listing requirement and disclosure rules.

2.2 Stock market mergers

The rapid advances in information technology that have taken place in the last decade have made it easier than ever to invest globally. Consequently, competition for global capital has increased and there is now a trend towards consolidating stock markets so as to create larger and more attractive trading platforms.

Stock market mergers bring more buyers and sellers together on a common trading platform and this may reduce both the direct and the indirect (non-monetary) costs associated with stock trading. Direct costs may decrease if exchange operators pass on possible gains (e.g. due to scale effects from common trading and clearing systems) from the merger to investors in terms of lower transaction fees. Indirect costs may decrease if a uniform trading and clearing system makes trading easier.

Reduced trading costs are likely to make individual stocks available to a broader market in terms of the number of participants, both domestic and foreign. Larger quantities of stocks are therefore likely to be available at prices marginally above and below the prevailing market prices which, in turn, may imply that price movements are less likely to be driven by individual trades. It is also possible that the number of informed investors will increase which implies that the stock prices may be more likely to reflect intrinsic values than before. One important question in this context is therefore whether mergers have increased price efficiency?

Today, there are only a few earlier studies which have looked at the effects of stock exchange mergers on market efficiency and the results are mixed. In a study of the 2002 merger of the Portuguese stock exchange with Euronext, Khan and Vieito (2012) find mixed results depending on what estimation
method is used, although the findings tend to favour a positive effect of market consolidation on weak-form market efficiency. Charles et al. (2016), in turn, find that mergers of stock exchanges that are large and well developed tend to increase weak form market efficiency. Another relevant study is Pagano and Padilla (2005), who find that the integration process of the Euronext merger made it possible to rationalize operations, reduce direct and indirect costs for investors and increase liquidity in terms of volume and bid-ask spreads.

2.3 Price jumps

A growing body of literature has documented that including jump components in the modelling of volatility do improve volatility forecasting (Andersen et al., 2002; Bates, 2000; Chan and Maheu, 2002). For example, Andersen et al. (2007b) find that the volatility jump component is extremely important in empirical analyses and they suggest that separating jump movements from the smooth continuous movements can significantly improve the forecasting of volatility in exchange rates, equity index returns and bond yields.

What causes price jumps? Empirical studies have found that the prevailing market structure change, macroeconomic news, political news and firm-specific news are key drivers of price jumps (Andersen et al., 2007a; Hellström et al., 2012; Kim and Mei, 2001; Lahaye et al., 2011). Hellström et al. (2012) test how the integration of the Nordic electricity markets has affected electricity price jumps. They find that this market integration has reduced the frequency of price jumps in the electricity market. Kim and Mei (2001) find that political developments in Hong Kong have exerted a significant impact both on the volatility and on the return of the Hong Kong stock exchange. Lee (2012) finds that jumps in the U.S. stock markets are likely to occur shortly after the release of new macroeconomic information, such as Fed announcements, non-farm payroll reports and jobless claims, as well as overall market jumps detected in
the S&P 500 market index. In addition to macroeconomic information, Lee finds that price jumps are related to firm-specific news such as earnings releases, analyst recommendations, past price jumps and dividend dates. Andersen et al. (2007b) find that macroeconomic news announcements influence jumps on the foreign exchange market and on the bond market, except for the stock index market. Lahaye et al. (2011) find similar results.

In a study of the London Stock Exchange, Farmer et al. (2004) find that large price fluctuations are driven by fluctuations in liquidity, i.e. the market’s ability to absorb new orders. Even for the most liquid stocks, there may be substantial gaps in the order book. A new order can therefore trigger a significant price change.

2.4 Stock market correlations

For any observer of the global financial market, it is clear that stock markets in different countries tend to move in the same direction. However, there is some variation in the sense that some stock markets seem to be more correlated with each other than others. Understanding why such differences occur is vital both for portfolio managers who want to obtain a well-diversified portfolio of financial assets, and for policy-makers who want to have a better ‘tool box’ to insulate against global financial risks.

As a consequence, a substantial body of empirical studies has emerged which tries to pin down the key determinants of stock market correlations. (Beine and Candelon, 2011; Bekaert, 1995; Coeurdacier and Guibaud, 2011; Flavin et al., 2002; José, 2009; Karolyi and Stulz, 1996; Lucey and Zhang, 2010; Morck et al., 2000; Pretorius, 2002). In these studies, stock market correlations are related to macroeconomic variables, geographical variables, cultural distance, economic integration and differences in the legal system. Dumas et al. (2003) present statistical evidence to support a positive relationship between output growth rates and correlations in stock market returns. Morck et al. (2000) find
that stock prices are more correlated between poor countries (measured by low per capital GDP) than between rich countries. They conjecture that poor countries lack strong property rights for outsider investors and one implication of this is that stock markets in poor countries incorporate less firm-specific information. On the other hand, prices in poor countries incorporate more market level information, which leads to a higher level of co-movement. In a study of economic integration, Bekaert and Harvey (1997) find that trade is essential for explaining equity correlations, especially between emerging markets. Similarly, Pretorius (2002) confirms that the extent of bilateral trade, and industrial production growth differentials, have been important determinants of stock market correlations between emerging markets during the period 1995 to 2000.

Other studies find that removing frictions related to the trading of financial assets increases financial integration. For example, Flavin et al. (2002) find that the number of over-lapping opening hours and whether countries share a common border (these variables are both used as proxy variables for informational asymmetries across the investment community) tend to increase stock market correlations. Flavin et al. (2002) also conclude that financial variables such as market size and risk (i.e. telecom stocks) influence cross-country return correlation. In particular, markets which are large and liquid tend to be more correlated with each other. Lucey and Zhang (2009) find that cultural distance (where cultural distance may refer to differences in individualism, masculinity, power distance\footnote{Power distance in Lucey and Zhang (2009) measures the extent to which the less powerful members of organizations and institutions accept and expect that power is distributed unequally. For example, in cultures with high power distance, people take inequality as given, tolerate the concentration of power, and are more reluctant to give up independence.} and uncertainty avoidance) reduces international stock market co-movements.

There are also a number of financial variables which have been documented as key determinants of stock market correlations. For example, Forbes and
Rigobon (2002) find that increased volatility may cause a significant increase in stock market correlations. Dellas and Hess (2005) conclude that liquid stock markets are linked to higher stock market correlations since such markets will react more quickly to a greater range of information than a thin market. Awokuse et al. (2009) find that the correlation between Asian emerging markets and three major stock markets (Japan, UK and US) increased with the financial liberalization policies in the early 1990s. They conclude that both financial liberalization and financial integration influence stock market correlations.

2.5 Trust

Arrow (1972) emphasized that “virtually every commercial transaction has within itself an element of trust”. Trust influences how a person decides whether to invest in risky and/or risk-free financial assets (Georgarakos and Pasini, 2011; Guiso et al., 2008). For example, trust has been shown to be important when investors make decisions on whether or not to invest in real estate and/or financial assets (El-Attar and Poschke, 2011). Moreover, trust is an important incentive underlying venture capital investments between countries (Bottazzi et al., 2011). However, the trust that underlies an individual agent’s investment willingness has not been shown to be closely related to risk attitudes (Houser et al., 2010).

Trust has also been shown to be important in other contexts, such as for economic growth (Zak and Knack, 2001), for per capita GDP (Dearmon and Grier, 2009), for central-bank independence (Berggren et al., 2014), for trade (Guiso et al., 2009), for financial integration within the EU (Ekinci et al., 2007) and for portfolio and direct investments between countries (Guiso et al., 2009).

In the literature two types of trust are defined. The first is generalized trust and the other is particular trust. The literature mentioned above all utilized generalized trust in their analysis, while Spring and Grossmann (2013) use bilateral trust in their analysis. Generalized trust is measured as the proportion
of people who think that most people can be trusted, which is intended to capture how much trust people in a country have vis-a-vis other people in the same country. The level of generalized trust varies between countries. A high level indicates that there are a relatively larger proportion of people who think that most people can be trusted. The other type of trust (particular trust) is measured as the proportion of agents in Country A that trust the agents in Country B. No studies, to the author’s knowledge, consider the effects of generalized and particular trust on stock market correlations. This study hence contributes to the current literature by providing a key determinant on relationships between financial markets.

3. Summary of papers

3.1 Summary of Paper I:

In this study, we provide empirical evidence on whether the integration of the Nordic stock exchanges (the OMX Nordic merger) affects the return co-movements between stock markets. We conjecture that stocks on the merged market are possibly valued conditional on similar expectations by both domestic and foreign investors about, for example, the future global macroeconomic situation. An increased conformity in these expectations would possibly lead to a higher return co-movement after the mergers. This study makes a contribution to the literature by focusing on the understanding of determinants of stock market correlations between countries. It also contributes to an evaluation of future stock market mergers. In addition, this study provides an extension of the flexible dynamic correlation model (Baur, 2006; Tsay, 2005), in the spirit of Lee and Engle (1993). This extension is facilitated by introducing transitory components, which are deviations from the long-run trends of conditional correlations, with the aim of separately analysing the merger effects on both the long-run trends and also the transitory components in the conditional correlations.
The findings in this paper indicate that (i) the creation of a common, cross-border stock trading platform has increased long-run trends in return co-movements for all of the markets considered. In other words, market mergers is one of the determinants of cross-country return correlations; (ii) the dynamics of time-varying correlations are mixed, for example some pairs of correlations’ short-run deviations approach the long-run trend in an oscillating manner while it is non-oscillating for others; (iii) The merger decreases the persistency of short-run deviations from the long-run trend, i.e. return correlations adjust faster towards their long-run trend after markets are merged.

3.2 Summary of Paper II

In this paper, the overall purpose is to examine whether the degree of market efficiency may change over time due to changes in market structures. To do this, we study whether the creation of a uniform Nordic and Baltic stock trading platform (via the OMX mergers) have influenced market information efficiency. The aim is also to study possible asymmetric merger effects on information efficiency based on firm location and pre-merger visibility. From this perspective, this paper addresses a central issue in recent research which is concerned with the conditions under which markets become efficient. The paper also provides new empirical evidence on how stock market mergers affect market efficiency. Since we use panel data analysis which allows for covariates and control variables associated with time and firm-specific unobserved heterogeneity, the analysis in this paper is an extension of Khan and Vieito (2012) who study the influence of stock exchange mergers on weak-form market efficiency without conditioning on other covariates. This is important because the recent literature on market efficiency (see. e.g. Gu and Finnerty, 2002; Lagoarde-Segot, 2009; Kim et al., 2011; Chuluun et al., 2011), supports the hypothesis that the relative level of weak-form market efficiency is time-
varying and to a large extent depends on (for the researcher) unobservable factors.

The empirical results of Paper II indicate that information efficiency and turnover, overall, are improved by a consolidation of stock markets but that the effects are asymmetrically distributed in terms of the groupings of firm size, location, foreign trading and firm ranking in the pre-merger periods (on the domestic market) and post-merger periods (on the fully-merged market). For example, we find that information efficiency has increased relatively more for larger firms located on larger markets but that it has been reduced for smaller firms on smaller markets. These results indicate that investors tend to trade in larger firms with which they are already familiar. We also find that firms already visible to (i.e. traded by) foreign investors in the pre-merger period receive a relatively lower increase in information efficiency compared with firms that were less visible in the pre-merger period. In addition, we find that firms with a higher rank in the post-merger period (compared with the pre-merger period) gain a relatively larger improvement in information efficiency.

3.3 Summary of Paper III

The objective of this paper is to enhance the understanding of the role of trust on stock market correlations. Earlier studies have shown that trust is an important determinant of the financial decisions of individual investors. Therefore it is of interest to test whether trust is also an important determinant of stock market correlations. This is important for a number of reasons. First, previous studies generally use a generalized trust measure to study the effect of trust. In Paper III, two types of trust measures are tested; generalized and particular trust. These measures are defined in Section 2.5. Second, little evidence exists concerning the influence of trust on financial market interdependence. Third, there are (to the authors’ knowledge) no previous
studies that are concerned with how geographical distance between countries influences the trust effect on economic investment decisions.

One finding is that generalized trust among nations is a robust predictor of stock market correlation. A possible explanation is that high trust levels may lead to more bilateral capital flows which, in turn, increase stock market correlations. Another finding is that the effects of trust are asymmetrically distributed in the sense that they are greater for countries which are closer to each other. The reason for this may be that distance hinders information transmission, which in turn, decreases trust effects. Finally, the effect of trust is confirmed after using particular trust (bilateral trust between Country A and Country B) as an alternative measurement.

3.4 Summary of Paper IV

In this paper we provide novel evidence on how the creation of common trading platforms affects the probability of price jumps. In particular, this paper empirically studies how jump-probabilities of Nordic stock prices were affected by the OMX mergers that took place in the period 2003-2006. We argue that stock market merger effects are broadly characterized along two potentially important dimensions. Firstly, a larger market attracts more buy/sell orders which affects the order books. One possible effect of this may be that the order books become more evenly distributed than before while another possible effect may be that more stocks are available at prices marginally above/below the prevailing market prices. Secondly, stock market mergers may also change the composition of informed investors. Furthermore, there are (to the author’s knowledge) no previous studies which jointly consider price jumps and stock market mergers; Paper IV therefore contributes to the existing literature by testing the relationship between stock market mergers and larger-scale price movements. As such, Paper IV provides a better understanding of the effects of stock market integration on financial stability.
One main finding of the paper is that stock market mergers, on average, reduce the likelihood of observing price jumps. Another finding is that the effects are asymmetrically distributed in terms of that we only observe reduced probability of price jumps for large and medium size firms. Furthermore, the likelihood of observing negative price jumps decreases for an average firm after the mergers have taken place whereas the likelihood of observing positive jumps increases. Finally, the market risk is reduced after stock market consolidations.
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