

EQUITY MARKET LIBERALISATION IN CHINA

**REVISITING THE SHAREHOLDER EFFECTS OF OPEN
MARKETS**

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Equity market liberalisation in China: revisiting the shareholder effects of open markets

Abstract:

This thesis studies the short-term shareholder value effects of the equity market liberalisation in China and the role played by contextual factors in the examination of the effects. Two event studies are performed over two different reforms: *Qualified Foreign Institutional Investor* where the equity markets were opened up for foreign institutional investors in 2002, and *Stock Connect* where the equity markets were opened up for foreign private investors in 2014. Examining the short-term shareholder reactions for firms being open to foreign investors, the effect for both reforms are negative with the first event study demonstrating a negative reaction of 0.55% and the second event study demonstrating a negative reaction of 0.88%. When examining the impacts coming from contextual factors in China, two findings are outlined. First, governmental ties—more specifically the decrease in governmental ties—are found to play a significant role in the negative short-term shareholder value effects surrounding the equity market liberalisation. Second, targeting institutional investors are found to have a significantly larger positive effect on the short-term shareholders reactions relative to targeting private investors. This thesis thus contributes with empirical evidence on the importance of assessing contextual factors when examining the effects of equity market liberalisation.

Keywords:

Equity market liberalisation, Event study, China, Political connections, Institutional investors

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1 Introduction

Equity market liberalisation is the decision by a country's government to open the domestic equity market for foreign investors. Historically these decisions have played key roles in the strong growth international trade has experienced. Being able to both purchase shares and access capital cross-border is today regarded a fundamental pillar of the international equity market in the Western world. However, this has not always been the case and its mere existence is not a given in the future.

Despite the advancements of international equity markets, nationalistic forces are rising across the globe with UK planning to leave EU and maybe most prevalent, the ongoing trade-war between the two supremacies the US and China. One of the key areas of the conflict regards the restriction of foreign direct investments (FDI) in China. As China gradually has opened up their equity markets for foreign investors, mainly through the two reforms *Qualified Foreign Institutional Investor* (QFII) targeting institutional investors in 2002 and *Stock Connect* (SC) targeting private investors in 2014, the market is yet not entirely open for foreign investors. With the US desiring completely open equity markets, the impact of open and closed equity markets is worth a revisit.

The area of opening up financial markets to foreign investors has attracted a lot of attention from researchers over the years. In previous research, such liberalisations are found to have a positive effect on the equity market mainly through two factors. First, through an increased total factor productivity (TFP) and corporate governance, countries and firms are found to experience increased growth rates, positively impacting the equity prices (Flavin & O'Connor, 2010; Bae et al., 2006; Obstfeld, 1994). Second, the cost of capital is found to decrease following the increased liquidity and improved risk-sharing related to the introduction of foreign investors, consequently increasing equity market value (Frankel, 1994; Stulz, 1981; Levine & Zervos, 1998).

However, the majority of these studies are conducted at a meta-level, examining a large set of countries often over long time-periods. The results thus minimise the impact of contextual factors that potentially would affect the reactions in a given market. By narrowing the scope only to China, we distinguish these factors and examine their impact on the short-term shareholder reaction relative to the announcement of the equity market liberalisation. The factors with the highest impact in the setting of this thesis have been outlined as: i) the impact of governmental ties and ii) the impact of different investor types.

As to the first factor, previous studies in the adjacent area of privatisation provides guidance. As similar studies in Western settings find the announcement of privatisation to positively impact the shareholder value, the opposite is found in China (Calomiris et al., 2010). The reasons behind this are argued to be a historically influential government as well as proven benefits of having ties to politicians (Boubakri et al., 2012; Feng et al., 2014). Applying the same reasoning, introducing foreign investors could thus yield a negative effect opposed to the findings in Western settings.

As to the second factor, the impact on shareholder value from different types of investors has attracted a wide range of research. Dividing investors into institutional investors and private investors, the former is argued to impact both the operations as well as the shareholder value more positively. This is found to hold true for institutional investors in general and institutional investors

that are active, large, stable, foreign, and possess no strong ties to firm management in particular (Gillan & Starks 2003; Borokhovich et al., 2006; Elyasiani & Jia, 2010). As the equity market liberalisation in China principally can be divided into the two reforms QFII targeting institutional investors in 2002 and SC targeting private investors in 2014, their relative impact can be separated.

The literature thus invites to a remarkably interesting gap, where previous international studies of equity market liberalisation are tested in connection to specific contextual factors. By testing the predominantly positive effect of equity market liberalisation against the strong forces of political connections in China as well as through two different reforms targeting different investors we contribute to the existing literature and create a clearer foundation for decision makers to act upon. The research question is thus formulated as:

What are the short-term shareholder value effects of equity market liberalisation in a setting with strong governmental ties, and are the effects different depending on the type of investors?

To test this, two separate event studies on firm-level are conducted over the two different reforms: QFII in 2002 and SC in 2014. Using the *Catalogue of Industries for Guiding Foreign Investment*, of which outlines industries restricted from taking in foreign capital, a distinction between firms open to foreign investors and those restricted can be made. Measuring the short-term shareholder reactions around the announcement of the two reforms, the impact of investors with governmental ties and the relative impact of the institutional and private investors are identified. The effects are measured as *Cumulative abnormal return* (CAR), calculated over a seven-day period around the announcement of both reforms.

This study finds the effect of equity market liberalisation in China to have a short-term negative impact on shareholder value. This is true over both reforms, with QFII showing a negative effect of 0.55% and SC showing a negative effect of 0.88%. These results are opposite to the results of the existing global literature on equity market liberalisations, and identifies the existence of strong political business connections to play a central part in evaluating the effects in China. Second, the introduction of institutional investors is found to have a significantly more positive effect with the impact of institutional investor estimated to be around 1 percentage point more relative to that of private investors. These results contribute to the existing literature and show the importance of taking contextual factors into account when examining the short-term shareholder effects of EML.

This thesis comprises seven main sections. Section 1 introduces our thesis question and outlines our thesis. In Section 2, the existing literature is discussed and analysed focusing on how the stock value is affected by equity market liberalisation, institutional context and the form of market liberalisation, followed by a discussion of the research gap this study fills. Section 3 outlines the method of the study disclosing the input data, the calculation of variables and the statistical test used to examine the results. In Section 4, the descriptive statistics of our sample is presented. In Section 5 the results are presented together with several tests examining the robustness of the results found. This is followed by a discussion of the results in Section 6, where the contributions of the study are outlined in relation to previous literature as well as a discussion regarding the validity, reliability and possibility to generalise the results of the study. Finally in Section 7, the results are concluded, followed by limitations of the study and suggestions for future research.

2 Literature review

This section serves as an introduction to equity market liberalisation (EML) and its effect on shareholder value. Prior studies have both theoretically as well as empirically found an increase in shareholder value following equity market liberalisations, mainly driven by a decrease in cost of capital stimulated by an increased liquidity and international risk-sharing. However, most of these studies are conducted at a meta-level, looking at a large sample of countries over long periods of time. The results are thus considered general and are prone to miss important contextual details. The previous literature is therefore complemented by research of contextual factors that are of importance in EMLs. These contextual details are divided into two parts: i) the institutional setting of the liberalisation, and ii) the different forms of equity market liberalisation. In both parts, focus is on characteristics specific to China.

The institutional setting in China focuses on firms' political connections and how those are found to have a positive effect on both operations as well as stock prices in previous studies. These findings have already been found to contradict other theories of privatisation and rent-seeking rooted in Western business and governance traditions, and the possible dilution of the positive effects are studied relative to the examined positive effects of EML. When it comes to the different forms of EMLs, the focus is on the two different reforms in China and their main characteristic difference: the type of investor. As QFII is targeting institutional investors and SC targets private investors, the different impacts of the two on shareholder value is analysed. Studies of the different impacts of the two in other settings have found institutional investors to have a more positive effect on shareholder value, and institutional investors that are active, large, stable, foreign, and possess no strong ties to firm management to induce a particularly strong effect.

These three subjects are studied sequentially starting with the equity market liberalisation, followed by the impact from the context of the EML and lastly the type of EML.

2.1 Equity market liberalisation

Equity market liberalisation is the decision by a country's government to allow foreigners to purchase shares in that country's equity market (Henry, 2000). Often used in conjunction with financial liberalisation the two should not be confused, since the latter is a more general term and includes several more issues such as trade account liberalisation and bank liberalisation. As the research-field in the more general sphere financial liberalisation is widely divided (see Obstfeld, 1994; Bekaert & Harvey, 1995; Bilio et al., 2006; Baele et al., 2007), the research on equity market liberalisation is more conclusive. Several studies find the opening of the domestic equity market to foreign investors to have a significantly positive effect on stock prices. In an exploratory study of 20 countries, Kim and Singal (2000) demonstrate that the opening of equity markets significantly increases stock prices without a concurrent increase in stock return volatility. In a more thorough study of twelve emerging markets, Henry (2000) finds that the countries' aggregated equity price indices experience an abnormal return of on average 3.3% during an eight-month window leading up to the implementation of the liberalisation. Similar findings are established by Chari and Henry (2004) who by looking at firm-level data from 11 countries find that equity market liberalisations on average increase stock prices with 5.2 percentage points more for firms open to foreign investors compared to firms that are not.

The general consensus of researchers is thus that equity market liberalisations yield higher stock prices. However, in order to understand the theories that drive this development, one needs to investigate further. Founding the argument in the Discounted Cash Flow model, there are mainly two factors that drive equity prices: either the operations of the firm improve yielding a higher value in the numerator, or the cost of capital decreases resulting in a lower value in the denominator. These two aspects are analysed separately below.

Following the inclusion of foreign investors in the domestic equity market, several studies find significantly higher growth rates both at a country as well as a firm-level. In a study of 30 countries who liberalised their equity markets over the period 1980-1997, Bekaert et al. (2000) find that these liberalisations are associated with higher real growth rate in the range of 1% per annum. In an even larger sample of 94 countries who liberalised their equity markets between 1950 and 1999, Quinn and Toyoda (2008) find significantly positive effects on country-growth over the five years following the liberalisation. The same effects are found at a firm-level. In a sample of over 1,100 firms from 28 countries, Mitton (2006) finds that firms that are open to foreign investors experience a higher annual growth rate of around 2.3% as well as higher profitability of around 2.4%, relative to other firms.

Previous research suggests that this increased growth comes mainly from two factors: i) an increase in total factor productivity (TFP), and ii) improved corporate governance. When it comes to TFP, the theoretical model of Obstfeld (1994) suggests that by inviting foreign investor, a greater portfolio diversification is provided which subsequently improves risk-sharing. This promotes risk-taking at a firm-level inviting riskier and more productive projects to be financed, thereby raising aggregate TFP. Empirically this is proven to be true. In a thorough study of 96 countries spanning over the period 1980-2006, Bekaert et al. (2011) find TFP at a country-level to increase by around 2 percentage points following an equity market liberalisation. The study also studies the impact of financial capital and TFP on overall growth, and even though both have a positive impact, the study finds the increase in TFP to be of greater impact contributing to around 63% of the growth. A similar conclusion is drawn by both Bonfiglioli (2008) and Levine (2001) at a country-level as well as Henry and Sasson (2008) at an industry-level. Looking at a firm-level no comparison has been made, but Mitton (2006) finds equity market liberalisations to increase employee efficiency by on average 9.9%.

As of corporate governance, Flavin and O'Connor (2010) argue that the increased growth mainly spurs from the increase in corporate governance coming from equity market liberalisations. For firms in emerging countries where the corporate governance in general lacks in several factors (Leuz et al., 2003), inviting foreign investors is proven to develop this. This is further established by the studies of La Porta et al. (1998) and King and Levine (1993) that from a theoretical standpoint argue that better corporate governance and investor protection promote both financial development and growth. Empirically, Bae et al. (2006) ascertain this. In a thorough study of firms from 25 developing countries, corporate governance is first found to be improved following equity market liberalisations, and second to be a key contributor to the increased growth.

Even though there is a lot of research suggesting increased growth in firms following EML, most of the equity valuation research in the subject focuses on the cost of capital and the efficiency of

equity markets. At a country-level, EML is proven to both increase the size and the liquidity of the incumbent domestic equity markets (Fuchs-Schündeln & Funke, 2001). This comes with a wide range of positives as it accelerates the development of equity markets, which Boyd and Smith (1996) shows theoretically, and Levine and Zervos (1998) shows empirically is positively related to long-run economic growth. Further, equity market liberalisation through international risk-sharing is found to increase equity market efficiency through improved resource allocation (Obstfeld, 1994), as well as a more accurate reflection of information from a larger and more diversified investor base (Bekaert & Harvey, 2000; Kim & Singal, 2000). This is further empirically proven in the two studies by Galindo et al. (2007) and Abiad et al. (2008). Using panel data from twelve respectively five developing countries, they find that equity liberalisation is associated with a more efficient capital allocation, as investment funds are going to firms with higher marginal returns, as well as a reduced variation in written return. This provides a wide range of positives of which the most prominent being a more accurate reflection of the cost of capital.

From a firm-perspective, it is also the cost of capital that has received the utmost attention when it comes to analysing the impact of EMLs. A firm's cost of capital has in line with the CAPM-theory two main components: the risk-free rate and the equity premium. Thus, for the cost of capital to decline either or both components need to decrease. Previous literature distinguishes mainly three reasons of this happening in the scenario of equity market liberalisation. First, equity market liberalisation is found to increase capital inflows (Fuchs-Schündeln & Funke, 2001), which according to the theory of Lucas (1990) yields a lower risk-free rate. This is further empirically proven by Frankel (1994) which shows a clear linkage between the risk-free rate of an emerging country and the foreign equivalent. However with that said, it is important to emphasise that a liberalisation of the equity market does not necessarily yield a fall in the domestic risk-free rate. If the domestic risk-free rate would be below the global equivalent, the risk-free rate could actually increase, following the international linkage of real interest rates (Cumby & Mishkin, 1986). Second, Levine and Zervos (1998) establish that an increase in capital inflows also increases equity market liquidity. As increased liquidity is both theoretically (Ahimud & Mendelson, 1986) and empirically (Ahimud et al., 1997) found to have a negative impact on equity premium, the increased capital inflows are expected to decrease the cost of capital.

Third and most thoroughly examined, allowing foreigners to acquire domestic shares enables risk-sharing between domestic and foreign investors. According to the International Asset Pricing Model (IAPM), increased risk-sharing reduces the equity premium (Stulz, 1981). The model predicts that if the equity market of an emerging country is completely segmented from the rest of the world, the equity premium embedded within its aggregate valuation is proportional to the variance of the aggregate cash flows of the country. Once EML takes place and the emerging country no longer is isolated, its equity premium should instead be proportional to the covariance of the aggregate cash flows of the country and that of the world portfolio. However, if in spite of foreign restrictions, the emerging market is not completely segmented, as Errunza et al. (1992) demonstrated is rarely the case, the domestic market equilibrium valuation will incorporate an equity premium that lies somewhere between the autarky and the fully integrated premium. Nonetheless, as the global consensus is that the local price of risk, i.e. the variance, exceeds the global price of risk, i.e. the covariance (Stulz, 1981; Tesar & Werner, 1998; Bekaert & Harvey, 2000;

Errunza & Miller 1998), the total equity premium is regardless expected to decrease following the inclusion of foreign investors.

Empirically, this is proven to be true. In the previously mentioned study of Henry (2000), the decrease in cost of capital is identified as being the most important factor in the shareholder value increase. Similarly, in a study of 20 countries Bekaert and Harvey (2000) find that across a range of specifications, the cost of capital always decreases after an EML with the effect varying between 5 and 75 basis points.

These two studies are conducted on a country basis and the changes in cost of capital is therefore averaged over the entire market. This generalisation has been questioned in recent studies, and a distinction between firms open to foreign investors from the ones that are not is suggested. As the two first of the above-mentioned factors, risk-free rate and liquidity, are concluded to impact the entire equity market, regardless of whether the firm in question is open to foreign investors or not, the third factor of risk-sharing is more debatable. Asset pricing theory predicts that capital is allocated in such a manner that risks are equalised across assets. Cost of capital should therefore vary cross-sectionally according to the degree of firm-exposure to systematic risk (Sharpe, 1964). Based on this theory, the decrease in equity premium coming from increased international risk-sharing should impact all firms. Recent studies however find low empirical support for this theory (Fama, 1991; Campbell, 2000). Furthermore, in the context of EML, Chari and Henry (2004) empirically tests it. By examining firm-level data, they find that on average 40% of the decrease in equity premium is accounted for by firm-specific increases in risk-sharing. The firm-specific decrease in equity premium is thus based on the same equation as for the IAPM above, just that the equity premium is instead proportional to the covariance of the world portfolio and the *firm cash flows* instead of the aggregated cash flows of the country. As the size of the firm cash-flows differ between firms the relative size of the changes in firm-specific equity premium and market equity premium differ correspondingly.

2.2 Context of equity market liberalisation

Given the large scope of most of the research papers on EML, there is a risk of missing important contextual factors in the aim of generalising a result. Studies are often conducted over a large number of countries and are seldom neither including China. For the aim of this study, it is thus of interest to outline certain contextual factors that could have an impact on EML. In this study, two factors are outlined to contain more influence than others. Those are the institutional setting of the reform, and the different investor targets of the reforms. The research on these two subjects are thus discussed further below.

As previous studies show a clear positive impact on firms' stock performance following a liberalisation of the equity market, there are no clear distinctions of how different markets behave based on the specific setting in that market. This section is therefore outlining the institutional settings specific for the chosen market China. Being a country with a business world that contains strong influences from governmental actors, the focus of this section is thus research regarding governmental forces in the field of business, as well as how previous types of liberalisation have been received in the context of China.

The relationship between the state and enterprises have historically been studied by researchers extensively. In the model of Boycko et al. (1996), the authors explain the relative inefficiency of public firms compared to private firms as well as the subsequent improvements following privatisations. This is rationalised with the fact that public firms to a larger extent pursue strategies that satisfy the objectives of the politicians controlling the firms, rather than profit maximisation. Similarly, Megginson and Netter (2001) published a literature review of 22 empirical studies on privatisation where they find pervasive evidence of operational and financial gains following privatisation, although acknowledging for not existing any ‘standard’ outcomes when analysing specific areas such as employment.

This relationship is not only restricted to direct state ownership in enterprises. Motivated by international evidence on ties between politicians and firms, an increasing number of studies also examine politically connected firms controlled or influenced by both politically active entrepreneurs and entrepreneurs who previously have been employed by the state (Boubakri et al., 2012). The implications of political connections are however ambiguous, as the theoretical and empirical studies show both potential benefits as well as potential costs stemming from the connections. Benefits demonstrated are mainly due to a systematic exchange of favours (Chaney et al., 2011), while the costs refer to issues of rent-seeking behaviour due to agency and governance issues (Qian et al., 2011).

From a shareholder-perspective, ties with government is also found to impact the cost of capital in the firm. In a cross-country study from 2012, Boubakri et al. test this relationship. With a twofold argument, the authors claim the politically connected firms should have a higher cost of capital due to a higher systematic risk caused by higher information asymmetry (Chaney et al., 2011; Chen et al., 2010), while at the same time have a lower cost of capital due to a lower systematic risk caused by softer budget constraints as they are more likely to be bailed-out in the event of financial distress (Faccio et al. 2006). Their empirical test on a sample of more than 6,600 firms from 25 countries shows that the benefits from being politically connected out-weighted the costs in the eyes of the investors, who require a lower cost of capital for investments in the firms with connections (Boubakri et al. 2012).

Focusing specifically on China, similar empirical results are found. In a study on the political economy of privatisation, Calomiris et al. (2010) examine the equity market’s reaction to the announcements of privatisation of listed firms. They find that the announcement of policy changes regarding unanticipated further privatisations has a negative effect on the announcement day, while the announcement of the cancellation of the same policies has a *symmetrically* positive effect. With these results contradicting the above mentioned theoretical and empirical studies on privatisation, the authors attribute them to the peculiar trajectory of Chinese political and economic development, as the authoritarian political control over the economy has remained widespread despite economic reforms. In addition, they argue that while the government allow for private ownership, they have not been shy about their interference in commerce, and that they may be more willing to “grab” profits from private rather than state-owned firms (Calomiris et al., 2010).

However, in the study by Fan et al. (2007) a negative relationship is found, as privatised firms with politically connected CEOs underperformed those without political connections by almost 18%

based on the three-year post-IPO stock returns with the negative effects also being illustrated in the first-day stock return. They support these findings with the arguments that firms managed by politically connected CEOs are more likely to appoint other bureaucrats to the board of directors, rather than those with relevant experience. On the contrary, Feng et al. (2014) find that Chinese firms controlled by entrepreneurs who participate in politics exhibit a 13% superior one-year post-IPO performance. The difference between the two studies are argued to be the relationship between the firm and the politics. According to Feng et al. (2014), the Fan et al. (2007) study focuses on firms with bureaucrats in executive roles, which increases the risk of rent-seeking, while their study focuses on political participation where entrepreneurs are invited by the government and elected by voters. Having ties with the government can thus be determined to have a positive effect on firms, whereas having appointed political members of the board are shown to not possess characteristics as positive.

2.3 Type of equity market liberalisation

Historically, equity market liberalisations have taken on a wide range of forms. They have been included in larger schemes or completely separated, they have been focused on marketing a country index globally or simply embodied the opening of the equity market as a whole. In the context of China, the equity market liberalisation has been liberalised in steps, mainly through the two reforms QFII in 2002 and SC in 2014. Being similar in nature, the key differentiator between the two is the type of investor being targeted. In QFII institutional investors were targeted and in SC private investors were targeted. To fathom the different impacts of the two types of investor, their relative impact on shareholder value is examined in the following section. The focus lies on institutional investors as these are often in the scope of the research, with private investors being what is compared against. The section is divided into three parts. First institutional investors' impact on operations are examined, followed by its related shareholder value impact. Last, the same components are examined focusing on China.

Historically, a considerable frame of research has focused on the role of institutional investors as corporate monitors. Grossman and Hart (1980) opened the subject with the rationale that due to the high cost of monitoring, only large shareholders such as institutional investors, could achieve benefits sufficient to incentivise monitoring. In subsequent literature this hypothesis is proven to be true, as several researchers find evidence consistent with corporate monitoring by institutional investors playing a substantial part in steering managers' focus towards corporate performance instead of self-serving or opportunistic behaviour (McConnell & Servaes, 1990; Nesbitt, 1994; Smith, 1996; Del Guercio & Hawkins, 1999).

Nonetheless, to truly understand the impact of institutional investors, one first needs to comprehend the roles institutional investors can take on and how the roles impact the performance of the firm. Elyasiani and Jia (2010) identify three plausible scenarios that can describe the role played by institutional investors. Those are: i) active monitoring, ii) passive monitoring, and iii) siding with managers who exploit smaller shareholders. These views are not to be considered as mutually exclusive, but more often than not one of them plays a dominant role in explaining the relationship between institutional ownership and firm performance.

In the first scenario of active monitoring, institutional investors take on an engaged role and apply their often highly developed professional knowledge, managerial skills and voting rights to both influence managers as well as assist the firms' management in business decisions. These actions are found to positively impact the operational performance of firms (see Shleifer & Vishny, 1986; McConnell & Servaes, 1990; Smith, 1996). In the second scenario of passive monitoring, institutional investors only act as passive monitors and do not intervene in management. This is usually executed either through the trading of shares in order to earn speculative short-term trading profits or by holding the shares as part of a larger index (Elyasiani & Jia, 2010). The impact of passive monitoring is harder to state as some research find positive relationships with firm performance (see e.g. Appel et al., 2016), while some find no or weak relationships (see e.g. Agrawal & Knoeber, 1996; Duggal & Millar, 1999). Finally, in the third scenario of exploitation, the institutional investors side with management to exploit small shareholders and impair firm performance. One example could be overlooking management fraud as long as there are profits to be made by the institutional investors. Consequently, these actions often lead to negative impacts on firm performance (see e.g. Woidtke, 2002; Ferreira & Matos, 2008).

Focusing on the characteristics of the investors, there are mainly two aspects that have shown to impact the level of influence institutional investors' have on firm performance. Those are: i) the size and stability of the investors, and ii) the pressure-sensitivity of the investors. Considering the first aspect, Maug (1998) finds there to be a clear correlation between the size of the investment and the time the investors hold the position. The rationale is that if institutional investor shareholdings are high, the shares are less marketable and are thus held for longer periods. This in turn increases the ability and willingness to impact firm performance, as if the shares are held longer the incentives to monitor increase. These findings are emphasised by Elyasiani and Jia (2010), with them finding that higher levels of institutional ownership stability are associated with lower information asymmetry, subsequently leading to higher firm performance in the long run. These findings are further accentuated by the study of Cornet et al. (2007). By following all listed firms in the US between 1993 and 2000, they find a significant relationship between firms' operational cash flow returns and the percent of institutional equity ownership. However, this relationship is only significant for those investors *less* likely to have business relations with the firm.

This takes us to the second aspect: the pressure-sensitivity of the investors. Theoretically, institutional investors are often classified as either pressure-sensitive or pressure-insensitive based on the strength of their ties with firm management. First initiated and proven by Brickley et al. in 1988, the theory suggests that investors with closer ties to management, pressure-sensitive investors, are more likely to 'go along' with management decisions in order not to jeopardise current or potential business relations, compared to investors with weaker ties, i.e. pressure-insensitive investors. Rendering the findings into operational performance, Elyasiani and Jia (2010) find pressure-insensitive investors to exert a larger positive effect on the performance of firms compared to the more sensitive counterpart. The channels of these effects include, but are not limited to, increased incentive-based compensation and decreased information asymmetry. This also goes in line with the above findings of Cornet et al. (2007).

Changing the scope to stock performance, the field is not as conclusively studied. The studies that have been made however show the same pattern as the ones related to firm performance. For

instance, in a study of 1,500 large firms, Gompers et al. (2003) find a clear correlation between the exercise of shareholder rights and stock performance. Creating an index based on the rights of shareholders and subsequently buying the companies where the investors have the strongest rights and shorting the ones with the weakest, they were able to achieve an abnormal return of 8.5% per annum, indicating that firms with more active investors also yield higher stock returns. Moreover, McConell and Servaes (1990) find the relative size of institutional investors to be positively correlated with a firm's Tobin's q, while Harford et al. (2015) show that institutional investors holding their position for longer periods yield higher stock returns, accentuating that the size and stability of investors also have a positive impact on stock performance. Lastly, in the research of Borokhovich et al. (2006), the market reaction to anti-takeover measures is significantly less positive when the outside blockholders are more pressure-sensitive relative to the opposite. This emphasises that equity valuations are consistent with the findings of that a larger share of pressure-insensitive investors results in higher operational performance.

As both firm and stock performance is established to be positively correlated with active, large, stable and pressure-insensitive investors there are still some aspects that are proven to impact these factors more than other. One of the most significant ones is the origin of the institutional investor and more specifically the difference between foreign and domestic investors. Gillan and Starks (2003) highlight the important role foreign investors have played in prompting change in corporate governance practices in the world. They find foreign investors more often to take an active stance, partly since domestic institutions not seldom are tied by their incumbent business relations with the corporations. This is particularly true in countries with weaker investor protection. In a study of institutional investors from 23 countries, Aggarwal et al. (2011) find that domestic institutions play crucial roles in improving the corporate governance of firms located in countries with strong shareholder protection, while the key role in improving corporate governance in countries with weaker protection is played by foreign investors. This is especially true if the foreign investors are coming from a country with already strong investor protection. The findings are further accentuated in the study of Ferreira and Matos (2008) who show that US institutional ownership in foreign countries is positively correlated with both firm value and performance.

In the context of China, not much has been done. However, Lin and Fu (2017) proclaim the investor protection of the country to be fairly weak relative to the global average. This indicates that the findings of the impacts of foreign investors could be consistent with the potential impact in China. This is also empirically proven in their study of over 2,400 Chinese firms' performance between 2004 and 2014. They find that institutional investors that are foreign, large and pressure-insensitive show greater positive impact on firm performance relative to the ones that are not. Furthermore, active institutional investors in the form of mutual funds have proven to increase firm value (Yuan et al., 2008) as well as influence firms to pay higher cash dividends (Firth et al., 2016), with the latter being more significant for state-owned enterprises. This accentuates the point of Lin and Fu (2017), showing that institutional investors play a vital role in firms' operations.

2.4 Literature gap

This section concludes on the existent literature level in the field of EML, and identifies the research gap this study aims to fill. The section therefore comprises four parts. First, the existent literature is briefly summarised and a presentation of the key characteristics of previous studies are

presented. The focus of this part is to outline potential gaps in existent literature and the part is subsequently concluded with a presentation of the research question of the study. Second, the setting of the identified research gap is briefly discussed, with the focus on helping the reader understand specific concepts important for the thesis. This is followed by a presentation of the hypotheses that the thesis tests in order to answer the research question. Last, the limitations of the study are briefly discussed.

2.4.1 Comparison of previous literature

The short-term impact of EMLs on shareholder value is both theoretically (Frankel, 1994; Stulz, 1981; Levine and Zervos, 1998) as well as empirically (Henry, 2000; Bekaert & Harvey, 2000) found to be positive. This positive effect come mainly from two factors. First, the operational performance of firms is found to increase due to improved corporate governance and enhanced TFP. Second, following increased capital inflows, increased liquidity and improved risk-sharing the cost of capital is decreased, with the first two impacting the entire market and the last factor partly impacting the entire market and partly being firm-specific. Nevertheless, in order to really comprehend the findings of previous literature in EML, the characteristics of the previous studies need to be outlined. A summary of the characteristics of the key studies within EML and short-term shareholder value effect is presented in Table 1 below.

Table 1. Comparison with previous studies

This table summarises previous studies on equity market liberalisations and compares them in terms of the key characteristics: number of countries studied, number of firms included in the sample, the time interval between the reforms studied and the geographical focus.

Author and publication year	Number of countries	Number of firms	Time interval	Geographical focus
Kim and Singal, 2000	20	Market indices	1976–1996	Emerging markets (China not included)
Bekaert and Harvey, 2000	20	Market indices	1976–1995	Emerging markets (China not included)
Henry, 2000	12	Market indices	1986–1991	Latin America and Asia (China not included)
Chari and Henry, 2004	11	410	1989–1992	Emerging markets (China not included)

Analysing the method and scope of the key studies on EML and short-term stock performance, some interesting characteristics are found. First, all studies are performed over a large set of countries as well as over long time horizons. As this has its benefits when it comes to the generalisation of results, the method is prone to missing contextual factors that could impact the results. Second, except for the study of Chari and Henry (2004), the studies are focusing on the impact on the entire market, which could miss important firm-specific characteristics as outlined by Chari and Henry. Last, the studies are all similar in scope as they are focusing on the late 20th century and emerging markets. Worth to note is that neither of the studies include China and as

none of the studies are focusing on EMLs in the 21st century, a potential research gap is identified. Studying the EML in China and its impact on short-term shareholder value contributes to the existing literature as well as creates the foundation to highlight important contextual factors neglected in previous studies.

Examining the results of studies in adjacent areas to EML in the context of China, contradictions to general studies rooted in Western business and governance tradition are discovered. Calomaris et al. (2010) find that the privatisation of firms, of which yield positive shareholder reactions on a global scene, actually yields the opposite in the context of China. The authors outline the ties to the government in China as one of the key factors for explaining this. This is further accentuated through the studies of Bakobari et al. (2012) and Fan (2007), highlighting the fact that contextual factors in China could play a vital role in impact of EML on short-term stock performance.

Highlighting the importance of institutional settings raises the question of how other contextual factors could impact the outcomes of EML. EMLs all over the globe have been conducted in several different ways, with the EML in China mainly being divided into two reforms targeting institutional and private investors separately. Examining the impact of these could thus be of interest based on the existent literature on EML. The impact of the investor types has in other academic spheres been widely studied, finding institutional investors to positively impact both the operational performance as well as the short-term stock performance, with foreign, active, large, stable investors with no ties to firm management showing particularly positive impacts (Gillan & Starks 2003; Borokhovich et al., 2006; Elyasiani & Jia, 2010).

Narrowing the scope of the short-term shareholder value impact of EMLs to just one market and examining how the contextual factors of that market impact the outcome of the EML could thus be of great interest. This study therefore studies the impact of equity market liberalisation on short-term stock prices in the setting of China where political factors are of importance and the impact from different investor types can be distinguished. The research question is thus stated as:

What are the short-term shareholder value effects of equity market liberalisation in a setting with strong governmental ties, and are the effects different depending on the type of investors?

2.4.2 Setting

Before the operationalisation of the study is presented, a brief understanding of the setting in China is needed. Having a business world moderately interlinked with the government, the country was relatively late with opening their equity markets for foreign investors. This was done mainly through two reforms. The first being the Chinese government's *Qualified Financial Institutional Investor* (QFII) reform in 2002¹, and the second being the *Stock Connect* (SC) from 2014². The target of these differed with the first targeting institutional investors accepted by the Chinese government and the second targeting private investors. By examining the two reforms separately, the relative impact of the two investor types can be distinguished.

¹ Announced on 2002-11-05.

² Announced on 2014-04-10.

Even though China sequentially has opened their equity markets, the Chinese government still restricts some industries from securing foreign capital. The government regularly publishes a document called the *Catalogue of Industries for Guiding Foreign Investment* (hereon referred to as the Catalogue). The Catalogue discloses industries of which foreign investors are restricted from investing in. By using the content of the Catalogue, firms open to foreign investors can be distinguished from firms that are not. The relative effect of important contextual factors related to the changes in shareholder composition can thus be separated and examined.

2.4.3 Hypotheses development

Following the setting and the identified gap in previous literature, the research question is operationalised through four different hypotheses. The hypotheses can be divided into two parts. In the first part, the overall impact of EML on shareholder value in China is examined. This part regards Hypothesis 1. In the second part the impact of different contextual factors on the impact of EML on shareholder value in China is tested. This part consequently regards Hypothesis 2-4.

In the first hypothesis, the short-term impacts on the stock prices of the two separate EMLs are examined. In order to capture all aspects characterising China, only firms open to foreign investors are included. As there are clear findings supporting a positive short-term impact on stock prices, there are at the same time reasons to believe the impact to be opposite in the context of China, mainly driven by a potential dilution in political benefits. The reaction of the equity market could thus go in both directions. Hypothesis 1 is therefore stated as:

Hypothesis 1:

H₀: There is *no* abnormal short-term market reaction to the announcement of EML for firms open to foreign investors.

H₁: There is *an* abnormal short-term market reaction to the announcement of EML for firms open to foreign investors.

Based on the findings of Chari and Henry (2004) of there is difference in shareholder reaction for firms open to foreign investors and those not, Hypothesis 2 is designed to test this. Two main aspects are believed to impact the difference in reactions. First, the firms might experience a change in firm-specific equity premium, as found by Chari and Henry (2004), potentially going in both directions. Second, the reaction might be impacted by the change in shareholder composition, with domestic investors possessing potential political connections being replaced by foreign investors with their specific characteristics. The potential impact of this could thus similarly go in both directions. The tests are therefore designed to be able to capture reactions in both directions. Again, the hypothesis is stated for both reforms. Hypothesis 2 reads as:

Hypothesis 2:

H₀: There is *no* difference in short-term shareholder reaction to the announcement of EML between firms open to foreign investor and restricted firms.

H₁: There is *a* difference in short-term shareholder reaction to the announcement of EML between firms open to foreign investor and restricted firms.

Founded in the discoveries of previous literature (Gillan & Starks 2003; Borokhovich et al., 2006; Elyasiani & Jia, 2010), there is reason to believe there to be a difference in shareholder reaction over the two different reforms. The difference is rooted in two factors. First there might be time-factors impacting the reactions such as asymmetry in information between the two as well as overall differences due to the improvement of the market since 2002. Second, the two reforms are targeting two different investor types with different perceived benefits. In order to incorporate the second of these factors, only firms open to foreign investors are included in this hypothesis, similar to Hypothesis 1. Hypothesis 3 is again designed as a double-sided hypothesis in order to capture both sides, and stated as:

Hypothesis 3:

H₀: There is *no* difference in short-term shareholder reaction for firms open to foreign investors between QFII and SC.

H₁: There is *a* difference in shareholder reaction for firms open to foreign investors between QFII and SC.

In order to truly capture the impact of the two different investor types, Hypothesis 4 is designed. The hypothesis is a combination of Hypothesis 2 and Hypothesis 3, where a distinction between firms open to foreign investors and firms restricted for foreign investors is made. The difference is then compared between the two reforms. As in Hypothesis 2 the market-specific effects are therefore first removed, allowing the focus to be on potential firm-specific equity premium changes and changes in shareholder composition. The impact of these two factors is then compared over the two reforms. In order to capture both effects, Hypothesis 4 is also designed as a double-sided hypothesis and stated as:

Hypothesis 4:

H₀: The difference in short-term shareholder reaction between firms open to foreign investors and firms restricted for foreign investors is *the same* for both reforms.

H₁: The difference in short-term shareholder reaction between firms open to foreign investors and firms restricted for foreign investors is *not the same* for both reforms.

2.4.4 Delimitations of the study

This study focuses on the equity market liberalisation in China over the two reforms QFII in 2002 and SC in 2014. Even though there are other reforms impacting the equity market in China both in between these reforms as well as after, these two have been outlined in cooperation with China business experts as the most important ones for the equity market development in China. With that said, other reforms in China over this period are outside of the scope of this study. Likewise are other equity market liberalisation in other markets.

Furthermore, this thesis is written from the perspective of the shareholders. The results analysed are those *expectations* of the market on the impact of the EML rather than the actual impact on operational performance from the EML. The thesis also focuses solely on the short-term shareholder reactions. The long-term stock performance related to the reforms as well as the actual impact on the firms are thus outside of the scope of this thesis.

3 Method

This study contributes to the existing literature by empirically testing the short-term equity market reaction during two separate EMLs in China. The purpose of this section is to present the research design of how this is operated. The section is thus structured into three parts. First, the data input and its sources are presented and briefly discussed. The second part focuses on the actual estimation of the market reaction. This is conducted using an event study, examining the abnormal return surrounding the announcement of the reforms. In the third part, the statistical tests used to test the hypotheses of the study are outlined.

3.1 Data

In this section, the input data used in order to operationalise the hypotheses is outlined. The sources used for input collection are presented, described and finally evaluated in order to increase the replicability of the study. The data used is structured into three categories: i) firm-specific stock data, ii) index data, and iii) categories from the Catalogue.

Firm specific stock data. Daily stock prices for all firms trading on the SSE and SZSE are retrieved from the publicly available Eikon database³. In the case of missing values, the most recent closing price is used. To minimise the impact of inadequacies in the data, a firm is only allowed to have missing values for a maximum of one business week, i.e. five days. Likewise, all securities with any missing value during the event window⁴ are dropped. In total, 88 out of 1,059 firms are dropped for QFII and 598 out of 2,495 are dropped for SC. Other firm-specific data used for robustness test in Section 6.2.2 is collected from Eikon as well⁵. Worth to address when using stock prices is that these often possess clustering characteristics, of which could impact the results. Such characteristics are presented and studied in Section 4, and robustness tests for heterogeneity are performed in Section 5.2.

Index: Daily trading data for the indices SSE Composite Index and SZSE Composite Index are retrieved from Eikon⁶. These do not contain any missing values.

The Catalogue. The Catalogue is a publicly available document published online by the Chinese government. The Catalogue is published consistently with both an original version in Chinese as well as an official translated version in English. The Catalogue presents a list of industries and sub-industries that are restricted from securing foreign capital. This list is matched with the Global Industry Classification Standard (GICS) on a sub-industry level in order to outline the firms restricted for foreign investors from the ones that are not. As the matching is done relative to the two reforms, the Catalogue published in 2002 is used for QFII and the Catalogue published in 2012 is used for SC⁷. The matching for each sub-industry can be found in Appendix B.

³ Retrieved 2019-03-04

⁴ The event window is the period of which the effect of the event is measured and the estimation window is the period prior to the event window used to estimate expected returns used to compare with the observed returns detected the event window. A more detailed explanation to these are outlined in Section 3.2.1.

⁵ Retrieved 2019-03-13

⁶ Retrieved 2019-03-05

⁷ Retrieved 2019-03-19

The overall quality of the data is believed to be high and the risk of potential data processing errors is considered low. Eikon is a commonly used source by researchers for financial data, and the primary source is used for the Catalogue. The collection of the data is also of low complexity, limiting the risk of manual errors.

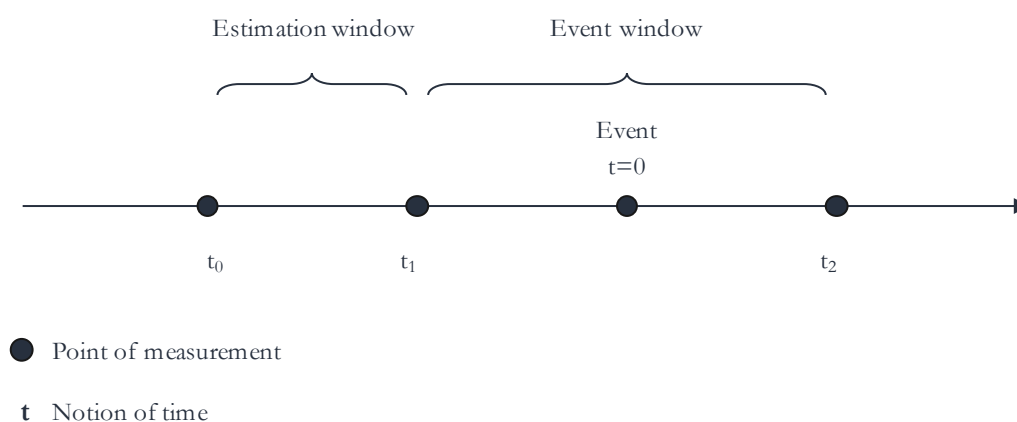
3.2 Estimation of variables

In order to estimate the reactions over the announcements of EML, the event study method is applied. This section elaborates on the design of the event study, the estimation of the key variables used as well as outlines important assumptions needed for the study to hold.

3.2.1 Event study design

The event study design used in this study is based on the standard set up as put forward by MacKinlay (1997), and outlined below in Figure 1. The event in this study is the announcement of the EML, separated for the two reforms. The event window is the period over which the effect of the event is measured and the estimation window is the period prior to the event window used to estimate the *expected* returns used to compare with the *observed* returns detected during the event window. A more thorough discussion of the interplay between these two is outlined in Section 3.2.1. The length of the event and estimation windows are further discussed below.

Figure 1. Event study design



Event window. The event window is estimated as the day of the announcement ± 3 trading days, resulting in a period of seven trading days. A fixed-length event window is used due to the large size of the data sample. Using a fixed-length window is more practical, as it would be difficult to tailor windows for all firms. The assumption of the event window being the same for all firms could be questioned, yet given the large sample size such potential discrepancies are believed to be averaged out over the entire sample. In case the market would initially misinterpret the event's effect on some of the firms, these miscalculations offset one another. Literature on event window length varies, where Mitchell and Netter (1989) find information to be incorporated within 15-90 minutes, while the study of Lev (1989) on a sample of 19 event studies in the three major accounting journals finds an event window to range between two days to one year. Since the event

in this study is a governmental reform that is not firm-specific news but rather general market news, the event window is set at ± 3 trading days.

Estimation window. As to the length of the estimation window, there is a clear trade-off between the large data sample of having longer periods and the relative importance of firm stock behaviour closer to the event. A good level to capture both parameters as suggested by MacKinley (1997) is 120 days. The estimation window is thus fixed to 120 trading days prior to the event ending the day before the start of the event window. By ending the estimation window before the event window, the impact of cross-correlation between the event and estimation window is minimised.

3.2.2 Estimation of CAR

The overall aim of an event study is to estimate the abnormal short-term return related to a specific event. The key fundamentals for that estimation can be divided into two components. The actual observed one-day return (R) and an estimated *expected* one-day return (ER). The difference between those two is defined as the abnormal return (AR). For each firm—denoted as i —and time unit—denoted as t —the relationship can be illustrated as in Equation 1:

$$AR_{i,t} = R_{i,t} - ER_{i,t} \quad (1)$$

As an event study in its simplest sense is fairly straight-forward, the estimation of the expected return can be measured in several different ways. According to MacKinlay (1997), there are mainly three different approaches commonly used. The most simplistic model is the *constant mean-return model* that simply estimates the expected return to be the mean of the past performance. More commonly used are the two market models of which are divided into the *one factor model* and the *multi-factor model*, of which both have shown a better predictability in past research. As adding factors to increase the explanatory power of the model is academically appealing, additional factors, as complementary to the market factor, is shown to have little marginal explanatory power (MacKinlay, 1997). The *one-factor market model* is thus preferred to estimate the expected return of the firms in this study.

The *one-factor market model* relates the return of any firm to the market portfolio. The basic function can be written as:

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t} \quad (2)$$

where $R_{i,t}$ denotes the firm-specific return and $R_{m,t}$ denotes the return of the market portfolio at the point in time t . The return of a given firm at a given point in time is then explained by the three firm-specific model parameters: α , β and ε . α denotes the intercept of the return of which is unexplained by the market portfolio return. β , commonly referred to as beta, expresses the sensitivity of the firm return to the variance of the market portfolio, and ε is the error term that contains the part of the return of which cannot be explained by any of the two other parameters. The expected mean of the standard error is zero and has a variance of $\sigma_{\varepsilon_i}^2$.

In this thesis, the firms are related to two different stock exchanges. They are either traded at the Shanghai Stock Exchange (SSE) or the Shenzhen Stock Exchange (SZSE). Even though there is no major difference between the two exchanges, they present two different market indices. In order to predict the expected return of each firm in the most reliable way possible, the firms are using the index return of their respective exchange platform as the market portfolio return. The market portfolio for firms traded at SSE is thus the SSE Composite Index and firms traded at SZSE uses the SZSE Composite Index.

The estimated parameters together with the return of the market portfolio are used to determine the expected return of the security during the event window. This expected return is then used as per Equation 1 to calculate the AR for each firm i and time t . To measure the cumulative abnormal return (CAR), the AR is then aggregated over the event window, as per Equation 3:

$$CAR_{t_1, t_2} = \sum_{t=t_1}^{t_2} AR_t \quad (3)$$

where the event window is the days in between t_1 and t_2 , as illustrated in Figure 1 above.

3.2.3 Essential assumptions for event studies

Event studies are based on several underlying assumptions that must hold. The essential assumptions are: i) efficient markets, ii) unanticipated event, iii) no confounding effects, and iv) unbiased estimators. Each of these assumptions are described below along with potential factors prompting them not to be fulfilled.

Efficient markets. The assumption of efficient markets is essential in order to capture the market's initial short-term shareholder reaction to the EML reforms. This is a strong assumption that is generally applied to equity markets, and one must be aware that there are many factors that could cause this assumption not to hold. Such factors could be information asymmetry and illiquidity. In order to mitigate this risk, firms that do not pass the minimum threshold of data losses are consequently dropped (see Section 3.1). Also, the event window is chosen with a range of ± 3 days in order to incorporate potential market inefficiencies when it comes to information asymmetry.

Unanticipated event. The assumption of an unanticipated event must hold in order to obtain abnormal returns. If the event is anticipated, the value effect should already be accounted for in the prediction of expected returns, given an efficient market. The main risk for this assumption not to hold is that information regarding the event is leaked before the event. This risk is mitigated by using a longer event window of ± 3 trading days, that so the comprehensive effect can be captured. Also, a systematic investigation of the ARs over the estimation windows is conducted for both reforms, with no unexplainable reactions found.

No confounding effects. The assumption of no confounding effects must hold so that the abnormal returns observed during the event window can be related to the event and not to other events creating parallel abnormal reactions. The risk of confounding effects increases with longer event windows and larger sample sizes. Since the event in this study is the announcement of a nationwide regulation, a confounding event would be another nationwide or industrywide event affecting the

equity market. This is mitigated by searching news archives for news related to China and the global equity market during the event window and controlling for these. No confounding news were found.

Unbiased estimators. A basic assumption underlying statistical tests is that the sample is independently distributed, i.e. that the event is independent of other events. This could be impacted in several ways leaving the error term systematically different from zero or the standard deviation being either too small or too large (Kothari & Warner, 1997). This would consequently bias the test statistics. Barber and Lyon (1997) identify mainly three ways of which the use of asset prices could bias the sample. First, through the use of market indices to estimate expected return, the sample could be subject to *rebalancing bias*. That is as indices could be regularly rebalanced, while the firms in the sample's equity return are not. This could negatively bias the sample. Second, a *new listing bias* could occur as indices could include newly listed companies, which are known to have abnormally low returns relative to the rest of the sample firms. By including underperforming firms in the benchmarking index, a positive bias could be created in the sample. Last, there might be biases linked to the method of calculating abnormal return, referred to as *measurement bias*. By simply compounding the abnormal returns over the event window, a positive bias could be induced. Even though the authors admit to the aggregated impact on the results is not of great magnitude, they should all be taken in account when assessing the results. These biases are thus examined in Section 6.2.2.

3.3 Statistical tests

Having outlined the calculation of the CAR-variable, this section outlines the statistical methods used to test the hypotheses of the study. The hypotheses are tested by estimating the CAR over the event windows of both reforms separately. The statistical tests for each hypothesis are subsequently disclosed below, starting with Hypothesis 1. In Hypothesis 1, the impact of the EML on short-term equity market value is examined. The test is thus stated as:

Hypothesis 1:

$$H_0: CAR_{Op, Ref} = 0$$

$$H_1: CAR_{Op, Ref} \neq 0$$

where *Op* denotes firms being open to foreign investors and *Ref* denotes the different reforms, separating the QFII reform from the SC reform. Hypothesis 1 thus tests whether the average cumulative short-term abnormal return over the event window is different from zero for both reforms. The second hypothesis regards the relative reaction between firms open to foreign investors and those that are not. The test for Hypothesis 2 is thus:

Hypothesis 2:

$$H_0: CAR_{Op, Ref} = CAR_{Re, Ref}$$

$$H_1: CAR_{Op, Ref} \neq CAR_{Re, Ref}$$

where *R* denotes firms restricted from taking in foreign capital, and *Re* and *Op* are mutually exclusive. The test for Hypothesis 2 is thus the average CAR for firms open to foreign investors being different from the average CAR for restricted firms. In the third hypothesis the relative

impact of the announcement on firms open to foreign investors between the two reforms is examined. The test of Hypothesis 3 is thus:

Hypothesis 3:

$$H_0: CAR_{Op, QFII} = CAR_{Op, SC}$$

$$H_1: CAR_{Op, QFII} \neq CAR_{Op, SC}$$

where *QFII* and *SC* denote the reforms, and are thus a sub-set of *Ref*. The test for Hypothesis 3 is the average CAR for firms open to foreign investors in QFII being different from the average CAR for the same firms during SC. Finally, the test of Hypothesis 4, where the difference in stock price reaction between firms open to foreign investors and firms restricted for foreign investors being different for both reforms is examined. The test is stated as:

Hypothesis 4:

$$H_0: CAR_{Op, QFII} - CAR_{Re, QFII} = CAR_{Op, SC} - CAR_{Re, SC}$$

$$H_1: CAR_{Op, QFII} - CAR_{Re, QFII} \neq CAR_{Op, SC} - CAR_{Re, SC}$$

The test thus examines the difference in CAR between firms open to foreign investors and those that are restricted for both reforms and then tests whether these are separated from each other.

With the tests of the hypotheses outlined, the statistical tests used to test these are now presented. To minimise the bias from potential data inaccuracies, two types of tests are performed for each hypothesis: one parametric test which assumes a normal distribution and focuses on the mean, and one non-parametric test which assumes no specific distribution and rather focuses on the relative position of observations as well as the median. In total, mainly four different tests are performed – t-test, OLS regression, Wilcoxon sign-rank test, and Wilcoxon rank-sum – and the method behind these are presented shortly below, starting with the parametric tests.

3.3.1 Parametric tests

The parametric tests performed are t-tests and OLS regressions, with Hypothesis 1-3 being tested through different kinds of t-tests and Hypothesis 4 being tested by an OLS regression. These two are presented briefly below.

3.3.1.1 T-test

Due to the population variance being unknown, the sample is assumed to follow the student's t-distribution. Assuming this distribution, the first three hypotheses are parametrically tested based on the t-test method. The tests are similar in nature but differ slightly depending on the hypothesis. For clarity, only the method for the first hypothesis is presented here, with the other t-statistics being disclosed in Appendix C. The method for Hypothesis 1 which tests whether CAR for each reform is different from zero is presented below.

Given a random sample of n observations with the mean of CAR being \bar{x} , the standard deviation being σ and the population being normally distributed with a mean of zero, the random variable t follows the student's t-distribution with $(n-1)$ degrees of freedom as:

$$t_{n-1} = \frac{\bar{x}_{t_1, t_2} - 0}{s/\sqrt{n}} \quad (4)$$

where \bar{x}_{t_1, t_2} denotes the sample cumulative abnormal return mean over the event window. Given the hypothesis of this being separated from zero, the null hypothesis is rejected if:

$$t_{n-1} = \frac{\bar{x}_{t_1, t_2} - 0}{\frac{s}{\sqrt{n}}} > t_{n-1, \alpha} \quad (5)$$

where α denotes the significance level. For Hypothesis 2 and 3, the independent sample t-test assuming unequal variances is used. The test statistic for this is found in Appendix C.

3.3.1.2. OLS regression with interaction term

For the final hypothesis, where the firms open to foreign investors are distinguished from restricted firms and then the difference between these are compared over the reforms, an OLS regression corrected for heteroscedasticity is used as:

$$\widehat{CAR}_i = \hat{\beta}_0 + \hat{\beta}_1 \times reform_i + \hat{\beta}_2 \times open_i + \hat{\beta}_3 \times interaction_i + \varepsilon_i \quad (6)$$

where \widehat{CAR}_i is the estimated CAR over the event window surrounding the announcement of the EML, *reform* is a binary variable taking the value 1 for CARs observed in the second reform SC and taking the value 0 for CARs observed in the first reform QFII. *open* is similarly a binary variable taking the value 1 for firms open to foreign investors and 0 for firms in sectors restricted from foreign investors. *interaction* is an interaction binary variable defined as *reform* \times *open* taking the value 1 for CARs both in the second reform SC *and* for firms that are open to foreign investors and taking the value 0 for CARs where one or both conditions do not hold. It is the coefficient $\hat{\beta}_3$ that measure the relative difference in impact *exempt* to market-specific impacts between the two reforms. It is thus this coefficient that is of interest for the test of Hypothesis 4 and is tested for significance in Section 5.1.

3.3.2 Non-parametric test

To minimise the impact of potential data or sample inefficiencies as well as increase the robustness of the tests, non-parametric tests are performed for all hypotheses as well. The basic foundation of non-parametric tests is that they do not assume any distributions nor take the actual value of the observations into account. The relative value among the observations is of higher importance and the impact of e.g. outliers is minimised. For the four hypotheses two different kind of tests are used. Those are: i) the Wilcoxon signed-rank test for hypothesis 1, and ii) the Wilcoxon rank-sum test (also referred to as the Mann–Whitney U test) for hypothesis 2-4. The method for the two tests do not differ significantly, as they are both testing the relative distributions of either two samples or just one sample. For clarification, only the Wilcoxon rank-sum test will be presented here with the method for the Wilcoxon signed-rank test being disclosed in Appendix C.

The Wilcoxon rank-sum test is based on the assumption of the observations in the two populations being independent from each other, as well as the populations themselves being independent from

each other. If this assumption holds the double-sided null hypothesis is stated as the difference in distribution between the two populations being zero. All observations of both populations are jointly ranked and the ranks are subsequently aggregated for each population. The aggregated ranks for population 1 is referred to as R_1 and the aggregated ranks for population 2 is referred to as R_2 . The test statistics for each population are then calculated as:

$$U = n_1 n_2 + \frac{n_1(n_1 + 1)}{2} - R_1 \quad (7)$$

$$U' = n_1 n_2 + \frac{n_2(n_2 + 1)}{2} - R_2 \quad (8)$$

where n denotes the number of firms in each population. The null hypothesis is then rejected if any of the test statistics is greater than the critical value as:

$$Max(U, U') > U_{\alpha, n_1, n_2} \quad (9)$$

where α denotes the significance level. This method is used for Hypothesis 2-4. The method used for Hypothesis 1 is disclosed in Appendix C.

A summary of the tests of all hypotheses, the statistical tests used and an economic interpretation of the results following a rejection of the null hypothesis is outlined below in Table 2.

Table 2. Summary of hypotheses

This table summarises the hypotheses that are tested in this thesis. Each hypothesis is presented with the alternative hypothesis, the method used for both parametric and non-parametric tests, followed by the economic interpretation of the results if the null hypothesis is rejected.

No	Alternative hypothesis	Parametric test	Non-parametric test	Economic interpretation of the results following a rejection of the null hypothesis
1	$CAR_{Op,Ref} \neq 0$	T-test	Wilcoxon signed- rank	There is either a short-term shareholder value <i>creation</i> or <i>destruction</i> following the announcement of the EML.
2	$CAR_{Op,Ref} \neq CAR_{R,Ref}$	T-test	Wilcoxon rank-sum	The expected value creation or destruction <i>differs</i> between the firms open to foreign investors and those not.
3	$CAR_{QFII} \neq CAR_{SC}$	T-test	Wilcoxon rank-sum	The expected value creation or destruction <i>differs</i> between the QFII EML and the SC EML.
4	$CAR_{Op,QFII} - CAR_{R,QFII} \neq CAR_{Op,SC} - CAR_{R,SC}$	OLS	Wilcoxon rank-sum	The relative impact on value creation or destruction between firms open to foreign investors and those restricted <i>differ</i> between reforms.

4 Descriptive statistics

Prior to testing the hypotheses of the study, the descriptive statistics of the input data are outlined. The purpose of this is twofold. First, it provides the reader with an understanding of the characteristics of the data, and second it aids in highlighting potential data inadequacies of which can either be controlled for or should be kept in mind when interpreting the results. The investigation of potential data inadequacies are divided into two parts. First, potential undesired characteristics in the test variable CAR are outlined, and second potential irregularities in the distribution of sub-samples are disclosed. The section starts with a presentation of the descriptive statistics of the CAR variable over both reforms separately in Table 3.

Table 3. Descriptive statistics

This table presents descriptive statistics of the variable CAR for QFII and SC respectively.

CAR	QFII	SC
Number of observations	1,009	1,896
Min	-33.6%	-20.2%
Mean	-0.5%	-0.7%
Max	16.2%	28.9%
Median	-0.5%	-0.9%
Standard deviation	2.6%	4.2%
5% percentile	-3.9%	-7.1%
95% percentile	3.3%	6.3%
Normal distribution p-score	0.0%	0.0%

Comparing the CAR for both reforms, no large differences are found except for SC in general being more negative and having larger deviations around the mean. Both reforms are confirmed to follow a normal distribution, which is a requirement for most parametric tests. Statistical tests as well as visual interpretations of the distributions of both reforms are disclosed in Appendix D. Even though both reforms are normally distributed, they both contain statistical outliers. These are defined as observations more than three standard deviations from the mean. The fact that the data contains statistical outliers is no surprise as the data examined is stock performance. That is data where speculation from time to time plays a vital role, which could yield abnormally large results in both directions. Nonetheless, CAR values of e.g. -33.6% and 28.9% are considered outliers that potentially could bias the results. Therefore, as already disclosed in Section 3.3, the parametric tests are accompanied by non-parametric tests. That is to remove the impact of outliers as well as test the robustness of the results. The tests are also conducted in the absence of outliers in Section 5.2.3.

In hypothesis 3 and 4, the tests are conducted using a balanced data set. This is to minimise the potential impact of firm-specific characteristics that could bias the result. The balanced dataset only contains firms that: i) were present during both reforms, and ii) did not experience any changes related to the Catalogue, i.e. are either open for foreign investors during both reforms or restricted during both. The number of observations in the balanced sample is thus smaller compared to the number of observations in the two reforms separately. A presentation of the distribution is disclosed below in Table 4, together with a distinction between firms open to foreign investors and those restricted.

Table 4. Distribution of sub-groups

This table presents how the observations in the samples QFII, SC and balanced dataset, are distributed over the open and restricted groups.

Number of observations	Open	Restricted	Total sample
QFII	718	291	1,009
SC	1,455	441	1,896
Balanced set	540	181	721

As seen in Table 4, there is a larger share of firms open to foreign investors compared to the restricted ones in all sub-groups. However, the relative size between the three groups do not differ greatly, varying between 71% and 75% of firms being open. Also as discussed in the above paragraph, there is quite a large difference in number of firms between the balanced set and the two separate reforms. This could potentially bias the results as only surviving firms are examined in the balanced set. To test the impact of this bias, the tests conducted using a balanced data set are also performed using the entire sample in Section 5.2.1. The balanced sample is also concluded to follow a normal distribution, and the test for this can be found in the Appendix D.

As tests are performed both across time and across the restrictions of firms, there is a possibility of the classification of these biasing the results. The characteristics of the firms in all groups are thus presented below in Table 5 and subsequently discussed.

Table 5. Characteristics of sub-groups

This table presents the firm characteristics of all sub-groups in the sample. The values presented are the median of each sub-group.

	QFII		SC	
	Open	Restricted	Open	Restricted
MCAP (MCNY)	2,397	2,476	3,968	5,035
D/E	0.49	0.43	0.36	0.42
Earnings growth	104%	125%	95%	129%
P/B	1.98	2.23	1.40	1.21
Average stock turnover (CNY)	3,056,247	3,351,984	39,169,014	46,722,714

Examining the characteristics of the sub-samples in the study, there are mainly two aspects that are worth mentioning. First, restricted firms are in general larger when it comes to market capitalisation for both reforms, with the difference being slightly larger in SC. As larger companies often are both more traded and more present in media, there is a possibility of these firms biasing the results. Control tests and tests for heterogeneity based on the size of the firms are thus performed in Section 5.2.2. Second, examining the average stock turnover there is a major difference between both reforms. This is no surprise as there is a time difference between the two reforms of more than ten years, a period where the equity markets in China has developed tremendously. However, as increased liquidity is found to lower equity premium, control tests as well as heterogeneity tests for average stock turnover are performed. These are disclosed in Section 5.2.2.

5 Empirical findings

In this section, the empirical tests of the study are performed and presented. The empirical findings are structured into two sub-sections. First, the empirical results of the statistical tests are outlined and interpreted. This is followed by tests examining the robustness of the results. In this part, the rationale of the tests, the results of the robustness tests and the implications are sequentially outlined.

5.1 Empirical results

In this section, the hypotheses of the study are tested. As outlined in Section 3.3, the hypotheses are divided into two parts. In the first part the overall impact of EML on shareholder value in China is analysed. This is performed by testing the first hypothesis on the two different reforms. In the second part, the effect of the different contextual factors on the impact of EML on shareholder value in China is tested. To examine this, the three remaining hypotheses are tested, comparing the firms open to foreign investors with the restricted firms and then separating these differences over the two different reforms.

5.1.1 Equity market liberalisation and shareholder value

By testing the cumulative abnormal return for the firms open to foreign investors over the event window, the initial shareholder value creation or destruction corresponding to the announcement is assessed. The reactions are separated by the two different reforms and presented below in Figure 2 and Figure 3, respectively.

Figure 2.

CAR, firms open to foreign investors (QFII)

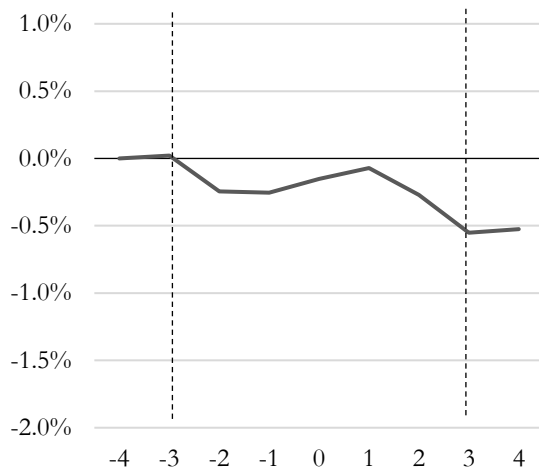


Figure 3.

CAR, firms open to foreign investors (SC)



The shareholder effect of inviting foreign investors to China is visually negative. This is true for both reforms, with QFII having the majority of the negative effect during the days *after* the event and SC having it *prior* to the event. Visually, the effect in SC is also more negative. With Hypothesis 1 being CAR to be separated from zero during the event window, this is statistically tested. Performing both parametric as well as non-parametric tests, the following effects are found.

Table 6. Results for Hypothesis 1

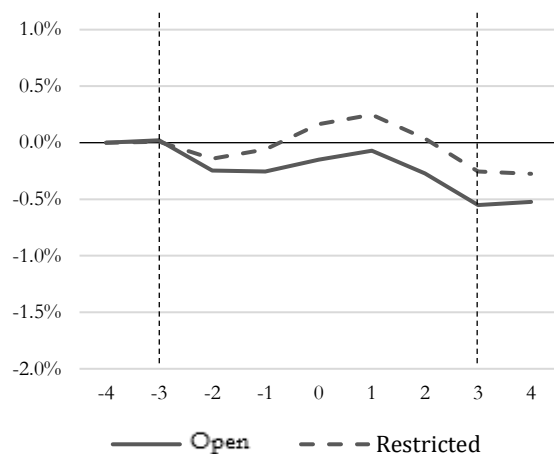
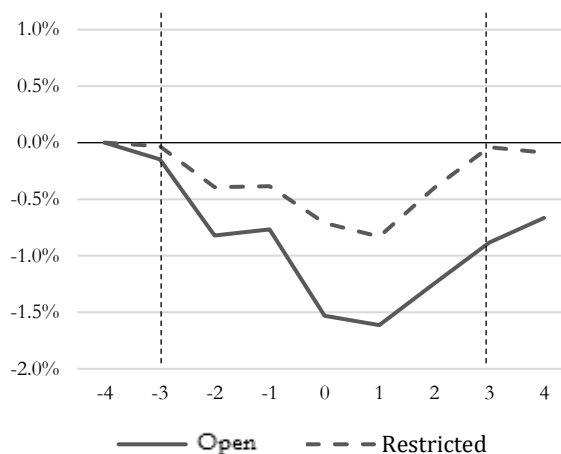
This table presents the results from testing Hypothesis 1. The hypothesis is tested using the parametric t-tests where the mean of $CAR_{Op,Ref} \neq 0$, and non-parametric Wilcoxon sign-rank tests where the median of $CAR_{Op,Ref} \neq 0$. These are tested for the QFII sample and the SC sample separately.

Metric	QFII		SC	
	Mean	Median	Mean	Median
Number of observations	718	718	1,455	1,455
Value	-0.55%	-0.51%	-0.88%	-1.00%
P-value	0.00%	0.00%	0.00%	0.00%

The visual negative effect is accentuated in the econometric tests. Over a window of three days prior to and three days after the announcement of an EML, the cumulative abnormal return is negative with 0.55% during QFII and 0.88% during SC, on average. Both results are significant with a significance level of 1%. This holds true for both parametric as well as non-parametric methods.

5.1.2 Equity market liberalisation and the impact of contextual factors

With the effects of EML in China being negative, this section analyses the impact of contextual factors specific for the EML in China. This is conducted by testing the three remaining hypotheses. The first of these hypotheses disentangles the relative impact of actually being open to foreign investors relative to just being impacted by market-wide decreases in cost of capital. To test this, the firms are divided into two groups, one with firms from industries open to foreign investors and the other where foreign investors are restricted. Distinguishing the two sub-groups over the event windows, the following CARs are found:

Figure 4. CAR by sub-group (QFII)**Figure 5.** CAR by sub-group (SC)

Visually, firms where foreign investors are accepted experience a more negative CAR compared to firms where they are restricted. This holds true for both reforms, with SC having a visually larger difference. As in the previous section, this is tested statistically, both parametrically using a t-test and non-parametrically by conducting the Wilcoxon rank-sum test. The null hypothesis for both

tests is the difference between the two sub-groups being separated from zero. The results from this can be found below in Table 7.

Table 7. Results for Hypothesis 2

This table presents the results from testing Hypothesis 2. The hypothesis is tested using the parametric t-tests where the mean of $CAR_{Op,Ref} - CAR_{Re,Ref} \neq 0$, and the non-parametric Wilcoxon rank-sum tests where the median of $CAR_{Op,Ref} - CAR_{Re,Ref} \neq 0$. These are run for the QFII sample and the SC sample separately.

Metric	QFII		SC	
	Mean	Median	Mean	Median
Number of observations	1,009	1,009	1,896	1,896
Value	-0.30%	-0.16%	-0.84%	-0.54%
P-value	10.18%	19.90%	0.02%	0.00%

Testing the difference between the two sub-groups being separated from zero, different results for the two reforms are found. For QFII, the null hypothesis cannot be rejected. This is the case for both the parametric as well as the non-parametric test. There is thus no significant difference between the firms where foreign investments are allowed and the ones where they are restricted. For the second reform SC, the results are significant at a significance level of 1% for both tests. There is a significant difference between the firms open to foreign investors and the ones that are not of on average 0.84 percentage points, with the former being more negatively impacted.

Receiving different results when it comes to significance for the two reforms, the next test focuses on the difference between the two reforms. The test is thus designed to outline mainly two differences. First, the potential difference in cost of capital changes, and second the relative impact of the two investor types. To capture both these effects, only the firms open to foreign investors are included. Again, one parametric and one non-parametric test is conducted, with the former being a t-test and the latter being a Wilcoxon rank-sum test. The null hypothesis for both tests is the difference between the two reforms being separated from zero. As described in Section 3.3, these tests are performed using a balanced sample, i.e. only including firms that both were present during both reforms and did not experience any changes when it comes to the Catalogue. The results are presented below in Table 8.

Table 8. Results for Hypothesis 3

This table presents the results from testing Hypothesis 3. The hypothesis is tested with the parametric t-test where the mean of $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$, and the non-parametric Wilcoxon rank-sum tests where the median of $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$.

Metric	Mean	Median
Number of observations	1,080	1,080
Value	0.51%	0.53%
P-value	1.13%	0.05%

Testing the firms open to foreign investors, firms are found to experience a more negative CAR when private investors are included during SC, compared to QFII where institutional investors are targeted. The difference in CAR is 0.51 percentage points, on average. This effect is significant both in the parametric as well as the non-parametric test, with the former being significant at a 5% significance level and the latter at a 1% significance level.

In the last test, the market-specific effects are removed in order to only examine the relative effect of being open to foreign investors relative to not being open. This difference is then compared over the two reforms. By doing this, the impact of cost of capital is decreased, with the only difference between the two when it comes to cost of capital being the relative difference in firm-specific equity premium changes and the market equivalent. A larger portion of the results can thus be linked to the changes in shareholder composition. The test is therefore performed as a combination of Hypothesis 2 and Hypothesis 3, where only the effects from taking on foreign capital is compared between the two reforms. As such, the results can be interpreted based on two factors: i) the difference between the firm change in firm specific equity premium and the overall market changes in equity premium, and ii) the change in shareholder composition. Again, the results are presented both using a parametric method as well as non-parametric method. The results are presented in Table 9 below.

Table 9. Results for Hypothesis 4

This table presents the results from testing Hypothesis 4. The hypothesis is tested using a parametric OLS regression where the mean of $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$, and the non-parametric Wilcoxon rank-sum tests where the median of $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$.

Metric	Mean	Median
Number of observations	1,080	1,080
Value	1.07%	0.49%
P-value	0.60%	0.83%

Testing the difference in impact, a difference of -1.07 percentage points in CAR is found between firms open to foreign investors and those restricted, compared over the QFII and SC reforms. A result significant at a significance level of 1%. Assessing the difference non-parametrically the difference is also separated from zero at a significance level of 1%. The effects coming from firm-specific equity premium changes and changes in shareholder composition is thus significantly more negative during the SC reform.

5.1.3 Summary of results and interpretation

The short-term reaction to the announcement of the EML over both reforms are negative. This holds true for firms open to foreign investors over both reforms. Comparing firms open to foreign investors with firms restricted for foreign investors, the short-term shareholder reaction for the former is found to be more negative. This holds true for the SC reform in 2014, with no significant difference being found over the QFII reform. Putting the two reforms relative to each other, the short-term shareholder reaction is found to be more negative for the SC reform compared to the QFII reform. When distinguishing the firms open to foreign investors from the firms restricted and compare the difference in short-term shareholder reaction of the two sub-groups over the two reforms, the difference is found to be more negative in the SC reform. This indicates that firm-specific changes in SC impacts the short-term shareholder reactions more negatively than the equivalents in QFII. A summary of the results and the coefficients are presented in Table 10.

Table 10. Summary of results

This table summarises the results of all four hypotheses of this study.

	Results within reforms				Results across reforms	
	Hypothesis 1		Hypothesis 2		Hypothesis 3	Hypothesis 4
	QFII	SC	QFII	SC		
Number of observations	718	1,455	1,099	1,896	1,080	1,080
Value	-0.55%	-0.88%	-0.30%	-0.84%	0.51%	1.07%
P-value	0.00%	0.00%	10.18%	0.02%	1.13%	0.60%

5.2 Robustness tests

As outlined in previous sections, the tests of the study are prone to different potential sensitivities. These sensitivities concern the use of sub-samples during various occasions (Section 3.3), heterogeneity (Section 4) and outliers (Section 4). In order to test the potential impact of these sensitivities on the results, robustness tests designed to highlight these sensitivities are performed. Table 11 summarises these sensitivities, the rationale of the robustness tests, the methods used for the robustness test and the results. A test is deemed robust if the coefficient is not changed considerably and the result does not change in significance, i.e. a result that is significant in the main test remains significant.

Table 11. Robustness tests

This table summarises the conducted robustness tests by type of sensitivity, rationale of sensitivity, method of the robustness test, and the results of the robustness tests for each hypothesis. Some sensitivities are tested by more than one approach and therefore presents more than one result.

Sensitivity	Rationale	Method	H1		H2		H3	H4
			QFII	SC	QFII	SC		
Use of sub-samples	The removal of observations could impact the results of the tests. Including them tests this bias.	Adjustments to threshold on observation losses and re-runs of tests (no threshold/threshold two days)	Robust	Robust	Not robust	Robust	Not robust	Robust
			Robust	Robust	Robust	Robust	Robust	Robust
		Include all firms, from both open and restricted sectors, and re-runs of tests on full dataset	Robust	Robust	-	-	Robust	-
		Include all observations from QFII and SC, and re-runs of tests on unbalanced dataset	-	-	-	-	Robust	Robust
Heterogeneity	Certain stock characteristics could impact the results	Restrictions on certain stock characteristics and re-runs of tests (market capitalisation/average stock turnover)	Not robust	Robust	Not robust	Not robust	Not robust	-
			Robust	Robust	Robust	Robust	Robust	Robust
		Inclusion of control variables and re-runs of tests (market capitalisation/average stock turnover)	Robust	Robust	Robust	Robust	Robust	Robust
			Robust	Robust	Robust	Robust	Robust	Robust
Outliers	Extreme observations could impact the results	Non-parametric tests	Robust	Robust	Robust	Robust	Robust	Robust
		Exclusion of end-tails and re-runs of tests	Robust	Robust	Robust	Robust	Robust	Robust

5.2.1 Use of sub-sample

In different steps and during different occasions, the sample is divided into sub-samples in order to increase the causality between the aim of the test and test method. As the benefits are clear, the use of sub-samples could potentially bias the results. In order to test the potential bias of the sampling and make sure the systematic choices made by the authors are not misleading the results, robustness tests for this are performed. The use of sub-samples can be divided into three parts: i) the removal of observations based on data quality (Section 3.2.1), ii) the test of only firms open to foreign investors in Hypothesis 1 and 3 (Section 3.3), and iii) the use of a balanced data set (Section 3.3). These three parts are briefly discussed below.

Removal of observations due to data quality. As discussed in Section 3.2.1, a threshold of five days for observation losses during the estimation window is set for the prediction of expected returns. This is done in order to maintain a large sample, while at the same not lose in data quality. To test the robustness of the results, the threshold is thus adjusted. This is performed in two sets. First, the restriction is loosened, and all observations are included. The results are robust for all test except for Hypothesis 3. The alteration is however of no great surprise, as it is not unlikely that observations with great data inaccuracies would impact the result. Second, the threshold is tightened so that only two days of observation losses are accepted. The results are robust for all tests, which is in line with an improved data quality.

Sub-sample in Hypothesis 1 and 3. The tests for Hypothesis 1 and 3 are conducted including only firms open to foreign investors. That is to examine the actual effect of firms also taking in foreign investors and not just being impacted by a market-wide decrease in risk-free rate and lower equity premium due to higher market liquidity. As this is the aim of the test, the use of a sub-sample could induce selection bias. To test this bias, and the robustness of the results, the entire sample is tested for both hypotheses. The results are robust for all tests.

Balanced dataset. As described in Section 3.3, a balanced dataset is used for Hypothesis 3 and 4 in order to improve data quality. Consequently, only observations for firms present during both reforms and that did not change category based on the Catalogue are included. This means that many observations are removed, and the results could possibly be biased by the selection of only surviving firms. To test this bias and the robustness of the results, the same tests for Hypothesis 3 and 4 are thus conducted, but with the entire dataset. Results show that the results from the main tests are robust.

5.2.2 Heterogeneity

The question of heterogeneity is raised in Section 4. Outlining the difference in firm characteristics between the different sub-samples, there is a risk of these differences biasing the results. The factors outlined is the difference in market capitalisation between firms open to foreign investors and those restricted, and the difference in average stock turnover between the two reforms. To test the impact of these factors, control tests as well as heterogeneity tests are performed for both factors separately. To secure the robustness of the entire study, all tests are tested for heterogeneity. The impact of the two factors are discussed below.

Market capitalisation. Section 4 outlines a difference in market capitalisation between firms open to foreign investors and firms restricted. In order to examine whether this impacts the results, OLS regressions controlling for market capitalisation are conducted for all tests. These tests are disclosed in Appendix E. All tests are robust.

Furthermore, there is also an economic rationale for market capitalisation potentially driving the results. Market capitalisation is often a common criterion for institutional investors' choice of firms, as their investment mandate is restricted to a minimum limit of firm market capitalisation. Moreover, larger firms are often more traded and appear more frequently in media reporting. Larger firms could thus potentially drive the results. To test this, only firms included in the top 25th percentile when it comes to market capitalisation are included in all tests. Examining only these firms, none of the results are significant, confirming that the results are not driven by large corporations. See Appendix E for the results.

Average stock turnover. As outlined in Section 4, there is a large difference in average stock turnover between the two reforms. Since a greater equity market liquidity is found to have a negative impact on market equity premium (Frankel, 1994; Levine and Zervos, 1998) there is concern of this biasing the results. To test this bias, OLS regressions using the average stock turnover as a control variable are thus conducted. Results are disclosed in Appendix E. All tests are robust.

Similar to market capitalisation, there is also an economic rationale of firms with low average stock turnover driving the results. A turnover too low creates a sensitivity in two ways: either an expected value effect is not reflected in the stock price development solely because too low trading of the stock, or the value effect is exaggerated due to the low liquidity. To test this, firms in the bottom 25th percentile when it comes to average stock turnover over the event windows are excluded, removing their potential impact on the results. Looking at the rest of the firms, the results are still significant indicating that the results are robust. Results are disclosed in Appendix E.

5.2.3 Outliers

In Section 4, both reforms are found to contain outliers in both directions. Even though outliers in terms of abnormal stock returns are to be expected due to potential speculation, their existence could bias the results when using parametrical methods. The impact of outliers has already been considered as all test are performed both parametrically *and* non-parametrically. However, to completely administer the impact of outliers, the same tests are performed with a sample free from outliers as well. The robustness tests are thus performed with a sample where the 5th and 95th percentiles are excluded. The results are still significant for all test, indicating the results of the main tests being robust. See Appendix E for the results of the robustness tests.

5.2.4 Interpretation of robustness test

This section has outlined the potential sensitivities in the data and test design, and the robustness of the results have been tested. The majority of these tests have confirmed the results of the main study, with the only exception being the loosening of the data threshold for Hypothesis 3. As explained in relation to that test, the test is more to be seen as a consequence of the inclusion of observations with weaker data quality rather than the results not being robust. In total, the results of all tests presented in Section 5.1 are robust.

6 Discussion

The purpose of this section is to analyse the empirical results with focus on answering the research question as stated in Section 2.4. In order to do this, the analysis is divided into two main subsections. First the results are discussed in the light of previous research, and the contributions of the study are outlined. Second, the results found are problematised, focusing on the reliability, validity and scalability of the study and the results.

6.1 Empirical analysis

Given the results found in the main study as well as the results of the robustness tests, it is of interest to put these in comparison to those of previous literature. The benefit of this comparison is twofold. It both sheds light on the contributions of the thesis to existent academic research, while at the same time serving as a robustness discussion of the documented empirical findings. The empirical discussion is thus centred on three topics. First, the different reasons behind the negative CAR of both reforms, and how the contextual factors of China relate to this are discussed. The different reforms are then compared, and the difference in CAR is analysed focusing on the role different types of investors play in the shareholder value changes as well as the potential differences in cost of capital between the two reforms. Last, the conclusions of the two first parts are combined and discussed in order to establish the impact of contextual factors in the setting of an EML.

6.1.1 Governmental ties

Over a seven-day period surrounding the announcement of an EML in China, the cumulative abnormal return is found to be negative. This holds true both for the reform QFII in 2002 where the average CAR is -0.55% and the reform SC in 2014 where the average CAR is -0.88%. These findings are opposite to the empirical findings of previous research of which all find positive effects from EMLs in other parts of the world.

In order to distinguish the driving factors of this negative reaction, the analysis will commence with an examination of the cost of capital. As outlined in Section 2, an EML is both theoretically as well as empirically proved to lower the cost of capital on a global scene. Examining the cost of capital related to the two EMLs in China there is no reason to believe it not to behave as in previous studies. The risk-free rate of the country was lower than the global risk-free rate prior to both studies (Eikon, 2019), which following the international linkage of real interest rates (Cumby & Mishkin, 1986) should decrease the domestic risk-free rate. Second, no evidence can be found on why the equity premium on a market level not should decline following the increased liquidity and increased risk-sharing in the country, as theoretically shown by Levine and Zervos (1998), respectively Stulz (1981). Taking no other factors into consideration, this should thus yield a positive shareholder reaction as per previous studies. However, as the average CAR is negative for both reforms, there is reason to believe other contextual factors impacting the share value in relation to the EML.

Examining how other studies in adjacent areas have performed in the context of China, similar contrasting results are found. In the study of Calomaris et al. (2010) which examined the shareholder reaction to the privatisation of Chinese firms, a similar result is found. With the Western literature associating the announcement of privatisation with a stock price appreciation,

the reaction for Chinese firm is found to be negative. Since privatisation in a general sense could be seen as another type of liberalisation, this study presents results in line with those of Calomaris et al. (2010).

Calomaris et al. (2010) attribute the results to the peculiar trajectory of the Chinese political and economic development, with the authoritarian political control still to this day having remained widespread. They also argue for the governmental actors not being shy about interfering in commerce and their open favouritism of state-owned firms over private firms being among the reasons. This is also in line with the findings of Boubakri et al. (2012) who find investors to require a lower cost of capital for firms with clear political connections compared to other firms.

The second hypothesis of the study was conducted to test this theory. By distinguishing the firms open to foreign investors from the ones restricted, the impact of the market-related cost of capital decrease is minimised. The difference between firms open to foreign investors and those that are restricted is thus centred on mainly two factors: the difference between the firm-specific cost of capital changes relative to the market equivalent and the changes in shareholder composition. With only these two factors as differentiators, the difference is insignificant over QFII and 0.84 percentage points lower for firms open to foreign investors over SC. The relative impact of the two outlined factors are discussed below.

Based on the theories of Chari and Henry (2004), the relative size of the firm-specific cost of capital change is not definite as it can both be smaller and larger than the market-specific cost of capital change. Over a large sample, it is thus fair to assume the overall difference, if not being non-existing, at least being moderately small. Given that assumption, the majority of the difference is likely to be explained by the changes in shareholder composition. This study thus find the impact of shareholder composition changes during the EML of SC to have a negative impact.

The reasons behind this is believed to be twofold. First, as found in the study of Feng et al. (2014) having investors with political connections in the firm is evidenced to have a positive impact on firm operations. The inclusion of foreign investors in the firm could thus possibly dilute these benefits, as the politically beneficial shareholders on a large scale is replaced by foreign investors. Second, as illustrated in the study of Calomaris et al. (2010), governmental actors have historically been found to favour state-owned firms. As foreign investors *per se* not necessarily has the same goals as the Chinese government, the inclusion of these could let investors expect the future benefits coming from the government to decrease relative to other firms.

6.1.2 The different types of reform

When assessing the difference in CAR for both reforms, SC is found to have a CAR 0.51 percentage points lower than QFII. Mainly three different explanations for this are found. First, there might be differences due to the changes in shareholder composition. Second, there might be differences from the change in cost of capital. Third, the differences might be due to other factors corresponding to either the difference in time between the two reforms as well as potential information asymmetries. The last two of these explanations are believed to impact the entire market, whereas the first explanation is believed to only impact firms open to foreign investors

accompanied by the difference between the firm-specific and market-specific equity premium changes.

Consequently, Hypothesis 4 is designed to outline the relative impact of these three explanations. By distinguishing the firms open to foreign investors from the ones restricted, the factors impacting the entire market are separated from the factors only impacting firms open to foreign investors. The factors left are thus: the difference between the changes in firm-specific equity premium and the market-specific equivalent and the changes in shareholder composition. Founding the argument in the same reasoning as in the above section, the aggregated differences between firm-specific equity premium changes and the market-specific equivalent is likely to be close to zero. The majority of the effects found in Hypothesis 4 is consequently believed to come from the changes in shareholder composition. The result from the hypothesis thus states that the difference in shareholder composition changes between the two reforms yields a difference in CAR of 1.07 percentage points on average, with SC being impacted more negatively.

The changes in shareholder composition is twofold. As domestic investors are leaving the firms, foreign investors are entering. Under the assumption of political connections being equally important over both reforms, the potential dilution is believed to impact, if not equally, similarly negative over both reforms. The major difference between the two reforms thus boils down to the difference in investor type, with institutional investors being targeted in QFII and private investors being targeted in SC. The results of Hypothesis 4 consequently show the impact coming from institutional investors to be significantly stronger, relative to private investors.

Comparing these findings to the previous literature on different types of investors and their impact on shareholder value, this does not come as a great surprise. As illustrated in the research of Gillan and Starks (2003), Borokhovich et al. (2006), and Elyasiani and Jia (2010), institutional investors in general are associated with a stronger equity price appreciation compared to the private counterpart in general, with institutional investors that possess the characteristics of being active, large, stable, foreign, and enjoys no strong ties to firm management, having a particularly strong impact.

Assessing these characteristics, the institutional investors are undoubtedly foreign and as the Chinese investor protection is found to be weak with global standards (Lin and Fu, 2017), the impact is believed to be positive. Furthermore, as the institutions at inception had to be certified by the Chinese government, they are also most likely large. Regarding whether they take an active position or hold the position for a long time no conclusions can be made. However, the investors are believed not to have strong ties to firm management as a group. Consequently, the institutional investors being targeted in QFII is believed to be predominantly investors possessing theoretically positive traits. The majority of the difference as found in Hypothesis 4 is therefore believed to come from the impacts of the two different investor types. This study thus outlines that there is difference in shareholder impact in an EML depending on what kind of investor type the reform targets.

The difference in investor type could also pose as an explanation as to why a significant result is found for Hypothesis 2 for SC and not for QFII. The rationale is that as both reforms experienced

a negative impact from the dilution of political connection, only QFII experienced a contrasting positive effect from the inclusion of foreign institutional investors. These two effects could thus potentially have offset each other resulting in an insignificant result.

Furthermore, with the changes in shareholder composition impacting the SC reform more negatively than the QFII reform with around 1 percentage point, there is around half a percentage point left unexplained as to the difference between the two reforms. The difference remaining is also positive, indicating that the impact on short-term shareholder value coming from the difference in changes in cost of capital between the reforms, and other factors regarding the difference in reform are impacting the SC reform more positively than the QFII reform. Even though the relative impact of them cannot be estimated, mainly two aspects explaining this difference are found. First, the equity market has improved a lot when it comes to size, global importance, technical solutions and information-sharing as well as liquidity in the time between the two reforms. The market would thus be more prepared for an EML and could react in a more vigorous manner. Second, there is an indisputable information asymmetry between the two reforms, as the second reform has information about the first reform in a manner impossible for the first reform. Given a positive actual effect from the first reform, the expectations of the perceived value of the second reform could be increased. However, to ensure this, further tests outside the scope of this study need to be performed.

6.1.3 Equity market liberalisation and contextual factors

The two sections above disentangle mainly two factors to play important roles in explaining the short-term shareholder reactions associated with the two EML reforms in China. The first section outlines the importance of taking governmental ties into account and how the dilution of these can offset the positive impact of a lower cost of capital. The second section outlines how different investors can play different roles in how the effect of the EML plays out, with institutional investors having a more positive impact compared to private investors. These two findings outline an even more important and conclusive finding to the literature of EML. To better comprehend this, the differences in scope and method between this study and previous studies first need to be explained.

First of all, all major studies within the field have been conducted at a meta-level. As this research design helps the generalisation of the results, the findings are prone to minimising the impact of contextual factors when examining the results. Second, the same studies have examined EMLs spanning over several decades. This results in several positives when it comes to minimising the impact of endogeneity and potential sample inaccuracies. However, the actual impact of all important aspects are hard to distinguish. By narrowing the scope only to China and further only to two separate reforms, this study shows that there are large differences to be found when examining the impact of EML closer. EMLs should therefore not necessarily be generalised without taking contextual factors into consideration.

6.2 Problematisation of the study

The purpose of this section is to problematise the study and discuss potential issues regarding the scope and research design of the study. First, the *replicability* of the study is discussed, i.e. whether the execution and judgements of the study are independent of the authors. Second, the *validity* is evaluated. This sub-section is divided into two parts, in which the first discusses the methods'

abilities to capture what the study aims to measure, while the second concerns the tests' abilities to in an unbiased manner measure the causality between the variable and events tested. Finally, the possibility to generalise the results is questioned – even if the results were to be true, to what extent can they be applied to other contexts?

6.2.1 Reliability

The question of reliability concerns whether the study is designed in a way that the same results would be found in repeated trials. The reliability of this study is considered high as the data used is publicly available, the research design is thoroughly described, and the selection of data contains few judgements. The judgements that are made are also all rule-based and checked for robustness in several tests, thus accentuating the reliability of the study.

6.2.2 Validity

The question of validity concerns whether the research design used is capturing what the study attempts to measure. To assess this, the validity of the study is tested at two levels. First, the method as such is analysed, i.e. whether the tests used have the capability to measure the abnormal return of firms surrounding the announcement of an EML. Second, the validity of the causality between the tested variable and the event is examined, i.e. whether the cumulative abnormal returns are reliably connected to the announcement of the EML.

6.2.2.1 Methods used

For the methods used, the validity of the research design in general is considered high, with regards to both the event study method, the estimation of expected return and the statistical tests. The methods used are all checked for robustness, with no large deviations from the main results. Also, when adjusting for minor inefficiencies in data, the models stand robust. However, there are three aspects that could be of concern, which are addressed more specifically below.

Matching of the Catalogue. In order to distinguish the effects incited from the change in shareholder composition from the overall effects, the Catalogue combined with the GICS sub-industries is used. As neither of them are based on each other there could be potential misses in the matching. Also, the matching is based on a sub-industry level and is thus grouping firms together which are all assumed to be impacted in the same way. This does of course not necessarily hold true for all firms, and in an ideal world the matching would have been done at a firm-level. However, in order to both have a scalable result and also be able to look at a sample large enough, some kind of categorisation is needed. Yet, one should bear in mind when looking at the results that the categorisation is optimised for all firms in general, and not a specific firm in particular, which could impact the results. A concern regarding the accuracy of the matching between the two sources is also worth to address. As there are manual factors involved, potential errors in the matching are not impossible. However, as the matching has been performed with China business experts, the matching as a whole is not believed to be inadequate.

Furthermore, even to this day there are not much media reporting surrounding the existence of the Catalogue, and potentially even less in 2002. The impact of the list as an obstacle of investing could thus be questionable. However, as the list is designed as a regulatory restriction it is believed that

even if the knowledge is not strong about its existence, its factual purpose of restricting foreign investors to invest in certain industries is expected to be fulfilled.

Accuracy of the event window. As with all market liberalisation reforms, the liberalisation is seldom a one-off event. Even though these two market reforms are outlined as the ones with the highest equity market impact, one cannot with full certainty claim that there have not been any other events of which could have had an impact on the equity market, and thus potentially influencing the results found in the study.

Also, as the reforms are divided by more than ten years, ten years of which both the world in general and the equity market in particular has developed immensely, the time difference could have an impact. On the same note, there are some differences in characteristics between the crowds of the two reforms that are worth mentioning. In the first reform, there were no foreign investors to react to the news as these had not been included yet. However, in the second reform the foreign investors as targeted in QFII and forward were there to react to the announcement together with the domestic equity market, possibly biasing the results.

As to whether the results reliably can be connected to the announcement, the validity is deemed high. The assumptions outlined in Section 3.2.2 are all considered to be fulfilled with reasonably high certainty. Both events are clearly defined and both believed to be isolated from confounding events and the long event window is able to capture both potential information leakages and other market inefficiencies.

6.2.2.2 Causality of the results

The second part of the examination of validity regards whether it can be argued to exist an unbiased causality between the event and the tested variable. This mainly concerns the structures of the tests and the behaviour of the data used. Given the research design, with single events that affect all firms simultaneously and the possibility to use the Catalogue to create control groups, the causality of the results is believed to be strong. Furthermore, the robustness tests regarding heterogeneity and outliers support the validity of the study. There are however two aspects that need to be explored further, which the rest of this section does.

Operationalisation of the cumulative abnormal return. In this study the estimation of cumulative abnormal returns are used to calculate firm equity performance. As the method carries a lot of positive features, it also possesses several limitations. These are limitations of which the reader should bear in mind when analysing the results. First, as discussed in the Section 2, previous studies (Lyon, et al., 1999; Kothari & Warner, 1997; Jegadeesh & Narasimhan, 2009) suggest that the use of asset pricing models in the assessment of the equity market returns introduces bias to the sample and could negatively impact the statistic features of the test. Such biases include rebalancing bias, new listing bias and measurement bias. These should be kept in mind when interpreting the results. Second, the estimation of CAR is highly reliant on the choice of market index. A change in market index could potentially change the abnormal returns significantly and bias the results. However, the Shanghai and Shenzhen indices are considered as the most accurate for this estimation.

Last, the method relies on the assumption of an efficient market. As this holds as a common assumption for equity price analyses, it does not necessarily need to hold in all contexts. Given the time difference between the two reforms there could also be a potential difference in efficiency between the two reforms, possibly biasing the results. To minimise the impact of efficiency differences and potential inefficiencies when it comes to the responsiveness of the market, the event window was chosen to be over seven days instead of just over the announcement.

Endogeneity. The issue of endogeneity concerns the situation when the tested variable, which in this study is CAR, is correlated with the error term. This could be a problem if the liberalisation reforms are believed to be timed by policymakers who aim to liberalise their equity markets when long-term performance is good. If this were to be the case, the endogeneity would bias the estimates of the mean liberalisation effects. This issue is raised by previous EML studies (Henry, 2000; Chari & Henry, 2004). Henry (2000) mitigates this problem to some extent by using control variables for macroeconomic fundamentals such as macroeconomic stabilisation, trade opening, privatisation and exchange. This is possible as his study examines several countries with reforms spanning over a long period of time. He does however still acknowledge that his results may still be biased since it would be difficult to completely control for this endogeneity. As this study only focuses on one country and uses firm-level data, such controls are not possible. The endogeneity factor must therefore be considered when analysing the results of this study as well.

6.2.3 Possibility to generalise results

The question regarding the possibility to generalise the results concerns whether the results can be extended and assumed to hold also for data not included in the study. The question thus lies in whether the sample used can be considered representative also for the greater population of data. As already discussed, this study shows the problems associated with trying to generalise the results of large studies to contexts without regarding the contextual factors important for that market. One should thus be cautious when assessing the generalisability of the study. Even for markets that also possess strong influences from government, one should be careful when comparing the results of this study as all markets have their own characteristics that could influence the results. The results should thus be seen more as what *can* happen, rather than what *will* happen, if this was to be tested in similar institutional settings.

Yet, in the context of China the generalisability of the study is deemed higher. Even though there are contextual differences in time, this study shows the impact of EML to be similar for both reforms. That is regardless of the reforms taken place with over ten years in between them. Due to the large sample of data, the results thus suggest that similar results could happen if something similar would happen in China in the nearest future. An example of this could be a further loosening of the negative list.

7 Concluding remarks

The purpose of this thesis has been to contribute with empirical evidence on the short-term equity market effects related to the opening of the domestic equity market in China to foreign investors, i.e. an equity market liberalisation. In addition to comparing the previous global findings with the specific effects found in the EML of China, the thesis also examines how the effect of EMLs varies depending on specific contextual factors. The factors outlined are the effects related to the dilution of investors with political connections and the relative effects coming from institutional and private investors. The research question was thus stated as:

What are the short-term shareholder value effects of equity market liberalisation in a setting with strong governmental ties, and are the effects different depending on the type of investors?

To test this, two event studies over the two separate reforms *Qualified Foreign Institutional Investor* targeting institutional investors in 2002 and *Stock Connect* targeting private investors in 2014 were conducted. Using the *Catalogue of Industries for Guiding Foreign Investment*, of which outlines industries restricted from taking in foreign capital, a distinction between firms open to foreign capital and those restricted was made. The short-term shareholder reactions around the announcement of the two reforms was then measured, outlining the overall effects as well as the impact coming from the decrease in investors with governmental ties and the relative impact of the institutional and private investors.

Following the tests of the study, the short-term shareholder reactions are found to be negative following the announcements of equity market liberalisation in China. This is true for both reforms with the QFII reform having a negative abnormal reaction of 0.55% over a seven-day period surrounding the announcement and SC having a negative abnormal return of 0.88% over the same setting. These results are opposite to the results of previous research in the area of equity market liberalisation, of which have been carried out over a large set of emerging markets.

When distinguishing the contextual factors impacting the negative result, two main findings are discovered. First, political connections are found to play a vital role in explaining the impact of equity market liberalisations in China. Only examining the firm-specific effects related to firms open to foreign capital, these effects are found to be more negative relative to the overall market effects. This is significantly true over the SC reform, however no such conclusions can be drawn for the QFII reform. The negative result for SC is believed to be mainly driven by the loss in political benefits related to attracting foreign investors. The findings are thus in line with previous literature outlining the importance of political connections in the setting of China.

Second, institutional investors are found to impact the short-term stock price significantly more positive over the announcement of an equity market liberalisation. Institutional investors are found to impact the stock prices with around 1 percentage point more compared to the private counterpart over the window surrounding the announcement. This is in line with previous research showing that institutional investors are associated with a higher shareholder value creation compared to private investors, with institutional investors that are large, foreign and hold no ties with firm management showing particularly positive impacts. These traits were identified among the institutional investors included in the thesis.

Conjoining these two findings, this study contributes with empirical evidence on the importance of taking contextual factors into account when examining the short-term shareholder reactions to the announcement of equity market liberalisations. The study thus outlines the draw-backs associated with applying generalised results on countries without considering the contextual setting associated with the specific liberalising country.

When examining the results, one should nevertheless not forget that the results are merely short-term *expectations* of what the equity market expects the future impact of the EML will be, and not the actual outcome of the reforms. To further examine the outcome of EML in this context, future studies could also analyse the realised impact of the reform on firms. Research areas of interest could be, but are not limited to, the operational performance and the long-term equity reactions of firms. It could also be of interest to broaden the geographical scope of the study, in order to examine the relative impact of other important contextual factors in other liberalising markets. One area to start with could be markets with similarly strong governmental histories, not too uncommon for markets that have chosen to liberalise their equity market during the latest decades.

Furthermore, future scholars can take inspiration from the method of this study. By distinguishing the firms open to foreign capital from firms restricted, future scholars can more thoroughly examine the effects related to important contextual factors. This can be applied to all markets that has or are planning to liberalise their equity markets. Also, the use of the Catalogue as a separator can be used in other adjacent research areas in China, aiding in the distinction of the actual impact of different contextual factors.

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A Acronyms

Table A1. Acronyms

Acronyms	Definition
AR	Abnormal Return
CAR	Cumulative Abnormal Return
Catalogue	Catalogue Of Industries for Guiding Foreign Investment
EML	Equity Market Liberalisation
FDI	Foreign Direct Investment
IAPM	International Asset Pricing Model
QFII	Qualified Foreign Institutional Investor
SC	Stock Connect
SSE	Shanghai Stock Exchange
SZSE	Shenzhen Stock Exchange
TFP	Total Factor Productivity

B Categorisation of industries by the Catalogue

Table B1. Categorisation of sectors

This table presents the sub-industries, whether they are open or restricted, and references to the Catalogue. The Catalogue is divided into three part: prohibited (P), restricted (R) and encouraged (E). Note that industries on the encouraged list can still be restricted as they are required to have Chinese ownership to some extent.

Industry	Sub-industry	Number of firms	QFII		Number of firms	SC	
			Status	Reference		Status	Reference
Aerospace & Defence	Aerospace & Defence	9	Restricted	E. III. 18.	17	Restricted	P. III. 4.
Air Freight & Logistics	Air Freight & Logistics	6	Restricted	E. III. 18.	14	Restricted	R. V.
Airlines	Airlines	3	Restricted	E. VI. 6.	4	Restricted	E. III. 21.
	Auto Parts &						
Auto Components	Equipment	20	Open	-	48	Open	-
Auto Components	Tires & Rubber	4	Restricted	R. III. 9.	4	Open	-
	Automobile						
Automobiles	Manufacturers	13	Restricted	E. III. 18.	17	Restricted	E. III. 19.
	Motorcycle						
Automobiles	Manufacturers	4	Restricted	E. III. 18.	5	Restricted	E. III. 19.
Banks	Diversified Banks	4	Restricted	R. VII. 1.	14	Restricted	R. VII. 1.
Banks	Regional Banks	0	Restricted	R. VII. 1.	2	Restricted	R. VII. 1.
Beverages	Brewers	5	Open	-	7	Open	-
Beverages	Distillers & Vintners	18	Restricted	R. III. 1.	22	Open	-
Beverages	Soft Drinks	1	Restricted	R. III. 1.	1	Restricted	R. III. 2.
Biotechnology	Biotechnology	7	Open	-	17	Open	-
Building Products	Building Products	8	Open	-	19	Open	-
	Investment Banking &						
Capital Markets	Brokerage	12	Restricted	R. VII. 1.	19	Restricted	R. VII. 1.
	Financial Exchanges &						
Capital Markets	Data	0	Restricted	R. VII. 1.	3	Restricted	R. VII. 1.
	Asset Management &						
Capital Markets	Custody Banks	3	Restricted	R. VII. 1.	1	Restricted	R. VII. 1.
Chemicals	Commodity Chemicals	47	Open	-	93	Open	-
	Fertilizers &						
Chemicals	Agricultural Chemicals	21	Open	E. III. 18.	36	Open	P. III. 4.
Chemicals	Specialty Chemicals	9	Restricted	E. III. 8.	44	Restricted	R. III. 6.
Chemicals	Diversified Chemicals	2	Open	-	4	Open	-
Chemicals	Industrial Gases	0	Open	-	1	Open	-

Industry	Sub-industry	Number of firms	QFII		Number of firms	SC	
			Status	Reference		Status	Reference
Commercial Services & Supplies	Commercial Printing	2	Restricted	R. III. 4.	5	Restricted	R. III. 4.
Commercial Services & Supplies	Diversified Support Services	0	Open	-	2	Open	-
Commercial Services & Supplies	Environmental & Facilities Services	9	Open	-	11	Open	-
Commercial Services & Supplies	Office Services & Supplies	0	Open	-	3	Open	-
Communications Equipment	Communications Equipment	19	Open	-	44	Open	-
Construction & Engineering	Construction & Engineering	16	Open	-	55	Open	-
Construction Materials	Construction Materials	17	Open	E. III. 18.	29	Open	R. V.
Consumer Finance	Consumer Finance	3	Restricted	R. VII. 1.	2	Restricted	R. VII. 1.
Containers & Packaging	Metal & Glass Containers	2	Open	-	6	Open	-
Containers & Packaging	Paper Packaging	1	Open	-	8	Open	-
Distributors	Distributors	13	Open	-	12	Open	-
Diversified Consumer Services	Specialized Consumer Services	0	Open	-	0	Open	-
Diversified Consumer Services	Education Services	2	Restricted	E. XI. 1.	1	Restricted	E. X. 1.
Diversified Financial Services	Specialized Finance	1	Restricted	R. VII. 1.	1	Restricted	R. VII. 1.
Diversified Financial Services	Other Diversified Financial Services	2	Restricted	R. VII. 1.	2	Restricted	R. VII. 1.
Diversified Telecommunication Services	Integrated Telecommunication Services	0	Restricted	R. III. 13.	1	Restricted	R. V. 7.
Diversified Telecommunication Services	Alternative Carriers	1	Restricted	E. VI. 6.	1	Restricted	E. III. 21.
Electric Utilities	Electric Utilities	6	Restricted	R. IV. 1.	8	Restricted	E. IV.
Electrical Equipment	Heavy Electrical Equipment	5	Open	-	30	Open	-
Electrical Equipment	Electrical Components & Equipment	20	Open	-	83	Open	-
Electronic Equipment, Instruments & Components	Electronic Components	17	Open	-	44	Open	-
Electronic Equipment, Instruments & Components	Electronic Equipment & Instruments	6	Open	-	35	Open	-
Electronic Equipment, Instruments & Components	Electronic Manufacturing Services	1	Open	-	1	Open	-
Energy Equipment & Services	Oil & Gas Equipment & Services	4	Open	-	13	Open	-
Energy Equipment & Services	Oil & Gas Drilling	0	Open	-	1	Open	-
Entertainment	Interactive Home Entertainment	3	Restricted	-	4	Restricted	-
Entertainment	Movies & Entertainment	7	Restricted	R. VI. 3.	6	Restricted	R. VI. 4.
Food & Staples Retailing	Food Distributors	1	Open	-	1	Open	-
Food & Staples Retailing	Food Retail	2	Open	-	5	Open	-
Food & Staples Retailing	Drug Retail	1	Restricted	R. VI. 1.	1	Restricted	R. VI. 2.
Food & Staples Retailing	Hypermarkets & Super Centers	1	Open	-	4	Open	-
Food Products	Packaged Foods & Meats	26	Open	-	55	Open	-

Industry	Sub-industry	Number of firms	QFII		Number of firms	SC	
			Status	Reference		Status	Reference
Food Products	Agricultural Products	12	Open	-	20	Open	-
Gas Utilities	Gas Utilities	2	Restricted	E. II.	3	Restricted	E. IV.
Health Care	Health Care						
Equipment & Supplies	Equipment	1	Open	-	6	Open	-
Health Care							
Equipment & Supplies	Health Care Supplies	0	Open	R. III. 9.	2	Open	-
Health Care Providers & Services	Health Care						
	Distributors	11	Restricted	R. X. 1.	15	Open	-
Health Care Providers & Services							
	Health Care Services	2	Restricted	R. X. 1.	2	Open	-
Health Care Providers & Services							
	Health Care Facilities	1	Restricted	R. X. 1.	3	Open	-
Health Care	Health Care						
Technology	Technology	0	Open	-	1	Open	-
Hotels, Restaurants & Leisure	Hotels, Resorts & Cruise Lines	15	Restricted	R. VIII. 2.	17	Restricted	E. III. 19.
Hotels, Restaurants & Leisure							
	Leisure Facilities	2	Open	-	5	Open	-
Hotels, Restaurants & Leisure							
	Restaurants	1	Open	-	2	Open	-
Household Durables	Consumer Electronics	5	Open	-	10	Open	-
Household Durables	Household Appliances	8	Open	-	23	Open	-
	Housewares & Specialties	0	Open	E. III. 18.	3	Open	E. III. 19.
Household Durables	Home Furnishings	1	Open	-	3	Open	-
Household Products	Household Products	3	Open	-	3	Open	-
Independent Power and Renewable Electricity Producers	Independent Power Producers & Energy Traders	7	Restricted	E. IV. 6.	11	Restricted	E. IV.
Independent Power and Renewable Electricity Producers							
	Renewable Electricity	8	Open	-	8	Open	-
Industrial Conglomerates	Industrial						
	Conglomerates	7	Open	-	6	Open	-
	Life & Health						
Insurance	Insurance	1	Restricted	R. VII. 2.	3	Restricted	R. VII. 2.
	Property & Casualty						
Insurance	Insurance	0	Restricted	R. VII. 2.	0	Restricted	R. VII. 2.
Insurance	Multi-line Insurance	1	Restricted	R. VII. 2.	2	Restricted	R. VII. 2.
Interactive Media & Services	Interactive Media & Services	0	Restricted	P. VIII.	1	Restricted	R. VI. 4.
Internet & Direct Marketing Retail	Internet & Direct						
	Marketing Retail	1	Open	E. III. 18.	4	Restricted	E. III. 19.
	Internet Services & Infrastructure	3	Restricted	R. III. 13.	5	Restricted	R. V. 7.
IT Services	IT Consulting & Other						
	Services	8	Open	-	24	Open	-
IT Services							
	Data Processing & Outsourced Services	0	Open	-	0	Open	-
Life Sciences Tools & Services	Life Sciences Tools & Services	0	Restricted	R. X. 1.	1	Open	-
Machinery	Industrial Machinery	31	Open	-	116	Open	-
	Construction						
	Machinery & Heavy Trucks	28	Open	-	40	Open	-
	Agricultural & Farm						
Machinery	Machinery	0	Open	-	2	Open	-
Marine	Marine	4	Open	-	8	Open	-
Media	Advertising	3	Restricted	R. VII. 1.	3	Open	R. VII. 1.
Media	Publishing	9	Restricted	P. VIII. 6.	12	Restricted	R. XII. 1.
Media	Cable & Satellite	5	Restricted	R. III. 13.	4	Restricted	R. XIII. 13.
Media	Broadcasting	1	Restricted	P. VIII. 5.	1	Restricted	P. X. 4.
Metals & Mining	Gold	2	Restricted	R. II. 2.	6	Restricted	R. II. 3.
Metals & Mining	Steel	30	Open	-	50	Open	-

Industry	Sub-industry	Number of firms	QFII		Number of firms	SC	
			Status	Reference		Status	Reference
	Diversified Metals & Mining						
Metals & Mining	Mining	23	Restricted	R. II.	32	Restricted	R. II.
Metals & Mining	Copper	4	Restricted	E. II. 9.	5	Restricted	R. III. 9.
Metals & Mining	Aluminium	4	Restricted	E. II. 10.	18	Restricted	R. III. 9.
	Precious Metals & Minerals						
Metals & Mining	Minerals	1	Restricted	R. II. 3.	3	Restricted	R. II. 4.
Multiline Retail	Department Stores	26	Open	-	25	Open	-
	General Merchandise Stores	9	Open	-	8	Open	-
Oil, Gas & Consumable Fuels	Oil & Gas Refining & Marketing	3	Restricted	R. III. 5.	5	Restricted	R. III. 5.
Oil, Gas & Consumable Fuels	Coal & Consumable Fuels	15	Restricted	E. II.	24	Restricted	R. III. 5.
Oil, Gas & Consumable Fuels	Oil & Gas Storage & Transportation	1	Open	-	3	Open	-
Oil, Gas & Consumable Fuels	Integrated Oil & Gas	4	Restricted	E. II.	3	Restricted	R. IV. 3.
Oil, Gas & Consumable Fuels	Oil & Gas Exploration & Production	1	Restricted	E. II.	0	Restricted	R. III. 5.
Paper & Forest Products	Forest Products	6	Open	-	7	Open	-
Paper & Forest Products	Paper Products	10	Open	-	14	Open	-
Personal Products	Personal Products	2	Open	-	3	Open	-
Pharmaceuticals	Pharmaceuticals	56	Open	-	98	Open	-
	Research & Consulting Services						
Professional Services	Services	0	Open	-	3	Open	-
Real Estate Management & Development	Real Estate Development	75	Open	-	76	Open	-
Real Estate Management & Development	Real Estate Operating Companies	11	Open	-	8	Open	-
Real Estate Management & Development	Real Estate Services	0	Open	-	2	Open	-
Real Estate Management & Development	Diversified Real Estate Activities	31	Open	-	27	Open	-
Road & Rail	Trucking	4	Restricted	E. VI. 10.	7	Open	-
Road & Rail	Railroads	3	Restricted	E. III. 18.	5	Restricted	R. V.
Semiconductors & Semiconductor Equipment	Semiconductors	8	Open	-	24	Open	-
Semiconductors & Semiconductor Equipment	Semiconductor Equipment	0	Open	-	2	Open	-
Software	Systems Software	1	Open	-	8	Open	-
Software	Application Software	6	Open	-	22	Open	-
	Computer & Electronics Retail						
Specialty Retail	Electronics Retail	1	Open	-	3	Open	-
Specialty Retail	Automotive Retail	4	Restricted	E. III. 18.	6	Restricted	R. VI. 2.
Specialty Retail	Apparel Retail	1	Open	-	2	Open	-
Specialty Retail	Specialty Stores	1	Open	-	1	Open	-
Textiles, Apparel & Luxury Goods	Textiles	14	Restricted	R. III. 3.	30	Open	-
Textiles, Apparel & Luxury Goods	Apparel, Accessories & Luxury Goods	12	Restricted	R. III. 3.	26	Open	-
Textiles, Apparel & Luxury Goods	Footwear	0	Open	-	2	Open	-
Trading Companies & Distributors	Trading Companies & Distributors	31	Open	-	27	Open	-
Transportation Infrastructure	Marine Ports & Services	8	Open	-	15	Restricted	E. IX. 1.

Industry	Sub-industry	Number of firms	QFII		Number of firms	SC	
			Status	Reference		Status	Reference
Transportation Infrastructure	Highways & Rail tracks	11	Open	-	18	Restricted	E. IX.
Transportation Infrastructure	Airport Services	2	Restricted	E. III. 18.	5	Restricted	P. V. 1.
Water Utilities	Water Utilities	9	Open	-	11	Restricted	R. IV. 3.
Wireless Telecommunication Services	Wireless Telecommunication Services	0	Restricted	R. III. 13.	1	Restricted	R. V. 7.

C Calculation of test statistics

C1. Independent sample T-test assuming unequal variances.

As the variances are unknown, Hypothesis 2 and 3 are tested using the following test statistic.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \quad (C1)$$

where \bar{x} is the mean of each sample, n denotes the sample size and s the standard error. The null hypothesis is thus rejected if:

$$t > t_{df,\alpha} \quad (C2)$$

where

$$df = \frac{\left(\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}\right)^2}{\frac{1}{n_1 - 1} \left(\frac{s_1^2}{n_1}\right)^2 + \frac{1}{n_2 - 1} \left(\frac{s_2^2}{n_2}\right)^2} \quad (C3)$$

and α denotes the significance level.

C2. Test statistic for Wilcoxon signed-rank test

Starting with a sample size of N , being the number of pairs as $x_{2,i} - x_{1,i}$. There are thus $2N$ data points. N_r denotes the reduced sample size where $|x_{2,i} - x_{1,i}| = 0$ are removed. The remaining N_r pairs are then ranked from smallest absolute difference to largest absolute difference. R_i denotes the rank. The test statistic W is then:

$$W = \sum_{i=1}^{N_r} [\text{sgn}(x_{2,i} - x_{1,i}) \times R_i] \quad (C4)$$

where sgn refers to the sign of the observation. The null hypothesis of the population being zero is thus rejected if:

$$|W| < W_{\alpha, N_r} \quad (C5)$$

where α denotes the significance level.

D Distribution of CAR

Figure D1. Distribution of CAR (QFII)

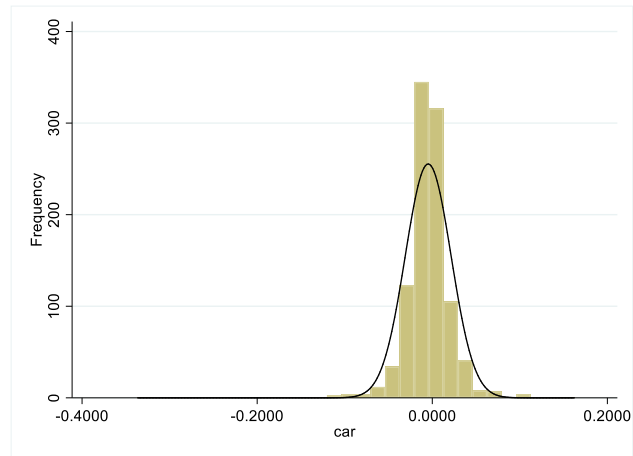


Figure D2. Distribution of CAR (SC)

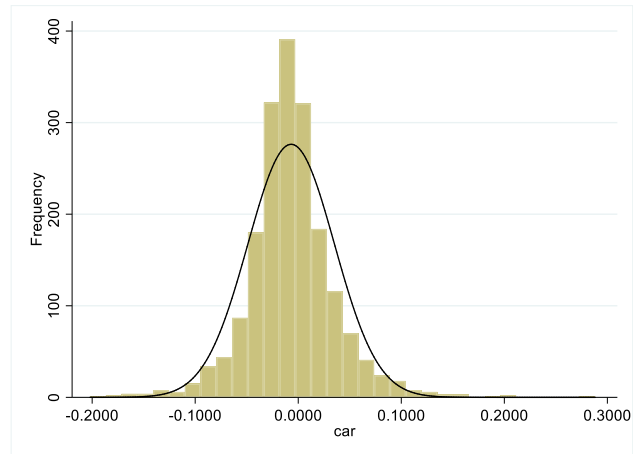
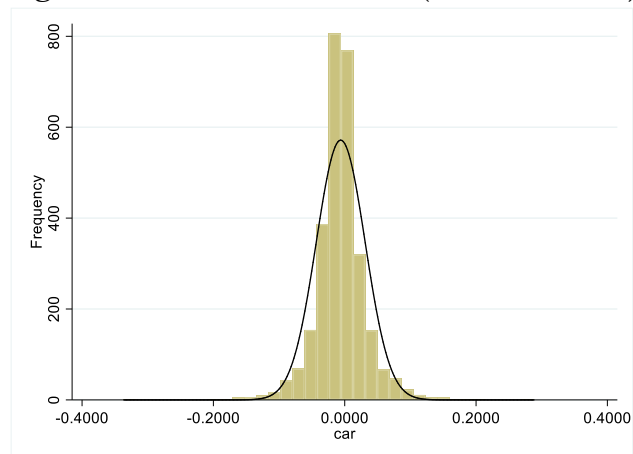


Figure D3. Distribution of CAR (balanced dataset)



E Robustness tests

Table E1. Results for Hypothesis 1, robustness test observation losses (all observations)

This table presents the results from the testing of Hypothesis 1 for the robustness test where all observations are included. The hypothesis is tested with parametric t-tests where the mean $CAR_{Op} \neq 0$, and non-parametric Wilcoxon sing-rank tests where the median $CAR_{Op} \neq 0$. These are run for the QFII sample and the SC sample separately.

Metric	QFII		SC	
	Mean	Median	Mean	Median
Number of observations	735	735	1,732	1,732
Value	-0.59%	-0.51%	-0.77%	-0.87%
P-value	0.00%	0.00%	0.00%	0.00%

Table E2. Results for Hypothesis 2, robustness test observation losses (all observations)

This table presents the results from the testing of Hypothesis 2 for the robustness test where all observations are included. The hypothesis is tested with parametric t-tests where the mean $CAR_{Op} - CAR_{Rt} \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $CAR_{Op} - CAR_{Rt} \neq 0$. These are run for the QFII sample and the SC sample separately.

Metric	QFII		SC	
	Mean	Median	Mean	Median
Number of observations	1,027	1,027	2,228	2,228
Value	-0.33%	-0.15%	-0.75%	-0.42%
P-value	7.85%	20.96%	0.12%	0.03%

Table E3. Results for Hypothesis 3, robustness test observation losses (all observations)

This table presents the results from the testing of Hypothesis 3 for the robustness test where all observations are included. The hypothesis is tested with parametric t-test where the mean $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$.

Metric	Mean	Median
Number of observations	1,274	1,274
Value	0.16%	0.37%
P-value	43.16%	2.26%

Table E4. Results for Hypothesis 4, robustness test observation losses (all observations)

This table presents the results from the testing of Hypothesis 4 for the robustness test where all observations are included. The hypothesis is tested with parametric OLS regression where the mean $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$.

Metric	Mean	Median
Number of observations	1,274	1,274
Value	0.97%	0.44%
P-value	1.20%	0.42%

Table E5. Results for Hypothesis 1, robustness test observation losses (threshold two days)

This table presents the results from the testing of Hypothesis 1 for the robustness test where the threshold of observation losses during the estimation window is set at two days. The hypothesis is tested with parametric t-tests where the mean $CAR_{Op} \neq 0$, and non-parametric Wilcoxon sing-rank tests where the median $CAR_{Op} \neq 0$. These are run for the QFII sample and the SC sample separately.

Metric	QFII		SC	
	Mean	Median	Mean	Median
Number of observations	649	649	1,364	1,364
Value	-0.59%	-0.55%	-0.90%	-1.03%
P-value	0.00%	0.00%	0.00%	0.00%

Table E6. Results for Hypothesis 2, robustness test observation losses (threshold two days)

This table presents the results from the testing of Hypothesis 2 for the robustness test where the threshold of observation losses during the estimation window is set at two days. The hypothesis is tested with parametric t-tests where the mean $CAR_{Op} - CAR_{Re} \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $CAR_{Op} - CAR_{Re} \neq 0$. These are run for the QFII sample and the SC sample separately.

Metric	QFII		SC	
	Mean	Median	Mean	Median
Number of observations	912	912	1,774	1,774
Value	-0.37%	-0.20%	-0.84%	-0.59%
P-value	5.02%	10.01%	0.03%	0.00%

Table E7. Results for Hypothesis 3, robustness test observation losses (threshold two days)

This table presents the results from the testing of Hypothesis 3 for the robustness test where the threshold of observation losses during the estimation window is set at two days. The hypothesis is tested with parametric t-test where the mean $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$.

Metric	Mean	Median
Number of observations	896	896
Value	0.52%	0.49%
P-value	1.90%	0.13%

Table E8. Results for Hypothesis 4, robustness test observation losses (threshold two days)

This table presents the results from the testing of Hypothesis 4 for the robustness test where the threshold of observation losses during the estimation window is set at two days. The hypothesis is tested with parametric OLS regression where the mean $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$.

Metric	Mean	Median
Number of observations	896	896
Value	0.80%	0.29%
P-value	5.10%	4.11%

Table E9. Results for Hypothesis 1, robustness test with entire sample

This table presents the results from the testing of Hypothesis 1 for the robustness test where the entire sample is used, and not just the firms open to foreign investors. The hypothesis is tested with parametric t-tests where the mean $CAR_{Op} \neq 0$, and non-parametric Wilcoxon sing-rank tests where the median $CAR_{Op} \neq 0$. These are run for the QFII sample and the SC sample separately.

Metric	QFII		SC	
	Mean	Median	Mean	Median
Number of observations	1,009	1,009	1,896	1,896
Value	-0.47%	-0.46%	-0.69%	-0.84%
P-value	0.00%	0.00%	0.00%	0.00%

Table E10. Results for Hypothesis 3, robustness test with entire sample

This table presents the results from the testing of Hypothesis 3 for the robustness test where the entire sample is used, and not just the firms open to foreign investors. The hypothesis is tested with parametric t-test where the mean $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$.

Metric	Mean	Median
Number of observations	1,442	1,442
Value	0.79%	0.46%
P-value	0.00%	0.00%

Table E11. Results for Hypothesis 3, robustness test unbalanced dataset

This table presents the results from the testing of Hypothesis 3 for the robustness test where all observations from QFII and SC are included, resulting in an unbalanced dataset. The hypothesis is tested with parametric t-test where the mean $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$.

Metric	Mean	Median
Number of observations	2,173	2,173
Value	0.33%	0.49%
P-value	0.00%	0.00%

Table E12. Results for Hypothesis 4, robustness test unbalanced dataset

This table presents the results from the testing of Hypothesis 4 for the robustness test where all observations from QFII and SC are included, resulting in an unbalanced dataset. The hypothesis is tested with parametric OLS regression where the mean $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$.

Metric	Mean	Median
Number of observations	2,173	2,173
Value	0.55%	0.39%
P-value	4.70%	1.63%

Table E13. Results for Hypothesis 1, robustness test heterogeneity market capitalisation

This table presents the results from the testing of Hypothesis 1 for the robustness test where only firms within the top 25 percentile market capitalisation is included. The hypothesis is tested with parametric t-tests where the mean $CAR_{Op} \neq 0$, and non-parametric Wilcoxon sing-rank tests where the median $CAR_{Op} \neq 0$. These are run for the QFII sample and the SC sample separately.

Metric	QFII		SC	
	Mean	Median	Mean	Median
Number of observations	179	179	363	363
Value	-0.29%	-0.19%	-0.76%	-0.65%
P-value	10.25%	10.27%	0.17%	0.08%

Table E14. Results for Hypothesis 2, robustness test heterogeneity market capitalisation

This table presents the results from the testing of Hypothesis 2 for the robustness test where only firms within the top 25 percentile market capitalisation is included. The hypothesis is tested with parametric t-tests where the mean $CAR_{Op} - CAR_{Re} \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $CAR_{Op} - CAR_{Re} \neq 0$. These are run for the QFII sample and the SC sample separately.

Metric	QFII		SC	
	Mean	Median	Mean	Median
Number of observations	1,009	1,009	474	474
Value	-0.30%	-0.16%	-1.14%	-0.42%
P-value	10.18%	19.90%	0.50%	1.60%

Table E15. Results for Hypothesis 3, robustness test heterogeneity market capitalisation

This table presents the results from the testing of Hypothesis 3 for the robustness test where only firms within the top 25 percentile market capitalisation is included. The hypothesis is tested with parametric t-test where the mean $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$.

Metric	Mean	Median
Number of observations	270	270
Value	0.52%	0.71%
P-value	18.91%	3.49%

Table E16. Results for Hypothesis 4, robustness test heterogeneity market capitalisation

This table presents the results from the testing of Hypothesis 4 for the robustness test where only firms within the top 25 percentile market capitalisation is included. The hypothesis is tested with parametric OLS regression where the mean $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$.

Metric	Mean	Median
Number of observations	270	270
Value	1.25%	0.03%
P-value	7.60%	8.05%

Table E17. Results for Hypothesis 1, robustness test heterogeneity average turnover

This table presents the results from the testing of Hypothesis 1 for the robustness test where firms within the lowest 25 percentile average turnover are excluded. The hypothesis is tested with parametric t-tests where the mean $CAR_{Op} \neq 0$, and non-parametric Wilcoxon sing-rank tests where the median $CAR_{Op} \neq 0$. These are run for the QFII sample and the SC sample separately.

Metric	QFII		SC	
	Mean	Median	Mean	Median
Number of observations	538	538	1,091	1,091
Value	-0.48%	-0.44%	-0.78%	-0.84%
P-value	0.01%	0.00%	0.00%	0.00%

Table E18. Results for Hypothesis 2, robustness test heterogeneity average turnover

This table presents the results from the testing of Hypothesis 2 for the robustness test where firms within the lowest 25 percentile average turnover are excluded. The hypothesis is tested with parametric t-tests where the mean $CAR_{Op} \neq 0$, and non-parametric Wilcoxon sing-rank tests where the median $CAR_{Op} \neq 0$. These are run for the QFII sample and the SC sample separately.

Metric	QFII		SC	
	Mean	Median	Mean	Median
Number of observations	756	756	1,422	1,422
Value	-0.38%	-0.26%	-1.00%	-0.64%
P-value	10.75%	16.57%	0.04%	0.01%

Table E19. Results for Hypothesis 3, robustness test heterogeneity average turnover

This table presents the results from the testing of Hypothesis 3 for the robustness test where firms within the lowest 25 percentile average turnover are excluded. The hypothesis is tested with parametric t-test where the mean $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$.

Metric	Mean	Median
Number of observations	772	772
Value	0.78%	0.55%
P-value	0.14%	0.02%

Table E20. Results for Hypothesis 4, robustness test heterogeneity average turnover

This table presents the results from the testing of Hypothesis 4 for the robustness test where firms within the lowest 25 percentile average turnover are excluded. The hypothesis is tested with parametric OLS regression where the mean $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$.

Metric	Mean	Median
Number of observations	772	772
Value	1.16%	0.44%
P-value	1.20%	49.24%

Table E21. Results for Hypothesis 1, robustness test control variable market capitalisation

This table presents the results from the testing of Hypothesis 1 for the robustness test where the control variable market capitalisation is introduced. The hypothesis is tested with the parametric OLS regression $\widehat{CAR}_i = \hat{\beta}_0 + \hat{\beta}_1 \times \text{market capitalisation}_i + \varepsilon_i$ where the mean $CAR_{Op} \neq 0$. These are run for the QFII sample and the SC sample separately. The value and p-value in the table below regards results for the control variable market capitalisation.

Metric	QFII Mean	SC Mean
Number of observations	735	1,732
Value	0.00%	0.00%
P-value	12.80%	11.20%

Table E22. Results for Hypothesis 2, robustness test control variable market capitalisation

This table presents the results from the testing of Hypothesis 2 for the robustness test where the control variable market capitalisation is introduced. The hypothesis is tested with the parametric OLS regression $\widehat{CAR}_i = \hat{\beta}_0 + \hat{\beta}_1 \times \text{market capitalisation}_i + \hat{\beta}_2 \times \text{open}_i + \varepsilon_i$ where the mean $CAR_{Op} - CAR_R \neq 0$. These are run for the QFII sample and the SC sample separately. The value and p-value in the table below regards results for the control variable market capitalisation.

Metric	QFII Mean	SC Mean
Number of observations	1,027	2,228
Value	0.00%	0.00%
P-value	2.50%	11.40%

Table E23. Results for Hypothesis 3, robustness test control variable market capitalisation

This table presents the results from the testing of Hypothesis 3 for the robustness test where the control variable market capitalisation is introduced. The hypothesis is tested with the parametric OLS regression $\widehat{CAR}_i = \hat{\beta}_0 + \hat{\beta}_1 \times \text{market capitalisation}_i + \hat{\beta}_2 \times \text{time}_i + \varepsilon_i$ where the mean $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$. The value and p-value in the table below regards results for the control variable market capitalisation.

Metric	Mean
Number of observations	1,274
Value	-0.44%
P-value	2.10%

Table E24. Results for Hypothesis 4, robustness test control variable market capitalisation

This table presents the results from the testing of Hypothesis 4 for the robustness test where the control variable market capitalisation is introduced. The hypothesis is tested with the parametric OLS regression $\widehat{CAR}_i = \hat{\beta}_0 + \hat{\beta}_1 \times \text{reform}_i + \hat{\beta}_2 \times \text{open}_i + \hat{\beta}_3 \times \text{interaction}_i + \hat{\beta}_4 \times \text{market capitalisation}_i + \varepsilon_i$ where the mean $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$. The value and p-value in the table below regards results for the control variable market capitalisation.

Metric	Mean
Number of observations	1,274
Value	0.00%
P-value	0.30%

Table E25. Results for Hypothesis 1, robustness test control variable average turnover

This table presents the results from the testing of Hypothesis 1 for the robustness test where the control variable average turnover is introduced. The hypothesis is tested with the parametric OLS regression $\widehat{CAR}_i = \hat{\beta}_0 + \hat{\beta}_1 \times average\ turnover_i + \varepsilon_i$ where the mean $CAR_{Op} \neq 0$. These are run for the QFII sample and the SC sample separately. The value and p-value in the table below regards results for the control variable average turnover.

Metric	QFII Mean	SC Mean
Number of observations	735	1,732
Value	0.00%	0.00%
P-value	53.10%	4.90%

Table E26. Results for Hypothesis 2, robustness test control variable average turnover

This table presents the results from the testing of Hypothesis 2 for the robustness test where the control variable average turnover is introduced. The hypothesis is tested with the parametric OLS regression $\widehat{CAR}_i = \hat{\beta}_0 + \hat{\beta}_1 \times average\ turnover_i + \hat{\beta}_2 \times open_i + \varepsilon_i$ where the mean $CAR_{Op} - CAR_{Re} \neq 0$. These are run for the QFII sample and the SC sample separately. The value and p-value in the table below regards results for the control variable average turnover.

Metric	QFII Mean	SC Mean
Number of observations	1,027	2,228
Value	0.00%	0.00%
P-value	39.80%	0.30%

Table E27. Results for Hypothesis 3, robustness test control variable average turnover

This table presents the results from the testing of Hypothesis 3 for the robustness test where the control variable average turnover is introduced. The hypothesis is tested with the parametric OLS regression $\widehat{CAR}_i = \hat{\beta}_0 + \hat{\beta}_1 \times average\ turnover_i + \hat{\beta}_2 \times time_i + \varepsilon_i$ where the mean $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$. The value and p-value in the table below regards results for the control variable average turnover.

Metric	Mean
Number of observations	1,274
Value	-0.43%
P-value	2.40%

Table E28. Results for Hypothesis 4, robustness test control variable average turnover

This table presents the results from the testing of Hypothesis 4 for the robustness test where the average turnover average turnover is introduced. The hypothesis is tested with the parametric OLS regression $\widehat{CAR}_i = \hat{\beta}_0 + \hat{\beta}_1 \times reform_i + \hat{\beta}_2 \times open_i + \hat{\beta}_3 \times interaction_i + \hat{\beta}_4 \times average\ turnover_i + \varepsilon_i$ where the mean $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$. The value and p-value in the table below regards results for the control variable average turnover.

Metric	Mean
Number of observations	1,274
Value	0.00%
P-value	0.10%

Table E29. Results for Hypothesis 1, robustness test outliers

This table presents the results from the testing of Hypothesis 1 for the robustness test where outliers are excluded. The hypothesis is tested with parametric t-tests where the mean $CAR_{Op} \neq 0$, and non-parametric Wilcoxon sing-rank tests where the median $CAR_{Op} \neq 0$. These are run for the QFII sample and the SC sample separately.

Metric	QFII		SC	
	Mean	Median	Mean	Median
Number of observations	648	648	1,311	1,311
Value	-0.50%	-0.51%	-0.93%	-1.00%
P-value	0.00%	0.00%	0.00%	0.00%

Table E30. Results for Hypothesis 2, robustness test outliers

This table presents the results from the testing of Hypothesis 2 for the robustness test where outliers are excluded. The hypothesis is tested with parametric t-tests where the mean $CAR_{Op} - CAR_{Re} \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $CAR_{Op} - CAR_{Re} \neq 0$. These are run for the QFII sample and the SC sample separately.

Metric	QFII		SC	
	Mean	Median	Mean	Median
Number of observations	909	909	1,708	1,708
Value	-0.06%	-0.13%	-0.57%	-0.44%
P-value	58.42%	48.87%	0.02%	0.03%

Table E31. Results for Hypothesis 3, robustness test outliers

This table presents the results from the testing of Hypothesis 3 for the robustness test where outliers are excluded. The hypothesis is tested with parametric t-test where the mean $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $CAR_{Op, QFII} - CAR_{Op, SC} \neq 0$.

Metric	Mean	Median
Number of observations	976	976
Value	0.42%	0.52%
P-value	0.95%	0.05%

Table E32. Results for Hypothesis 4, robustness test outliers

This table presents the results from the testing of Hypothesis 4 for the robustness test where outliers are excluded. The hypothesis is tested with parametric OLS regression where the mean $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$, and non-parametric Wilcoxon rank-sum tests where the median $(CAR_{Op, QFII} - CAR_{Re, QFII}) - (CAR_{Op, SC} - CAR_{Re, SC}) \neq 0$.

Metric	Mean	Median
Number of observations	976	976
Value	0.78%	0.39%
P-value	1.40%	1.63%