Financial Market Opening and Corporate Tax Avoidance: Evidence from Staggered Quasi-Natural Experiments

Yunsen Chen
School of Accountancy, Central University of Finance and Economics
yschen@cufe.edu.cn

Jianqiao Huang *
School of Accountancy, Zhejiang University of Finance and Economics
jianqiaohuang@zufe.edu.cn

Xiao Li
School of Accountancy, Central University of Finance and Economics
afxiaoli@cufe.edu.cn.com

Xiaoran Ni *
School of Economics & WISE, Xiamen University
nrxr@xmu.edu.cn

This version: March 2022

*Corresponding authors. We thank Guanmin Liao, Hang Liu and the participants at the workshop at Xiamen University for valuable comments. We acknowledges financial support from the National Natural Science Foundation of China (71802170; 71872198; 71802205), the Fundamental Scientific Center for Econometric Modeling and Economic Policy Studies, National Science Foundation of China (No. 71988101), and the Key Laboratory of Econometrics (Xiamen University), Ministry of Education. All errors are our own.
Financial Market Opening and Corporate Tax Avoidance: Evidence from Staggered Quasi-Natural Experiments

Abstract: This paper examines whether financial market opening, as introduced by the staggered launches of the Stock Connect programs between China’s mainland and Hong Kong, affects corporate tax avoidance. Using a difference-in-differences approach, we find that the financial market opening significantly reduces tax avoidance behavior in Chinese A-share listed companies. In addition, we find that the observed effects are more prominent in firms that experience increased foreign institutional ownership following regulatory changes, and in firms with ex-ante weaker external monitoring, stronger external financing needs, and less political dependency. These results are consistent with our hypothesis that financial market opening affects corporate tax avoidance through improved governance and reduced external financing costs. We further find that financial market opening decreases capital costs. Overall, our findings indicate that the opening of emerging financial markets to foreign investors is crucial for curtailing opportunistic tax avoidance by local firms.

Keywords: Financial Market Opening; Tax Avoidance; Corporate Governance; Stock Connect

JEL: G18, G38, H26
1. Introduction

Financial market opening, the practice of allowing foreign investors to invest in local markets (especially in emerging markets), receives significant attention from academics and practitioners (Bekaert et al., 2007; Moshirian et al., 2021; Kacperczyk et al., 2021). Prior studies find that financial market opening affects stock prices efficiency and stimulates corporate investment. However, limited attention is paid to how financial market opening shapes firms’ tradeoffs between the benefits and the costs of avoiding taxes. As the state is “de facto the largest minority shareholder in almost all corporations,” it is important to understand how the liberalization of regulations affects firms’ tax decisions (Desai et al., 2007). In this paper, we seek to fill this gap in previous research by exploring a unique setting of staggered market liberalization in the largest emerging market—the Chinese stock market. We document that financial market opening can constrain practices of corporate tax avoidance.

Theoretically, the effect of financial market opening on corporate tax avoidance is ex-ante ambiguous. The financial market opening can reduce corporate tax avoidance through at least two non-mutually exclusive channels. First, the prior literature indicates that financing needs are important drivers of tax avoidance (Chen et al., 2010; Law and Mills, 2015; Edwards et al., 2016). Corporate insiders conduct tax-planning activities to generate additional funds that substitute for more expensive external financing. As financial market opening can reduce the cost of capital and remove financial constraints (e.g., Henry, 2000, 2003; Bekaert and Harvey, 2000; Chari and Henry, 2004; Bekaert et al., 2017), such opening

---

1 See Lucas (1990), Bekaert and Harvey (2000), Fischer (2003), Henry (2000, 2007), Bekaert et al. (2005), Chari and Henry (2008), Chan and Kwok (2017), and Larrain and Stumpner (2017), among others.
may mean that local firms are less likely to avoid taxes for fund-generating reasons.

Second, as tax avoidance is complex and opaque, it can help corporate insiders to gain private benefits and increase corporate risks (Crocker and Slemrod, 2005; Desai and Dharmapala, 2006, 2009; Gul et al., 2010; Kim et al., 2011; Huseynov et al., 2017). From this perspective, financial market opening, which introduces firms to the direct and indirect effect of enhanced monitoring from sophisticated foreign institutional investors (Ferreira and Matos, 2008; Gul et al., 2010), restricts opportunistic tax avoidance behavior on the part of firm insiders.  

However, the financial market opening may also increase tax avoidance behavior. Tax avoidance can be an effective tool for firms to boost their performance and increase their market value in the short term (Chen et al., 2010). The opening of financial markets can introduce “hot money”, i.e., foreign portfolio flows in search of short-term profits, into the local markets and encourages speculative trading (Bena et al., 2017; Liu et al., 2021), which may induce firms to prioritize short-term earnings over long-term growth through adopting more aggressive tax avoidance strategies. Additionally, sophisticated foreign investors may use their skills to help tax-inefficient firms explore cost-saving tax strategies (Cheng et al., 2012; Khan et al., 2017). Furthermore, in an attempt to become more attractive investees, firms may choose to avoid paying taxes and improve their market performance following the opening of financial markets (Cai and Liu, 2009). From this perspective, financial market liberalization may increase either the opportunistic or the value-enhancing type of tax avoidance.

---

2 We analyze various direct and indirect channels of enhanced external monitoring associated with foreign institutional investors in Section 2.
In addition, given the small representation of foreign capital inflow via the Stock Connect programs, and foreign investors may not be able to acquire soft information about local firms, making external monitoring hard to function well, financial market liberalization may have no significant relation with tax avoidance.

In light of these theoretical arguments, we note that determining how financial market opening affects corporate tax avoidance involves asking an empirical question with tension. To address these issues, we use the staggered partial financial opening of the Chinese mainland stock market (that is, the Stock Connect programs between the Chinese mainland and Hong Kong stock exchanges, MHSC) as a series of quasi-exogenous shocks. These Stock Connect programs have been implemented in two steps. On November 17, 2014, the China Securities Regulatory Commission (CSRC) started the Shanghai–Hong Kong Stock Connect (SHSC) program, which initially permitted foreign and Hong Kong investors to trade 568 eligible stocks listed in Shanghai. On December 5, 2016, the CSRC further implemented the Shenzhen–Hong Kong Stock Connect (SZSC), permitting foreign and Hong Kong investors to trade another 881 eligible stocks listed in Shenzhen. These Stock Connect launches not only significantly added to the connections between the stock exchanges of the mainland and Hong Kong, but also gave overseas investors a gateway into the Chinese A-share market through the Hong Kong market (Burdekin and Siklos, 2018).

Our setting has at least two attractive features. First, the launches of the Stock Connect programs on the Shanghai and Shenzhen stock exchanges represent quasi-exogenous shocks (i.e., partial financial market openings) to a subset of local market firms that are investible by foreign investors. The introduction of these programs creates both time-series and
cross-sectional firm-level variations in the degrees of exposure to foreign investors. These variations enable us to conduct difference-in-differences analyses in a staggered manner within a single country (Bertrand and Mullainathan, 2003; Giannetti et al., 2015). The second attractive feature of our setting is that the Chinese economy, as the world’s second largest economy and biggest emerging economy, is a hybrid system that involves both central planning and market-based activities (Piotroski and Zhang, 2014). The availability of both a large group of state-owned enterprises (SOEs) and many actively developing non-state-owned enterprises (non-SOEs) enables us to consider how government policies for the financial markets affect various types of firms that have different incentives for their tax decisions (Bradshaw et al., 2019).

We begin by examining the relationship between financial market opening and corporate tax avoidance through a standard difference-in-differences approach, with firm fixed effects. Following prior literature (Desai and Dharmapala, 2006, 2009; Frank et al., 2009; Wilson, 2009), we use three measures as proxies for tax avoidance: book-tax difference, permanent book-tax difference, and residual book-tax difference. We find that relative to the control firms, the eligible firms (the treatment firms) reduce their tax avoidance behavior by 7-10%, which is economically significant. However, the validity of a causal interpretation of the parallel trend found in this estimation remains open to doubt. To alleviate this concern, we conduct a dynamic test around the times of the Stock Connect program launches. We find no pre-existing trend in corporate tax avoidance before the regulatory changes, and we observe only a decrease in corporate tax avoidance after the regulatory changes, which suggests that our difference-in-differences design is valid.
To throw light on the potential underlying channels for these effects, we explore cross-sectional differences in firm characteristics. To do this, we conduct three tests. First, given the complex and opaque nature of tax avoidance, and the high demand for firm-specific information from foreign investors, we hypothesize that the curtailing effect of financial market opening is more pronounced in firms with ex-ante weak external monitoring (Desai and Dharmapala, 2006). We confirm this conjecture by showing that higher foreign ownership and broader analyst coverage can alleviate the main effect. For our second test, we consider that firms may pursue tax-planning activities to generate additional cash flows and alleviate financial constraints (Chen et al., 2010; Law and Mills, 2015; Edwards et al., 2016). In considering that the opening of financial markets can reduce the cost of capital and facilitate external financing (Levine and Zervos, 1998; Mitton, 2006; Gupta and Yuan, 2009), we estimate that the main effect should be more prominent for firms with a stronger need for external financing. Our findings are consistent with this view. Concerning our third test, prior studies indicate that the factors of ownership and government connections matter in shaping firms’ incentives to avoid taxes (Adhikari et al., 2006; Bradshaw et al., 2019). We find that the curtailing effect of financial market opening on corporate tax avoidance is more prominent for non-SOEs and for firms with weaker government connections. This set of findings is consistent with the view that firms with strong political dependencies are ex-ante more likely to make tax decisions that are favorable to the state (Bradshaw et al., 2019).³ In summary, these results indicate that financial market opening can curtail corporate tax

³ Lin et al. (2018) find that ties to politicians by corporate boards of directors weaken the effectiveness of tax authorities in constraining tax avoidance in China. However, our findings from the cross-sectional tests are inconsistent with this view. Notably, the sample period used by Lin et al. is 2003–2013. Our sample period is 2012–2018, during which the institutional background changed substantially.
avoidance through improved governance and reduced external financing costs.

To further support our main findings, we examine the direct economic consequences of financial market opening. We find that compared with the control firms, the treatment firms have lower costs of capital, and this effect is more pronounced for firms with a higher degree of tax avoidance, which suggests that after liberalization firms experience relief in financial constraints and an improvement in external monitoring.

Finally, we conduct a series of robustness checks to further validate our main findings. Specifically, we conduct placebo tests to confirm that our main findings are not driven by confounding events. Furthermore, we confirm that our main findings still hold if we use the moving average of the difference between the nominal tax rate and the real tax rate, and if we use the effective tax rate (as a measure of tax avoidance) for an alternative dependent variable. In addition, we show that our main findings are robust to various alternative model specifications. Overall, our findings indicate that financial market opening is beneficial to investors, as it curtails firms’ opportunistic incentives to avoid taxes.

Our paper contributes to several strands of literature. We contribute to the literature on the real effects of financial market opening (e.g., Bekaert and Harvey, 2000; Fischer, 2003; Henry, 2007; Chan and Kwok, 2017; Larrain and Stumpner, 2017; Moshirian et al., 2021), as previous studies provide relatively little evidence on how financial market opening affects firms’ tax decisions. To our knowledge, our paper is the first to provide comprehensive

---

4 In a parallel study, Jiang et al. (2020) examine how market liberalization affects tax avoidance. We differ from their study by analyzing both the pros and cons of financial market opening in detail, and comprehensively exploring the economic channels through which financial market opening affects tax avoidance. Our evidence indicates that both ex-ante threat and ex-post presence can prominently affect corporate tax decisions, while they do not explain how improved governance and reduced external financing costs can be at play.
evidence that financial market opening has first-order effects on corporate tax behavior.\textsuperscript{5}

Our paper also adds to the literature on the determinants of corporate tax avoidance. Specifically, prior studies indicate that both investor type and ownership structures significantly affect corporate tax avoidance (e.g., Chen et al., 2010; Khurana and Moser, 2013; McGuire et al., 2014; Li et al., 2017), but these studies provide little insight into whether or how foreign investors shape corporate tax decisions. As financial market liberalization clearly encourages foreign investors to participate in local markets, we fill a gap in research on how those foreign investors affect corporate tax avoidance. Our paper’s findings also align with those of several prior studies on how financial intermediaries (e.g., financial analysts) affect tax avoidance (Allen et al., 2016; Chen and Lin, 2017; Chen et al., 2018). These findings are important in that external monitoring is crucial to corporate tax decisions.

The remaining sections of the paper are organized as follows. Section 2 discusses the institutional background. Section 3 describes the data and the empirical design. Section 4 reports the main estimation results. Section 5 provides the empirical evidence for further analysis, and Section 6 presents the conclusions.

\textbf{2. Institutional Background and Hypothesis Development}

\textbf{2.1 Institutional background}

The early waves of financial market opening in China can be traced back to the early 1990s when the A-share stock market was first established. A-share listed firms have been

\textsuperscript{5} We control for capital investments to capture the pure effects of financial market opening on corporate tax avoidance. We consider that an increase in capital investment results in increased depreciation, which may reduce both pre-tax income and tax expenses. In other words, a concurrent increase in corporate investments goes against finding a significant effect of financial market opening in curtailing corporate tax avoidance.
allowed to issue B-shares to foreign shareholders since 1992, and they began cross-listing on the Hong Kong stock market in 1993. In 2002, the CSRC introduced the Qualified Foreign Institutional Investors (QFII) policy, which allows foreign institutional investors to trade A-shares within a limited quota system, as granted by the Chinese government. In May 2007, the CSRC began to allow Chinese investors (i.e., qualified domestic institutional investors (QDIIs)) to trade H-shares. Before 2014, although China has taken several steps to open up its mainland financial market, access to foreign investors is limited in general. For example, the B-share market is still very small, and the QFII policy allows only qualified foreign institutional investors to trade A-shares within a limited quota system.

To accelerate the pace of financial market opening, in April 2014 the Chinese Premier Li Keqiang announced the SHSC program, as part of China’s efforts to open up its capital markets. In August 2016, Premier Li Keqiang announced the launch of the SZSC, and the CSRC officially implemented the SZSC on December 5, 2016. According to the arrangement of the programs, individual Hong Kong and foreign investors can invest in eligible stocks listed on the Shanghai Stock Exchange and Shenzhen Stock Exchange (which is often referred to as northbound trading), and domestic investors from Chinese mainland can invest in eligible stocks listed on the Hong Kong Exchanges and Clearing Limited (which is often referred to as southbound trading). Both programs set a daily quota of 13 billion yuan for northbound trading and 10.5 billion yuan for southbound trading. Those programs are viewed to create a single “China” stock market that ranks as one of the biggest in the world by market cap and daily trading turnover, which helps diversify the portfolios of Chinese investors and increase the likelihood of Chinese shares being included in global benchmark
stock indexes. For Hong Kong and foreign investors investing in A shares through the two programs, the shares will be held by Hong Kong Securities Clearing Company Limited (HKSCC), the HKEX clearing entity, on behalf of the investors. Eligible stocks in the two programs represent large- and mid-cap stocks with established earnings records (Liu et al., 2021). In the SHSC program, the eligible stocks include those that trade on the Shanghai Stock Exchange (SSE) 180 Index, the SSE 380 Index, and the SSE-listed A-shares that have corresponding H-shares listed in Hong Kong. In the SZSC program, eligible stocks must have a market value higher than RMB 6 billion, and must be included in the Shenzhen Stock Exchange Component (SZSE) Index or the Shenzhen SME Innovation Index, or have corresponding H-shares listed in Hong Kong. Therefore, the list of eligible stocks may slightly change over time. Figure 1 illustrates the timeline of the staggered launch of the Mainland-Hong Kong Stock Connect (MHSC) programs.

[Insert Figure 1 here]

Foreign institutional ownership in treated firms has almost experienced exponential growth following the launch of the MHSC programs. As illustrated in Figure 2, compared with the situation before the launch of the MHSC programs, the proportion of foreign shareholding in the treated firms has increased by almost 8 times, the average of which reaching close to 2% at one time. For example, on May 19, 2015, Shanghai Airport (600009) became the first stock with foreign institutional ownership of more than 28% (the cutoff of temporarily prohibiting accepting additional buy orders through the MHSC programs). With

---

6 Source: https://www.goldmansachs.com/insights/pages/stock-connect/.
the implementation of the MHSC programs, firms with a 10% or higher foreign institutional ownership include Han’s Laser (002008), Oupai Home Furnishing (603833), China Test Inspection (300012), Sophia (002572), Midea Group (000333), Gree Electric (000651), etc.

In the meantime, the level of foreign institutional ownership in control firms has hardly changed, basically stabilizing below 2‰, indicating that the implementation of the MHSC programs has indeed led to a significant increase in the proportion of foreign institutional ownership in the A-share market.

[Insert Figure 2 here]

More importantly, we further investigated the number of A-share companies in which the HKSCC is one of the top ten shareholders of tradable shares, as illustrated in Figure 3. With the implementation of the Shanghai-Hong Kong Stock Connect in 2014, the number of A-share companies in which the HKSCC is the company’s top ten shareholders of tradable shares increased from about 50 to about 250; and with the further development of Shenzhen-Hong Kong Stock Connect in 2016, the number has directly soared to more than 700, suggesting that foreign investors have the motivation and ability to participate in governance practices of A-share listed firms. In fact, in the first year after the launch of the Shenzhen-Hong Kong Stock Connect program, overseas institutions participated in 748 voting at the general meeting of shareholders, which involves 314 Shenzhen-listed companies.

[Insert Figure 3 here]

3.2 Hypothesis development

There could be different channels through which financial market opening is associated
with corporate tax decisions, yielding the overall effect ex-ante ambiguous. On the one hand, the financial market opening can discourage corporate tax avoidance mainly through two channels. First, the classical literature indicates that financial market opening can result in a lower cost of capital and relieve financial constraints of local firms due to improved risk-sharing (e.g., Lucas, 1990; Bekaert and Harvey, 2000; Henry, 2000; Henry, 2003; Chari and Henry, 2004). For financially constrained firms, tax avoidance serves as an important tool to generate additional funds that substitute for more expensive external financing (Chen et al., 2010; Law and Mills, 2015; Edwards et al., 2016). Therefore, financial market opening can reduce firms’ incentives to generate internal cash flows through avoiding taxes.

Second, the financial market opening can help curtail opportunistic tax avoidance behaviors through improving external monitoring both directly and indirectly. Due to superior capabilities, resources, and skills to collect and process value-relevant, firm-specific information and a lack of close business ties with local companies, foreign institutional investors may be in a better position than domestic institutions to monitor corporate insiders and influence strategic decision making (Ferreira and Matos, 2008; Gul et al., 2010). Indeed, a series of prior studies show that agency costs are typically lower in firms with foreign shareholdings (Hartzell and Starks, 2003; Kim and Yi, 2015; Bena et al., 2017; Luong et al., 2017; Moshirian et al., 2021).

It is worth noting that even if the extent of foreign institutions directly participating in corporate decision-making is not that prominent, the mere threat from foreign participants could shift the equilibrium behavior of local firms for at least two reasons. It is well-identified that foreign institutions have cherry-picking (or cream-skimming) tendency,
i.e., the preference to require better corporate governance and pick better performing firms in emerging markets (Stulz, 2005; Leuz et al., 2008; Gormley et al., 2012; Kim and Lu, 2013), which can make better-performing firms valued higher, implying that the average quality of the pool of investees that are not invested by foreign institutional investors is worse. The ex-ante prospect of cherry-picking by foreign institutional investors could restrain firm insiders’ opportunistic behaviors and induce them to become better investees. Second, local institutional investors, who may be initially less sophisticated in their monitoring skills, may attempt to adopt the better practice of foreign institutions through “learning by observing”, which can further intensify external monitoring of local firms. Under those circumstances, there is less space for corporate insiders to gain private benefits through tax avoidance behavior that is complex and opaque (Crocker and Slemrod, 2005; Desai and Dharmapala, 2006, 2009; Kim et al., 2011; Huseynov et al., 2017).

Based on the arguments above, we propose the following hypothesis:

**H1a**: Financial market opening discourages corporate tax avoidance.

On the other hand, however, the financial market opening could encourage corporate tax avoidance for the following three reasons. First, financial market opening may attract foreign portfolio flows that represent “hot money” in search of short-term profits to local markets. Brennan and Cao (1997) indicate that foreign investors who are less informed about the prospects of local stocks may rebalance portfolios disproportionally and amplify the stock reaction to negative public news. Liu et al. (2021) show that the opening of financial markets increases turnover and volatility of affected stocks, especially for those with a higher market beta, which are typical evidence of speculative trading. The pressures from foreign investors
may induce firms toward short-termist strategies, delivering immediate returns to shareholders at the expense of long-term investment (Bena et al., 2017). As tax avoidance serves as an effective tool for firms to boost their performance and increase their market value in the short term (Chen et al., 2010), firms may be aggressively involved in tax avoidance strategies to pursue short-term gains. Second, as corporate income taxes represent a significant expense to shareholders, institutional investors who possess tax interest or knowledge have incentives to implement tax-saving changes that enhance after-tax cash flows and firm value (Cheng et al., 2012; Khan et al., 2017). Following the opening of financial markets, foreign institutions may use their sophisticated skills to help tax-inefficient firms explore feasible tax avoidance strategies. Third, firms in relatively disadvantageous positions may attempt to become more attractive investees through avoiding taxes and improving their market performance following the opening of financial markets (Cai and Liu, 2009). Therefore, financial market opening may increase either the opportunistic or the value-enhancing type of tax avoidance. Based on the arguments above, we propose the following competing hypothesis:

**H1b: Financial market opening encourages corporate tax avoidance.**

In addition, foreign investors are at an informational disadvantage relative to local investors and incur higher monitoring costs when making investments (Stulz, 2005; Bae and Goyal, 2010). Also, controlling shareholders have incentives to withhold or selectively disclose value-relevant information, which tends to discourage informed trading (Gul et al., 2010). On this foundation, together with the small representation of foreign capital inflow to the local stock market, financial market opening may not have a significant effect on
corporate tax avoidance.

According to the arguments above, the relationship between financial market opening and corporate tax avoidance is ex-ante ambiguous. Therefore, we will test whether and how financial market opening affects corporate tax avoidance through empirical analysis in the following sections.

3. Data and Empirical Design

3.1 Sample selection

In this paper, the sample spans 2012 through 2018, which covers the period before and after the launch of the SHSC (November 2014) and the SZSC (December 2016). We obtain financial information on Chinese A-share listed firms from the CSMAR database, the nominal tax rates from the WIND database, and the data on eligible stocks of the SHSC and SZSC programs from the Hong Kong Stock Exchange website.\(^7\) We select the sample based on the following criteria. To eliminate the effects of cross-listing, we exclude firms listed on the Chinese stock market after 2014, and firms that issue B-shares or H-shares. To facilitate identification, our treatment sample only includes those firms who are selected into the MHSC starting from the programs and stay in the programs consistently. Our baseline full sample consists of 10,659 firm-year observations.

3.2 Measures of corporate tax avoidance

Following a series of prior studies (e.g., Desai and Dharmapala, 2006, 2009; Frank et al., 2009; Wilson, 2009), we apply three measures of corporate tax avoidance as our main

\(^7\) Website: http://www.hkex.com.hk.
dependent variables. The first measure is book-tax difference (\(BTD\)), which is calculated as follows:

\[
BTD_{i,t} = \frac{BI_{i,t} - CIT_{i,t} / STR_{i,t}}{Size_{i,t-1}}.
\]  

(1)

where \(BI\) indicates income before taxes, \(CIT\) indicates concurrent income tax expense, \(STR\) indicates nominal tax rate, and \(Size\) indicates firm size. The second measure is the permanent book-tax difference (\(PERM\_BTD\)), which is measured as follows:

\[
PERM\_BTD_{i,t} = \frac{BI_{i,t} - (CIT_{i,t} + DIT_{i,t}) / STR_{i,t}}{Size_{i,t-1}}.
\]  

(2)

where \(DIT\) indicates deferred income tax expense, which is calculated as the net change in deferred income tax liabilities, minus the net change in deferred income tax assets from the beginning to the end of the current year. To mitigate the concern that \(BTD\) may capture the effects of earnings management, we apply a third measure, namely the residual book-tax difference (\(DDBTD\)), as derived from Desai and Dharmapala (2006). The \(DDBTD\) equals the residual from the following fixed effects regression:

\[
BTD_{i,t} = \alpha \times TACC + \mu_i + \epsilon_{i,t}.
\]  

(3)

where \(TACC\) denotes the total accruals, which represent the difference between net income and operating cash flows, scaled by lagged total assets.

3.3 Empirical design

Following prior studies utilizing staggered difference-in-differences setting (e.g., Bertrand and Mullainathan, 2003; Li et al., 2017; Fairhurst et al., 2020), our baseline regression is specified as follows:

\[
Tax\_Avoidance_{i,t} = \beta_0 + \beta_1 \text{MHK}_{i,t} + \gamma \text{Control}_{i,t} + Firm_{i} + Year_{t} + \epsilon_{i,t}.
\]  

(4)
where $MHK_{i,t}$ is a dummy variable equals one if firm $i$ is affected by the MHSC by the end of year $t$, and zero otherwise. We control for firm- and year-fixed effects in the model, and the coefficient on $MHK$ (namely $\beta_1$) captures the main effect. Following prior studies (e.g., Li et al., 2017; Bradshaw et al., 2019), we also include a vector of control variables in the model. These variables are return on equity ($ROE$), firm size ($Size$), market-to-book ratio ($MB$), fixed assets ($Ppe$), intangible assets ($Intang$), inventories ($Invent$), investment returns ($Eqinc$), leverage ($Lev$), a loss indicator for the prior period ($Loss$), and discretionary accruals ($Dacc$).

3.4 Summary statistics

Table 1 summarizes the statistics for the dependent and independent variables. We report the statistics corresponding to the full sample and the matched sample separately. For the full sample, the sample means of $BTD$, $PERM_{BTD}$, and $DDBTD$ are $-0.006$, $-0.003$, and $-0.008$, respectively, which indicate that the majority of the Chinese listed firms have lower financial income than taxable income. The sample mean of $MHK$ is $0.269$, which indicates that more than one-fourth of the firm-year observations in our sample are affected by the Stock Connect program. In general, the summary statistics on the other variables are comparable to those given in prior studies (e.g., Li et al., 2017).

In Panel B, we show how the value of $MHK$ changes by year, to further illustrate our empirical strategy. These changes indicate that for eligible firms in the SHSC program, $MHK$ takes the value of one for 2014 or later, and zero otherwise. For eligible firms in the SHSC program, $MHK$ takes the value of one for 2016 or later, and zero otherwise. For other A-share listed firms, $MHK$ takes the value of zero.

[Insert Table 1 here]
4. Main Empirical Results

4.1 Baseline results

In Table 2, we present our findings on the relationship between financial market opening and corporate tax avoidance, and we report the estimation results from Equation (4), using three main corporate tax avoidance measures. The coefficients for $MHK$ are negative and significant at better than the 5% level across all three columns, which indicates that the launch of the MHSC mitigates tax avoidance behavior among the eligible firms. In terms of economic significance, the programs’ launch reduces the treatment firms’ tax avoidance behavior (relative to that of the control firms) to 9.6% ($= -0.005/0.052$) of the standard deviation of $BTD$, 6.8% ($= -0.003/0.044$) of the standard deviation of $PERM_BTD$, and 9.8% ($= -0.005/0.051$) of the standard deviation of $DDBTD$. These results indicate that financial market opening can have economically meaningful effects in curtailing corporate tax avoidance.

The directions of the coefficients of the control variables are largely consistent with those found in prior studies (e.g., Khurana and Moser, 2013; Huang et al., 2016; Li et al., 2017) and with our predictions. For example, larger firms, loss firms, and firms with higher discretionary accruals are more likely to avoid paying taxes and falsify their financial reporting.

[Insert Table 2 here]

4.2 Dynamic and parallel tests
To examine whether the parallel-trend hypothesis holds in our difference-in-differences setting, we conduct a dynamic timing test around the program-launch events. Specifically, we decompose the original main explanatory variable $MHK$ into the interaction of the treatment indicator $Treat$ (equals to one if a firm is eventually affected by the MHSC during the sample period, and zero otherwise) and two groups of time dummies: (1) $Before3/Before2/Before1$, which equal one for three years/two years/one year before the events, and (2) $After0/After1/After2/After3$, which equal one for years that are the current year of/one year after/two years after/more than two years after the events. As shown in Table 3, the estimation results indicate that the decrease in corporate tax avoidance occurs only after—not before—the launch of the program, which suggests that the pre-existing trends in corporate tax avoidance for the treatment and the control firms are indistinguishable. In this way, we confirm that our difference-in-differences setting is valid.

[Insert Table 3 here]

To better illustrate the dynamic relation above, we present a graphical analysis in Figure 4. In the figure, the y-axis plots the estimated coefficients (with 95% confidence intervals) on each explanatory variable in the dynamic timing tests above. The x-axis shows the time relative to the launch of the MHSC. It shows that the divergence of tax avoidance between treated and control firms emerge only after the launch of the MHSC.

[Insert Figure 4 here]

4.3 Cross-sectional analysis regarding the empirical setting

In this section, we explore the cross-sectional differences among firms whether the effects of financial market opening on corporate tax avoidance vary across different types of
4.3.1 The role of foreign ownership

In Table 4, we explore variation in the degree of increased foreign ownership. Specifically, we hypothesize that if the observed decreases in corporate tax avoidance are indeed due to the threat of foreign investor monitoring, then the main results should be stronger for firms that actually experience an increase in foreign institutional ownership following these regulatory changes. We split eligible firms into two groups, based on whether the firms experience an increase in foreign institutional ownership following the launch of the programs, and compare the changes in tax avoidance with control groups separately. Consistent with our conjecture above, we document that the decrease in corporate tax avoidance is concentrated in the subgroup that experiences an increase in foreign institutional ownership, which strengthens the underlying channel of our main findings.

[Insert Table 4 here]

4.3.2 The role of equity financing

In Table 5, we consider the role of equity financing. In particular, given that it is difficult to issue additional equity shares on the Chinese stock market, we predict that the main effect should be more pronounced for firms that actually conduct seasoned equity offerings and derive direct benefit from the launch of the programs. Therefore, we split the eligible firms into two groups based on whether the firms conduct seasoned equity offerings following the launch of the programs. Estimation results indicate that the decrease in tax avoidance concentrates in the subgroup that are actually involved in seasoned equity offerings, which is consistent with the conjecture above.
4.4 Cross-sectional analysis regarding firm characteristics

In this section, we further explore the cross-sectional differences in firm characteristics, and we examine whether the effects of financial market opening on corporate tax avoidance vary across different types of firms. By conducting these tests, we are able to determine which firms are more affected by these regulatory changes, which can help to throw light on the potential underlying channels of causation. We conduct three tests of cross-sectional differences. We begin by considering cross-sectional differences in external monitoring, and then examine whether the demand for external financing plays a role. Furthermore, we partition the sample based on the firm–government relation to determine whether the cross-sectional patterns are consistent with our predictions.8

4.4.1 External monitoring

In Table 6, we show our results regarding cross-sectional differences in the degree of external monitoring. We conjecture that as financial market opening can attract foreign investors to the local market and can improve external monitoring, the effect of curtailing tax avoidance should be more prominent for firms that are ex-ante weakly-governed.

We apply two measures of external monitoring. First, given the previous long-standing restrictions on foreign investments in Chinese mainland, we conjecture that firms with foreign owners in the form of QFIIs are under the supervision of foreign investors, and were so even before the launch of Stock Connect. Therefore, we consider whether ex-ante foreign ownership can alleviate the effects of financial market opening on tax avoidance. Second, a

---

8 In the cross-sectional analyses, our results are based on subsample tests. In Appendix D, E, and F, we provide estimation results using the interaction term of the main variable $MHIK$ with the cross-sectional variables. Our main findings remain unchanged.
series of recent studies indicates that analysts play an important role in curtailing corporate
tax avoidance (Allen et al., 2016; Chen and Lin, 2017; Chen et al., 2018). We therefore
partition the sample into two groups, according to the median of the analyst coverage in each
year. The estimation results indicate that the negative effects of financial market opening on
corporate tax avoidance are significant only for firms without foreign ownership ($D_{qii} = 0$).
Additionally, the main effect concentrates in firms with below-median analyst coverage
($D_{ana} = 0$). These findings indicate that external monitoring can alleviate the effect of
financial market opening in curtailing corporate tax avoidance.

[Insert Table 6 here]

4.4.2 Demand for external financing

We also conjecture that because the opening of financial markets facilitates firms’ access
to external capital, the degree of demand for external financing can change the effect of
financial market opening. As indicated by prior studies (Chen et al., 2010; Law and Mills,
2015; Edwards et al., 2016), corporate insiders may pursue tax-planning activities, to
generate additional funds as a substitute for more expensive sources of external financing. As
financial market opening can reduce the cost of external financing, and it can (on average)
relieve financial constraints, we conjecture that the reduction in tax avoidance should be more
prominent in firms that ex-ante have stronger needs for external financing, or that are more
financially constrained.

We measure firms’ demand for external financing in two ways. First, we hypothesize
that financially constrained firms have a higher demand for financing. Therefore, following
Fazzari et al. (1988), Denis and Sibilkov (2009), and Jansen and Tsai (2010), we apply a payout ratio to measure firms’ financial constraints, and we regard firms with below-median payout ratios as being more willing to acquire external financing. Second, we follow previous studies to construct a direct measure of external financing (Demirgüç-Kunt and Maksimovic, 1998), and split the sample into two groups based on the sample median of this measure. The estimation results, given in Table 7, indicate that negative effects are most prominent in firms with stronger financing needs ($D_{pr} = 0$ or $D_{fc} = 1$). In comparison, all of the $MHK$ coefficients are insignificant for groups of firms with weaker dependence on external financing.

[Insert Table 7 here]

4.4.3 Firm-government relation

Based on these arguments, we further consider whether the firm-government relation can make a difference to the effects of financial market opening. This issue is especially important for Chinese listed firms, because they operate in an economy in which government intervention is significant, and political dependency can be crucial in determining firms’ incentives to avoid taxes. We consider two types of firm-government relations. First, we split the sample according to whether the firms are SOEs. Second, we consider the corporate boards’ government connections. Bradshaw et al. (2019) indicates that when the government is a major shareholder of a firm, taxes serve as dividends to the controlling shareholder, which makes the firm less likely to avoid paying taxes. Additionally, because government-connected firms are more likely to enjoy preferential treatment when obtaining
external financing (Khwaja and Mian, 2005; Faccio, 2010), the marginal benefit of mitigating the financial constraints of financial market opening should be lower for these firms. Therefore, we hypothesize that the decrease in tax avoidance should mainly apply to firms without strong government connections.

In Table 8, we report the estimation results, which indicate that the negative effects of financial market opening are concentrated in non-SOEs ($SOE = 0$) and in firms without government connections ($POL = 0$). These firms are, ex-ante, less likely to avoid taxes, and thus they have greater potential to reduce their tax avoidance after the launches of the Stock Connect programs.

[Insert Table 8 here]

5. Further Analyses

5.1 Further evidence on improved governance

In Table 9, to further shed light on the launch of MHSC reducing tax avoidance through improving governance, we employ alternative main measures. Our tests are three folds. First, we change the main explanatory variable to $MHK\_Share$, the fraction of shares owned by Hong Kong and foreign investors through the connect programs. Second, we define a dummy variable, $MHK\_Active$, which equals one if a stock has ever been included in the list of daily top 10 active stocks of the connect programs in a given year, and zero otherwise. Third, according to the arrangement of the connect programs, the HKSCC invest in A shares on behalf of the investors in an account, we define a dummy variable, $MHK\_TopN$, which equals one if HKSCC has ever been the largest 10 shareholders for a firm in a given year, and zero
otherwise. Estimation results indicate that the effect of the connect programs depends on not only whether a stock is eligible for the programs, but also the degree Hong Kong and foreign investors participate in holding and trading the stocks. These findings further indicate that the presence of foreign investors through the MHSC can play an active governance role and help reduce tax avoidance.

[Insert Table 9 here]

5.2 Cost of capital

In Table 10, we show our results concerning the effects of financial market opening on the cost of capital. It is well established in prior studies that financial market opening can reduce the cost of capital (Lucas, 1990; Bekaert and Harvey, 2000; Henry, 2003). Also, as indicated by several prior studies (e.g., Law and Mills, 2015; Edwards et al., 2016), financially constrained firms have a strong tendency to avoid taxes, as they seek to generate internal cash flows as substitutes for expensive external financing. We conjecture that if financial market opening reduces the cost of capital, such effect will be more pronounced for firms with a higher degree of tax avoidance, as those firms should be less likely to avoid taxes due to motives of generating internal cash flows. Following prior studies (Frank and Shen, 2016), we construct Wacc as the main proxy for the cost of external financing. Indeed, we observe that relative to the control firms, the treatment firms have lower costs of capital following the programs’ launch, and this effect is stronger for firms with higher degree of tax avoidance.

[Insert Table 10 here]
5.3 Placebo tests

To further confirm the validity of our difference-in-differences analysis, we conduct three placebo tests. First, we assume that the launch of the MHSC programs occurred three years before the actual event year, and re-estimate baseline regressions. The insignificant coefficients on \textit{MHK} suggest that the pseudo-events do not significantly trigger changes in tax avoidance.

[Insert Table 11 here]

Second, we follow prior studies (e.g., Chetty et al., 2009; La Ferrara et al., 2012) in running simulations that randomize the assignment of treatment firms in our analysis. We perform the baseline estimation on the basis of this simulated sample, and repeat this procedure 1,000 times. We then summarize the regression results obtained from these procedures, and report the distribution in Figure 5. The difference-in-difference estimators, based on the randomized sample, are close to zero across all of the model specifications. Therefore, we cannot reject the null hypothesis that the difference-in-difference estimates obtained from this randomization test are all zero.

[Insert Figure 5 here]

Third, in Table 12, we classify firms that issue H-shares as the treatment group and other firms as the control group. As firms issued H-shares have been invested and monitored by Hong Kong and foreign investors well before the launch of the programs, we conjecture that there should be no observable changes around the launch of the programs. Consistent with the conjecture above, we fail to find significant changes in corporate tax avoidance for the treatment firms relative to the control firms.
5.4 Robustness checks

Last, we test the robustness of our main findings through a series of additional analyses, and report estimation results in Table 13.

In Panel A, as the list of the Stock Connect programs on the Shanghai and Shenzhen stock exchanges is not randomly created, to address the concern that treatment firms may be fundamentally different from the control firms in terms of their main characteristics, we construct a propensity-score matched sample\(^9\). Specifically, we consider that as firm characteristics themselves can change because of financial market openings, we base the sample selection procedure on financial information to start from 2012, which is the beginning of our sample. We start by estimating a logit regression to predict the probability of a given firm’s being affected by the programs. The dependent variable is a dummy that equals one if the firm is affected by the programs by the end of the sample period, and zero otherwise. As stocks that are eligible for the connect programs are representative stocks within industries with relatively large size and outstanding performance, we control for firm size, ROE, Tobin’s Q, and industry-fixed effect in the model. After obtaining estimated propensity scores, we use these scores to perform nearest neighbor matching without replacement, using 0.05 calipers. The matched sample consists of 2,800 treated observations and 2,800 control observations.

In Appendix B, we show that before matching, treated and control firms have significant

\(^9\) In addition, appendix G provides the test results of other matching methods, such as Entropy Balancing Matching and Coarsened Exact Matching and our baseline findings remain unchanged.
differences in several variables, including ROE, Size, Invent, Lev, Loss, and Dacc. However, in the matched sample, nearly all (except for Loss) variables are statistically indistinguishable between treated and control firms, suggesting that propensity-score matching can make treated and control firms more comparable across major observable firm characteristics.

We then report estimation results based on the matched sample. The coefficients for MHK are negative and significant at the 1% level across all three columns with a larger economic magnitude than their corresponding estimates in baseline regressions.

In Panel B, we apply four alternative measures of corporate tax avoidance as dependent variables. The first measure, ETR, is the effective tax rate. The second measure is the cash effective tax rate, Cash_ETR, which is calculated as the current tax expense, minus the end-of-the-year tax payable, plus the start-of-the-year tax payable, divided by pretax income. A higher level of ETR or Cash_ETR indicates a lower degree of tax avoidance. The third measure, LETR, is calculated as the difference between the nominal tax rate and the real tax rate. The last measure, TA_CETR, is the difference between the statutory tax rate and Cash_ETR. A higher level of LETR or TA_CETR indicates a higher degree of tax avoidance. As the effective tax rate and the cash effective tax rate are negatively associated with the tendency to avoid taxes, the positive and significant coefficients on MHK in Columns (1) and (2) buttress our main findings. In Columns (3) and (4), we observe that financial market opening can significantly reduce both LETR and TA_CETR, which is consistent with our prior findings.

In Panel C, we base our tests on an enlarged sample that includes firms that issue H-shares or B-shares, and we re-estimate the baseline model. Although we introduce several
firms that are less likely to be affected by the regulatory reforms involved in financial market opening, the findings given here are quantitatively similar to the baseline results.

In Panel D, we examine the sensitivity of the results to using shorter windows around the events. Specifically, we require that observations of treatment firms within two years around the launch of the programs. Our baseline findings still hold.

In Panel E, we consider alternative specifications of the empirical setting. In Columns (1)–(3), we treat 2014 as the transition year, and drop observations in that year. In Columns (4)–(6), we treat 2014 as the pre-event year. In Columns (7)–(9), we further treat 2016 as the pre-event year for treatment firms in the SZSC program. Our baseline findings remain unchanged for these specifications.

[Insert Table 13 here]

6. Conclusion

In this paper, we examine whether and how financial market opening affects corporate tax avoidance, by exploring the staggered launches of the Chinese SHSC and SZSC programs as quasi-exogenous shocks. By using a difference-in-differences approach, we find that financial market opening significantly curtails corporate tax avoidance. This effect is more prominent for firms with loose external monitoring and a strong need for external financing, and for firms that lack strong government connections. Further analysis indicates that the reduction in tax avoidance coincides with the economic consequences of financial market opening, i.e., lower costs of capital. We confirm the validity of our setting through a series of additional tests.
This paper contributes to the current literature on how financial market opening affects firms’ decisions. Our findings highlight the importance of access to overseas investors for curtailing tax avoidance in local financial markets. We believe that future studies may generate important new insights into how firms’ tax decisions interact with government reforms that are associated with the financial market, especially in the case of emerging markets.
References

Adhikari, A., Derashid, C., Zhang, H., 2006. Public policy, political connections, and effective tax rates: Longitudinal evidence from Malaysia. Journal of Accounting and Public policy 25(5), 574-595.

Allen, A., Francis, B. B., Wu, Q., Zhao, Y., 2016. Analyst coverage and corporate tax aggressiveness. Journal of Banking & Finance 73, 84-98.

Bae, K. H., Goyal, V. K., 2010. Equity market liberalization and corporate governance. Journal of Corporate Finance, 16(5), 609-621.

Bekaert, G., Harvey, C. R., 2000. Foreign speculators and emerging equity markets. Journal of Finance 55, 565-613.

Bekaert, G., Harvey, C. R., Lundblad, C., 2005. Does financial liberalization spur growth? Journal of Financial Economics 77, 3-55.

Bekaert, G., Harvey, C. R., Lundblad, C., Siegel, S., 2007. Global growth opportunities and market integration. Journal of Finance 62, 1081-1137.

Bena, J., Ferreira, M. A., Matos, P., Pires, P., 2017. Are foreign investors locusts? The long-term effects of foreign institutional ownership. Journal of Financial Economics 126, 122-146.

Brennan, M. J., Cao, H. H., 1997. International portfolio investment flows. Journal of Finance 52, 1851-1880.

Bertrand, M., Mullainathan, S., 2003. Enjoying the quiet life? Corporate governance and managerial preferences. Journal of Political Economy 111, 1043-1075.

Bradshaw, M., Liao, G., Ma, M. S., 2019. Agency costs and tax planning when the government is a major shareholder. Journal of Accounting and Economics 67, 255-277.

Burdekin, R. C. K., Siklos, P. L., 2018. Quantifying the impact of the November 2014 Shanghai-Hong Kong Stock Connect. International Review of Economics & Finance 57, 156-163.

Cai, H., Liu, Q., 2009. Competition and corporate tax avoidance: Evidence from Chinese industrial firms. The Economic Journal 119, 764-795.

Chan, M. K., Kwok, S., 2017. Risk-sharing, market imperfections, asset prices: Evidence from China’s stock market liberalization. Journal of Banking & Finance 84, 166-187.

Chari, A., Henry, P. B., 2004. Risk sharing and asset prices: Evidence from a natural experiment. Journal of Finance 59, 1295-1324.

Chari, A., Henry, P. B., 2008. Firm-specific information and the efficiency of investment. Journal of Financial Economics 87, 636-655.

Chen, N. X., Chiu, P. C., Shevlin, T., 2018. Do analysts matter for corporate tax planning? Evidence from a natural experiment. Contemporary Accounting Research 35, 794-829.

Chen, S., Chen, X., Cheng, Q., Shevlin, T., 2010. Are family firms more tax aggressive than non-family firms? Journal of Financial Economics 95, 41-61.

Chen, T., Lin, C., 2017. Does information asymmetry affect corporate tax aggressiveness? Journal of Financial and Quantitative Analysis 52, 2053-2081.

Cheng, C. A., Huang, H. H., Li, Y., Stanfield, J., 2012. The effect of hedge fund activism on corporate tax avoidance. The Accounting Review 87, 1493-1526.
Chetty, R., Looney, A., Kroft, K., 2009. Salience and taxation: Theory and evidence. American Economic Review 99, 1145-1177.

Crocker K. J., Slemrod, J., 2005. Corporate tax evasion with agency costs. Journal of Public Economics 89(9-10), 1593-1610.

Demirgüç-Kunt, A., Maćkšimovic, V., 1998. Law, finance, and firm growth. Journal of Finance 53, 2107-2137.

Denis, D. J., Sibilkov, V., 2009. Financial constraints, investment, and the value of cash holdings. The Review of Financial Studies 23, 247-269.

Desai, M. A., Dharmapala, D., 2006. Corporate tax avoidance and high-powered incentives. Journal of Financial Economics 79, 145-179.

Desai, M. A., Dharmapala, D., 2009. Earnings management, corporate tax shelters, and book-tax alignment. National Tax Journal 62, 169-186.

Desai, M. A., Dyck, A., Zingales, L., 2007. Theft and taxes. Journal of Financial Economics 84, 591-623.

Edwards, A., Schwab, C., Shevlin, T., 2016. Financial constraints and cash tax savings. The Accounting Review 91, 859-881.

Faccio, M., 2010. Differences between politically connected and non-connected firms: A cross-country analysis. Financial Management 39, 905-928.

Fairhurst, D. D., Liu, Y., Ni, X., 2020. Employment protection and tax aggressiveness: Evidence from wrongful discharge laws. Journal of Banking & Finance, 119, 105907.

Fazzari, S., Hubbard, R. G., Petersen, B., 1988. Investment, financing decisions, and tax policy. The American Economic Review 78, 200-205.

Ferreira, M. A., Laux, P. A., 2007. Corporate governance, idiosyncratic risk, and information flow. Journal of Finance 62, 951-989.

Ferreira, M. A., Matos, P., 2008. The colors of investors’ money: The role of institutional investors around the world. Journal of Financial Economics 88, 499-533.

Fischer, S., 2003. Globalization and its challenges. American Economic Review 93, 1-30.

Frank, M. M., Lynch, L. J., Rego, S. O., 2009. Tax reporting aggressiveness and its relation to aggressive financial reporting. The Accounting Review 84, 467-496.

Frank, M. Z., Shen, T., 2016. Investment and the weighted average cost of capital. Journal of Financial Economics 119, 300-315.

Giannetti, M., Liao, G., Yu, X., 2015. The brain gain of corporate boards: Evidence from China. Journal of Finance 70, 1629-1682.

Gormley, T. A., Kim, B. H., Martin, X., 2012. Do firms adjust their timely loss recognition in response to changes in the banking industry? Journal of Accounting Research 50, 159-196.

Gul, F. A., Kim, J. B., Qiu, A. A., 2010. Ownership concentration, foreign shareholding, audit quality, and stock price synchronicity: Evidence from China. Journal of Financial Economics 95, 425-442.

Gupta, N., Yuan, K., 2009. On the growth effect of stock market liberalizations. Review of Financial Studies 22, 4715-4752.

Hartzell, J. C., Starks, L. T., 2003. Institutional investors and executive compensation. Journal of Finance 58, 2351-2374.

Henry, P. B., 2000. Stock market liberalization, economic reform, and emerging market
equity prices. Journal of Finance 55, 529-564.
Henry, P. B., 2003. Capital-account liberalization, the cost of capital, and economic growth American Economic Review 93, 91-96.
Henry, P. B., 2007, Capital account liberalization: Theory, evidence, and speculation. Journal of Economic Literature 45, 887-935.
Huang, H. H., Lobo, G. J., Wang, C., Xie, H., 2016. Customer concentration and corporate tax avoidance. Journal of Banking & Finance 72, 184-200.
Huseynov, F., Sardarli, S., Zhang, W., 2017. Does index addition affect corporate tax avoidance? Journal of Corporate Finance 43, 241-259.
Jansen, D. W., Tsai, C. L., 2010. Monetary policy and stock returns: Financing constraints and asymmetries in bull and bear markets. Journal of Empirical Finance 17, 981-990.
Jiang D, Li W, Shen Y, Yao Z. Market liberalization and tax avoidance: Evidence from the Shanghai-Hong Kong Stock Connect Program in China[J]. Economic Systems, 2020, 44(3): 100811.
Kacperczyk, M., Sundaresan, S., Wang, T., 2021. Do foreign institutional investors improve price efficiency? The Review of Financial Studies 34(3), 1317-1367.
Khan, M., Srinivasan, S., Tan, L., 2017. Institutional ownership and corporate tax avoidance: New evidence. The Accounting Review 92, 101-122.
Khorana, I. K., Moser, W. J., 2013. Institutional shareholders’ investment horizons and tax avoidance. Journal of the American Taxation Association 35, 111-134.
Khwaja, A. I., Mian, A. 2005. Do lenders favor politically connected firms? Rent provision in an emerging financial market. Quarterly Journal of Economics 120, 1371-1411.
Kim, J. B., Li, Y., Zhang, L., 2011. Corporate tax avoidance and stock price crash risk: Firm-level analysis. Journal of Financial Economics 100, 639-662.
Kim, E. H., Lu, Y., 2013. Corporate governance reforms around the world and cross-border acquisitions. Journal of Corporate Finance, 22, 236-253.
Kim, J. B., Yi, C. H., 2015. Foreign versus domestic institutional investors in emerging markets: Who contributes more to firm-specific information flow? China Journal of Accounting Research 8, 1-23.
La Ferrara, E., Chong, A., Duryea, S., 2012. Soap operas and fertility: Evidence from Brazil. American Economic Journal: Applied Economics 4, 1-31.
Larrain, M., Stumpner, S., 2017. Capital account liberalization and aggregate productivity: The role of firm capital allocation. Journal of Finance 72, 1825-1858.
Law, K. K. F., Mills, L. F., 2015. Taxes and financial constraints: Evidence from linguistic cues. Journal of Accounting Research 53, 777-819.
Leuz, C., Triantis, A., Wang, T. Y., 2008. Why do firms go dark? Causes and economic consequences of voluntary SEC deregistrations. Journal of Accounting and Economics, 45(2-3), 181-208.
Levine, R., Zervos, S., 1998. Capital control liberalization and stock market development. World Development 26, 1169-1183.
Li, O. Z., Liu, H., Ni, C., 2017. Controlling shareholders’ incentive and corporate tax avoidance: A natural experiment in China. Journal of Business Finance & Accounting 44, 697-727.
Lin, K. Z., Mills, L. F., Zhang, F., Li, Y., 2018. Do political connections weaken tax
enforcement effectiveness? Contemporary Accounting Research 35, 1941-1972.
Liu, C., Wang, S., Wei, K. C. J, 2021. Demand shock, speculative beta, and asset prices: Evidence from the Shanghai-Hong Kong Stock Connect program. Journal of Banking & Finance, 126, 106102.
Lucas, R. E., 1990. Why doesn’t capital flow from rich to poor countries? American Economic Review 80, 92-96.
Luong, L. H., Moshirian, F., Nguyen, L. H. G., Tian, X., Zhang, B., 2017. How do foreign institutional investors enhance firm innovation? Journal of Financial and Quantitative Analysis 52, 1449-1490.
McGuire, S. T., Wang, D., Wilson, R. J., 2014. Dual class ownership and tax avoidance. The Accounting Review 89, 1487-1516.
Mitton, T., 2006. Stock market liberalization and operating performance at the firm level. Journal of Financial Economics 81, 625-647.
Moshirian, F., Tian, X., Zhang, B., Zhang, W., 2021. Stock market liberalization and innovation. Journal of Financial Economics 139(3), 985-1014.
Piotroski, J. D., Zhang, T., 2014. Politicians and the IPO decision: The impact of impending political promotions on IPO activity in China. Journal of Financial Economics 111, 111-136.
Stulz, R. M., 2005. The limits of financial globalization. Journal of Finance 60, 1595-1638.
Wilson, R. J., 2009. An examination of corporate tax shelter participants. The Accounting Review 84, 969-999.
Figure 1 Timeline of the MHSC Programs

Figure 2 The Dynamics of Foreign Institutional Ownership around the Launch of the MHSC Programs
Figure 3  The Number of Eligible Firms Held by the Hong Kong Securities Clearing Company Limited (Top 10 Shareholders)

Figure 4  Dynamic Trend
Figure 5  Placebo Test
Table 1
Descriptive Statistics

| Panel A       | Summary Statistics                                      |
|---------------|---------------------------------------------------------|
| Variable      | $N$ | mean    | p50  | max    | min    | sd      |
| $BTD$         | 10,659 | -0.006  | -0.004 | 0.194  | -0.251 | 0.052  |
| $PERM$$_BTD$ | 10,659 | -0.003  | 0     | 0.139  | -0.236 | 0.044  |
| $DDBTD$      | 10,659 | -0.008  | -0.005 | 0.191  | -0.249 | 0.051  |
| $MHK$        | 10,659 | 0.269   | 0     | 1      | 0      | 0.443  |
| $ROE$        | 10,659 | 0.062   | 0.066 | 0.411  | -0.832 | 0.132  |
| $Size$       | 10,659 | 22.179  | 22.04 | 25.796 | 19.461 | 1.256  |
| $MB$         | 10,659 | 2.545   | 1.934 | 12.2   | 0.874  | 1.88   |
| $Ppe$        | 10,659 | 0.246   | 0.208 | 0.851  | 0.002  | 0.185  |
| $Intang$     | 10,659 | 0.047   | 0.035 | 0.312  | 0      | 0.05   |
| $Invent$     | 10,659 | 0.154   | 0.116 | 0.736  | 0      | 0.146  |
| $Eqinc$      | 10,659 | 0.008   | 0.002 | 0.111  | -0.009 | 0.017  |
| $Lev$        | 10,659 | 0.436   | 0.425 | 0.941  | 0.051  | 0.213  |
| $Loss$       | 10,659 | 0.083   | 0     | 1      | 0      | 0.276  |
| $Dacc$       | 10,659 | 0.011   | 0.01  | 0.277  | -0.258 | 0.081  |

Panel B   Illustration of MHK Value

|                                | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|--------------------------------|------|------|------|------|------|------|------|
| Eligible firms on the Shanghai Stock Market | 0    | 0    | 1    | 1    | 1    | 1    | 1    |
| Eligible firms on the Shenzhen Stock Market | 0    | 0    | 0    | 0    | 1    | 1    | 1    |
| Other A-share firms             | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

Table 1 presents the descriptive statistics of the main variables used in this paper, based on the sample of listed firms in the A-share market from 2012 to 2018. Panel A provides the results of the summary statistics, and Panel B further illustrates how the value of MHK changes by year. Definitions of all of the variables are provided in Appendix A.
### Table 2
Effects of Financial Market Opening on Tax Avoidance

|        | (1) BTD | (2) PERM_BTD | (3) DDBTD |
|--------|---------|--------------|-----------|
| MHK    | -0.005*** | -0.003**     | -0.005*** |
|        | (-2.70)  | (-2.37)      | (-2.67)   |
| ROE    | 0.002***  | 0.002***     | 0.002***  |
|        | (10.60)  | (12.46)      | (10.61)   |
| Size   | 0.016***  | 0.016***     | 0.016***  |
|        | (11.07)  | (14.05)      | (11.08)   |
| MB     | 0.002***  | 0.002***     | 0.002***  |
|        | (3.17)   | (5.14)       | (3.19)    |
| Ppe    | 0.025***  | 0.021***     | 0.025***  |
|        | (4.66)   | (4.89)       | (4.78)    |
| Intang | -0.036*   | -0.083***    | -0.036*   |
|        | (-1.76)  | (-5.18)      | (-1.77)   |
| Invent | -0.000    | 0.001        | -0.001    |
|        | (-0.00)  | (0.10)       | (-0.07)   |
| Eqinc  | 0.351***  | 0.368***     | 0.352***  |
|        | (9.70)   | (12.81)      | (9.77)    |
| Lev    | -0.087*** | -0.067***    | -0.088*** |
|        | (-16.43) | (-15.97)     | (-16.53)  |
| Loss   | 0.011***  | 0.008***     | 0.010***  |
|        | (5.30)   | (5.06)       | (5.23)    |
| Dacc   | 0.126***  | 0.122***     | 0.110***  |
|        | (18.34)  | (22.51)      | (16.16)   |
| Constant | -0.326*** | -0.332***     | -0.326*** |
|        | (-10.39) | (-13.33)     | (-10.43)  |
| Firm F.E. | Yes     | Yes          | Yes       |
| Year F.E. | Yes     | Yes          | Yes       |
| N      | 10,659   | 10,659       | 10,659    |
| $R^2$  | 0.39     | 0.48         | 0.39      |
| $F$    | 78.699***| 111.559***   | 72.553*** |

Table 2 reports the results of the main regression of financial market opening on corporate tax avoidance. The dependent variables are proxies for tax avoidance, measured as $BTD$, $PERM\_BTD$, and $DDBTD$. The key explanatory variable is $MHK$, which represents whether a firm is eligible for the Mainland–Hong Kong Stock Connect programs. The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The $t$-statistics (shown in parentheses) are based on robust standard errors, clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.
Table 3
Effects of Financial Market Opening on Tax Avoidance: Dynamic Trend

|                  | (1) $BTD$ | (2) $PERM\_BTD$ | (3) $DDBTD$ |
|------------------|-----------|-----------------|-------------|
| $Treat \times Before3$ | -0.000 (-0.01) | -0.003 (-0.96) | -0.000 (-0.02) |
| $Treat \times Before2$ | 0.000 (0.13) | -0.002 (-0.88) | 0.000 (0.11) |
| $Treat \times Before1$ | -0.000 (-0.05) | -0.004 (-1.54) | -0.000 (-0.06) |
| $Treat \times After0$ | -0.005 (-1.60) | -0.008*** (-3.02) | -0.005 (-1.60) |
| $Treat \times After1$ | -0.006* (-1.82) | -0.007*** (-2.79) | -0.006* (-1.81) |
| $Treat \times After2$ | -0.015*** (-4.89) | -0.015*** (-6.24) | -0.015*** (-4.88) |
| $Treat \times After3$ | -0.016*** (-4.17) | -0.017*** (-5.46) | -0.016*** (-4.16) |
| $ROE$ | 0.002*** (10.83) | 0.002*** (12.74) | 0.002*** (10.85) |
| $Size$ | 0.012*** (9.00) | 0.013*** (11.49) | 0.012*** (9.03) |
| $MB$ | 0.001** (2.49) | 0.002*** (4.33) | 0.001** (2.51) |
| $Ppe$ | 0.029*** (5.38) | 0.025*** (5.78) | 0.029*** (5.50) |
| $Intang$ | -0.036* (-1.79) | -0.084*** (-5.22) | -0.036* (-1.80) |
| $Invent$ | 0.005 (0.60) | 0.006 (0.87) | 0.005 (0.53) |
| $Eqinc$ | 0.337*** (9.31) | 0.353*** (12.27) | 0.338*** (9.39) |
| $Lev$ | -0.088*** (-16.43) | -0.068*** (-15.90) | -0.088*** (-16.53) |
| $Loss$ | 0.010*** (5.14) | 0.008*** (4.77) | 0.010*** (5.07) |
| $Dacc$ | 0.128*** (18.64) | 0.125*** (22.90) | 0.112*** (16.46) |
| Constant | -0.256*** (-8.41) | -0.263*** (-10.87) | -0.257*** (-8.46) |
| Firm F.E. | Yes | Yes | Yes |
| Year F.E. | Yes | Yes | Yes |
| $N$ | 10,659 | 10,659 | 10,659 |
| $R^2$ | 0.39 | 0.47 | 0.39 |
Table 3 reports the empirical results regarding the dynamic effects of financial market opening on corporate tax avoidance. The dependent variables are proxies for tax avoidance, measured as $BTD$, $PERM\_BTD$, and $DDBTD$. The key explanatory variables are the seven interaction terms, namely $Treat \times Before3$, $Treat \times Before2$, $Treat \times Before1$, $Treat \times After0$, $Treat \times After1$, $Treat \times After2$, and $Treat \times After3$, where $Treat$ is a dummy variable that equals one if a firm is investible by foreign investors under the Stock Connect programs and zero otherwise, $Before_j$ ($After_j$) indicates that the observation is $j$ years prior to (after) the implementation of the Connect programs. The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The $t$-statistics (shown in parentheses) are based on robust standard errors, clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.
Table 4 reports the results of the regressions of financial market opening on corporate tax avoidance when the foreign shareholdings of eligible firms change differently. The dependent variables are proxies for tax avoidance, measured as $BTD$, $PERM\_BTD$, and $DDBTD$. The key explanatory variable is $MHK$, which indicates whether a firm is eligible for the Mainland–Hong Kong Stock Connect programs. The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects.

|       | (1)          | (2)         | (3)          | (4)          | (5)          | (6)          |
|-------|--------------|-------------|--------------|--------------|--------------|--------------|
|       | $\Delta FO>0$ | $\Delta FO=0$ | $\Delta FO>0$ | $\Delta FO=0$ | $\Delta FO>0$ | $\Delta FO=0$ |
| $MHK$ | -0.009***    | 0.000       | -0.008***    | 0.000        | -0.008***    | -0.001       |
|       | (-4.97)      | (0.10)      | (-5.65)      | (0.02)       | (-4.93)      | (-0.15)      |
| $ROE$ | 0.003***     | 0.720***    | 0.002***     | 0.187***     | 0.003***     | 0.188***     |
|       | (11.60)      | (57.35)     | (13.26)      | (50.91)      | (11.62)      | (38.76)      |
| $Size$| 0.007***     | 0.000       | 0.008***     | 0.005***     | 0.007***     | 0.005***     |
|       | (5.12)       | (0.07)      | (7.52)       | (3.64)       | (5.12)       | (2.80)       |
| $MB$  | 0.001*       | -0.003***   | 0.001***     | -0.001       | 0.001*       | -0.001***    |
|       | (1.76)       | (-5.01)     | (2.99)       | (-1.34)      | (1.78)       | (-2.44)      |
| $Ppe$ | 0.023***     | 0.027***    | 0.020***     | 0.015***     | 0.023***     | 0.038***     |
|       | (4.15)       | (4.44)      | (4.62)       | (2.89)       | (4.26)       | (5.55)       |
| $Intang$ | -0.043**       | -0.001    | -0.092***    | -0.141***    | -0.043**    | -0.112***    |
|       | (-2.05)      | (-0.02)     | (-5.44)      | (-7.27)      | (-2.07)      | (-4.38)      |
| $Invent$ | -0.017*       | 0.007     | -0.012*      | -0.001       | -0.018**    | -0.006       |
|       | (-1.87)      | (0.68)      | (-1.65)      | (-0.07)      | (-1.96)      | (-0.49)      |
| $Eqinc$ | 0.383***       | -0.056    | 0.358***     | 0.148***     | 0.385***     | 0.107***     |
|       | (10.22)      | (-1.46)     | (11.87)      | (4.50)       | (10.29)      | (2.46)       |
| $Lev$ | -0.006***    | -0.001**   | -0.005***    | -0.006***    | -0.007***    | -0.007***    |
|       | (-7.87)      | (-2.22)     | (-8.11)      | (-10.01)     | (-7.87)      | (-8.76)      |
| $Loss$ | 0.007***     | 0.006***    | 0.006***     | 0.002        | 0.007***     | 0.003        |
|       | (3.66)       | (3.20)      | (3.51)       | (1.10)       | (3.58)       | (1.58)       |
| $Dacc$ | 0.146***     | -0.000     | 0.138***     | 0.082***     | 0.131***     | 0.061***     |
|       | (21.06)      | (-0.02)     | (24.78)      | (11.98)      | (18.93)      | (6.85)       |
| $Constant$ | -0.156***     | -0.029    | -0.178***    | -0.126***    | -0.157***    | -0.134***    |
|       | (-5.45)      | (-0.78)     | (-7.73)      | (-3.86)      | (-5.48)      | (-3.11)      |
| Firm F.E. | Yes         | Yes        | Yes         | Yes         | Yes         | Yes         |
| Year F.E. | Yes         | Yes        | Yes         | Yes         | Yes         | Yes         |
| $N$  | 10,116       | 5,504      | 10,116       | 5,504        | 10,116       | 5,504        |
| $R^2$ | 0.12         | 0.51       | 0.16         | 0.48         | 0.11         | 0.34         |
| $F$  | 66.622***    | 310.844*** | 94.529***    | 285.153***   | 60.195***    | 159.743***   |

Diff Test (2)-(1) (4)-(3) (6)-(5)

| Difference | 0.009* | 0.008** | 0.007 |
| $\chi^2$  | 2.79   | 6.21    | 2.30  |

Table 4 reports the results of the regressions of financial market opening on corporate tax avoidance when the foreign shareholdings of eligible firms change differently. The dependent variables are proxies for tax avoidance, measured as $BTD$, $PERM\_BTD$, and $DDBTD$. The key explanatory variable is $MHK$, which indicates whether a firm is eligible for the Mainland–Hong Kong Stock Connect programs. The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The
$t$-statistics (shown in parentheses) are based on robust standard errors, clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.
Table 5
Effect of Financial Market Opening on Tax Avoidance: The Role of Equity Financing

|     | (1) BTD | (2) BTD | (3) PERM_BTD | (4) PERM_BTD | (5) DDBTD | (6) DDBTD |
|-----|---------|---------|--------------|--------------|-----------|-----------|
| SEO | Non-SEO | SEO     | Non-SEO      | SEO          | Non-SEO   | Non-SEO   |
| MHK | -0.007*** | -0.002 | -0.005*** | -0.000 | -0.007*** | -0.002 |
|     | (-2.80) | (-0.86) | (-2.57) | (-0.08) | (-2.79) | (-0.85) |
| ROE | 0.002*** | 0.002*** | 0.002*** | 0.002*** | 0.002*** | 0.002*** |
|     | (9.01) | (10.02) | (9.92) | (10.81) | (8.99) | (10.01) |
| Size | 0.014*** | 0.014*** | 0.012*** | 0.012*** | 0.014*** | 0.014*** |
|     | (8.11) | (8.36) | (8.84) | (9.14) | (8.13) | (8.41) |
| MB | 0.009*** | 0.009*** | 0.011*** | 0.009*** | 0.008*** | 0.009*** |
|     | (7.24) | (7.52) | (11.37) | (9.20) | (6.92) | (7.27) |
| Ppe | 0.019*** | 0.031*** | 0.004 | 0.016*** | 0.020*** | 0.032*** |
|     | (2.90) | (4.64) | (0.86) | (2.95) | (3.05) | (4.81) |
| Intang | -0.079** | -0.106*** | -0.085*** | -0.104*** | -0.078** | -0.104*** |
|     | (-2.33) | (-3.08) | (-4.50) | (-5.40) | (-2.32) | (-3.05) |
| Invent | 0.003 | 0.024*** | -0.000 | 0.010 | 0.002 | 0.023** |
|     | (0.29) | (2.32) | (-0.01) | (1.16) | (0.20) | (2.22) |
| Eqinc | 0.421*** | 0.449*** | 0.408*** | 0.426*** | 0.422*** | 0.449*** |
|     | (9.80) | (11.05) | (12.01) | (13.00) | (9.86) | (11.11) |
| Lev | -0.094*** | -0.093*** | -0.071*** | -0.070*** | -0.094*** | -0.093*** |
|     | (-14.87) | (-15.06) | (-14.28) | (-14.00) | (-14.95) | (-15.14) |
| Loss | 0.008*** | 0.010*** | 0.007*** | 0.007*** | 0.008*** | 0.010*** |
|     | (3.39) | (4.48) | (3.70) | (4.08) | (3.36) | (4.45) |
| Dacc | 0.132*** | 0.129*** | 0.144*** | 0.127*** | 0.114*** | 0.111*** |
|     | (12.80) | (13.01) | (21.92) | (19.78) | (11.12) | (11.26) |
| Constant | -0.267*** | -0.280*** | -0.229*** | -0.245*** | -0.267*** | -0.281*** |
|     | (-7.41) | (-7.85) | (-8.04) | (-8.53) | (-7.45) | (-7.92) |
| Firm F.E. | Yes | Yes | Yes | Yes | Yes | Yes |
| Year F.E. | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 7,818 | 7,800 | 7,818 | 7,800 | 7,818 | 7,800 |
| $R^2$ | 0.14 | 0.15 | 0.22 | 0.20 | 0.13 | 0.14 |
| $F$ | 58.058*** | 63.348*** | 100.664*** | 92.705*** | 54.313*** | 59.361*** |

| Diff Test | (2)-(1) | (4)-(3) | (6)-(5) |
|-----------|---------|---------|---------|
| Difference | 0.005* | 0.005** | 0.005* |
| $\chi^2$ | 2.75 | 4.53 | 2.75 |

Table 5 examines how the impact of financial market opening on corporate tax avoidance is affected by SEOs of eligible firms. The dependent variables are proxies for tax avoidance, measured as $\text{BTD}$, $\text{PERM}_\text{BTD}$, and $\text{DDBTD}$. The key explanatory variable is $\text{MHK}$, which indicates whether a firm is eligible for the Mainland–Hong Kong Stock Connect programs. The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The $t$-statistics (shown in parentheses) are
based on robust standard errors, clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|
|     |     |     |     |     |     |     |     |     |       |       |       |
| **BTD** | **BTD** | **PERM_BTD** | **PERM_BTD** | **DDBTD** | **DDBTD** | **BTD** | **BTD** | **PERM_BTD** | **PERM_BTD** | **DDBTD** | **DDBTD** |
| **Dqfii** | **Dqfii** | **Dqfii** | **Dqfii** | **Dqfii** | **Dqfii** | **Dqfii** | **Dqfii** | **Dqfii** | **Dqfii** | **Dqfii** | **Dqfii** |
| **MHK** | 0.103*** | 0.002*** | 0.098*** | 0.002*** | 0.103*** | 0.002*** | 0.167*** | 0.002*** | 0.169*** | 0.002*** | 0.166*** |
| **ROE** | (8.17) | (10.57) | (12.28) | (12.30) | (8.21) | (10.58) | (20.98) | (7.19) | (31.73) | (8.35) | (20.94) |
| **Size** | 0.007 | 0.013*** | 0.003 | 0.013*** | 0.008 | 0.013*** | 0.000 | 0.015*** | 0.003** | 0.015*** | 0.000 |
| **MB** | -0.004 | -0.001*** | 0.001 | -0.001*** | -0.004 | -0.001*** | 0.010* | -0.023*** | 0.000 | -0.021*** | 0.010* |
| **Ppe** | 0.012 | 0.026*** | 0.050*** | 0.016*** | 0.012 | 0.027*** | 0.001 | 0.038*** | 0.009* | 0.022*** | 0.002 |
| **Intang** | 0.074 | -0.040* | -0.034 | -0.082*** | 0.075 | -0.039* | 0.039 | -0.087*** | -0.018 | -0.130*** | 0.038 |
| **Invent** | -0.105 | -0.002 | -0.037 | -0.003 | -0.107 | -0.003 | -0.015 | -0.002 | 0.000 | -0.006 | -0.016 |
| **Eqinc** | 0.331* | 0.342*** | 0.306** | 0.353*** | 0.327 | 0.343*** | 0.034 | 0.065*** | 0.018 | 0.059*** | 0.033 |
| **Lev** | -0.046 | -0.087*** | -0.024 | -0.068*** | -0.047 | -0.087*** | -0.037*** | -0.100*** | -0.032*** | -0.079*** | -0.037*** |
| **Loss** | 0.023* | 0.010*** | 0.017** | 0.008*** | 0.023* | 0.010*** | 0.011** | 0.015*** | 0.001 | 0.015*** | 0.010*** |
| **Dacc** | 0.056* | 0.130*** | 0.031 | 0.128*** | 0.042 | 0.115*** | 0.030*** | 0.181*** | 0.012* | 0.186*** | 0.015 |
| **Constant** | -0.142 | -0.268*** | -0.073 | -0.250*** | -0.152 | -0.267*** | -0.019 | -0.278*** | -0.081** | -0.271*** | -0.021 |
| **Firm F.E.** | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Year F.E.** | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **N** | 859 | 9,800 | 859 | 9,800 | 859 | 9,800 | 5,090 | 5,569 | 5,090 | 5,569 | 5,090 |

Table 6: Financial Market Opening, External Monitoring, and Tax Avoidance
Table 6 reports the results regarding the impact of external monitoring on the relationship between financial market opening and corporate tax avoidance. Columns (1)–(6) examine the effects from the perspective of QFII shareholding, and Columns (7)–(12) examine the effects from the perspective of analyst coverage. The dependent variables are proxies for tax avoidance, measured as BTD, PERM_BTD, and DDBTD. The key explanatory variable is MHK, which indicates whether a firm is eligible for the Mainland–Hong Kong Stock Connect programs. The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The t-statistics (shown in parentheses) are based on robust standard errors, clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.
|      | (1)     | (2)     | (3)     | (4)     | (5)     | (6)     | (7)     | (8)     | (9)     | (10)    | (11)    | (12)    |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|      | BTD     | BTD     | PERM_BTD| PERM_BTD| DDBTD   | DDBTD   | BTD     | BTD     | PERM_BTD| PERM_BTD| DDBTD   | DDBTD   |
|      | Dpr = 1 | Dpr = 0 | Dpr = 1 | Dpr = 0 | Dpr = 1 | Dpr = 0 | Dpr = 1 | Dpr = 0 | Dpr = 1 | Dpr = 0 | Dpr = 1 | Dpr = 0 |
| MHK  | 0.002   | -0.010***| 0.001   | -0.007***| 0.002   | -0.010***| 0.001   | -0.007***| 0.001   | -0.007***| 0.001   | -0.007***|
| ROE  | 0.002***| 0.002***| 0.002***| 0.002***| 0.002***| 0.002***| 0.002***| 0.002***| 0.002***| 0.002***| 0.002***| 0.002***|
| Size | 0.008***| 0.015***| 0.008***| 0.016***| 0.008***| 0.015***| 0.018***| 0.009***| 0.018***| 0.011***| 0.018***| 0.009***|
| MB   | 0.002***| 0.001   | 0.002***| 0.002***| 0.002***| 0.001   | 0.002***| 0.001   | 0.002***| 0.001   | 0.002***| 0.001   |
| Ppe  | 0.015** | 0.026***| 0.010** | 0.023***| 0.015** | 0.026***| 0.027***| 0.021***| 0.026***| 0.022***| 0.027***| 0.022***|
|      | (2.30)  | (3.86)  | (2.35)  | (4.11)  | (2.39)  | (3.95)  | (3.95)  | (3.07)  | (4.87)  | (3.87)  | (4.03)  | (3.23)  |
| Intang| 0.032  | -0.049**| -0.021  | -0.086***| 0.032  | -0.049**| 0.030  | -0.111***| -0.043**| -0.116**| 0.030  | -0.111**|
| Invent| -0.021*| 0.004   | -0.009  | 0.000   | 0.000   | 0.004   | 0.006  | -0.006  | 0.009   | -0.009  | 0.006   | -0.007  |
| Eqinc| 0.103**| 0.419***| 0.283***| 0.379***| 0.106**| 0.420***| 0.473***| 0.285***| 0.501***| 0.283***| 0.475***| 0.285***|
| Lev  | -0.045***| -0.097***| -0.029***| -0.075***| -0.044***| -0.098***| -0.111***| -0.044***| -0.083***| -0.033***| -0.111***| -0.044***|
| Loss | -0.002  | 0.013***| -0.010***| 0.012***| -0.002  | 0.013***| 0.009***| 0.009***| 0.005** | 0.008***| 0.009***| 0.009***|
| Dacc | 0.031***| 0.175***| 0.019***| 0.177***| 0.016** | 0.160***| 0.145***| 0.101***| 0.140***| 0.099***| 0.129***| 0.086***|
| Constant | 0.006*** | 0.006*** | 0.006*** | 0.006*** | 0.006*** | 0.006*** | 0.006*** | 0.006*** | 0.005*** | 0.008*** | 0.006*** | 0.006***|
|      | (3.93)  | (3.13)  | (6.56)  | (3.66)  | (3.98)  | (3.13)  | (2.73)  | (4.01)  | (2.86)  | (6.55)  | (2.73)  | (4.08)  |
| Firm F.E. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year F.E. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N    | 4,914  | 5,745  | 4,914  | 5,745  | 4,914  | 5,745  | 5,280  | 5,379  | 5,280  | 5,379  | 5,280  | 5,379  |

Table 7: Financial Market Opening, Demand for External Financing, and Tax Avoidance

Financial Market Opening, Demand for External Financing, and Tax Avoidance
Table 7 reports the results regarding the impact of the demand for external financing on the relationship between financial market opening and corporate tax avoidance. Columns (1)–(6) examine the effects from the perspective of the payout ratio, and Columns (7)–(12) examine the effects based on a direct measure, namely the dependence on external financing. The dependent variables are proxies for tax avoidance, measured as $BTD$, $PERM_BTD$, and $DDBTD$. The key explanatory variable is $MHK$, which indicates whether a firm is eligible for the Mainland–Hong Kong Stock Connect programs. The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The $t$-statistics (shown in parentheses) are based on robust standard errors clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| $R^2$ | 0.03 | 0.20 | 0.06 | 0.24 | 0.02 | 0.19 | 0.16 | 0.10 | 0.21 | 0.14 | 0.15 | 0.09 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| $F$   | 8.169*** | 83.347*** | 18.348*** | 103.550*** | 7.354*** | 77.951*** | 58.938*** | 34.529*** | 82.626*** | 49.254*** | 54.949*** | 31.025*** |
| Diff Test | (2)-(1) | (4)-(3) | (6)-(5) | (8)-(7) | (10)-(9) | (12)-(11) |
| Difference | -0.012*** | -0.008*** | -0.012*** | 0.008** | 0.006** | 0.008** |
| $\chi^2$ | 15.67 | 11.78 | 15.77 | 5.66 | 6.43 | 5.70 |
## Table 8

|                  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
|                  | BTD | BTD | PERM_BTD | PERM_BTD | DDBTD | DDBTD | BTD | BTD | PERM_BTD | PERM_BTD | DDBTD | DDBTD |
| **SOE** = 1      |     |     |     |     |     |     |     |     |     |      |      |      |
| **SOE** = 0      |     |     |     |     |     |     |     |     |     |      |      |      |
| **MHK**          | -0.001 | -0.007*** | -0.002 | -0.005*** | -0.001 | -0.007*** | 0.003 | -0.004** | 0.002 | -0.004*** | 0.003 | -0.004*** |
|                  | (-0.61) | (-3.33) | (-0.87) | (-2.93) | (-0.62) | (-3.28) | (0.75) | (-2.39) | (0.94) | (-2.76) | (0.76) | (-2.36) |
| **ROE**          | 0.002*** | 0.003*** | 0.002*** | 0.002*** | 0.003*** | 0.009*** | 0.004*** | 0.009*** | 0.004*** | 0.009*** | 0.004*** | 0.004*** |
|                  | (6.56) | (11.44) | (8.77) | (12.65) | (6.57) | (11.45) | (5.68) | (11.60) | (7.34) | (13.38) | (5.58) | (11.59) |
| **Size**         | 0.000 | 0.010*** | 0.006*** | 0.009*** | 0.000 | 0.010*** | 0.009*** | 0.007*** | 0.004 | 0.010*** | 0.009*** | 0.007*** |
|                  | (0.13) | (6.35) | (3.86) | (7.15) | (0.15) | (6.36) | (2.71) | (4.72) | (1.40) | (8.44) | (2.68) | (4.72) |
| **MB**           | 0.000 | -0.000*** | 0.001** | -0.000*** | 0.000 | -0.000*** | -0.000 | 0.000 | -0.000 | 0.000 | -0.000 | 0.000 |
|                  | (1.04) | (-3.86) | (1.98) | (-4.43) | (1.04) | (-3.82) | (-0.71) | (0.38) | (-0.53) | (1.24) | (-0.71) | (0.39) |
| **Ppe**          | 0.001*** | 0.004*** | -0.001*** | 0.004*** | 0.001*** | 0.003*** | 0.023* | 0.011** | 0.018* | 0.015*** | 0.023* | 0.012** |
|                  | (2.83) | (2.68) | (-4.09) | (3.30) | (2.72) | (2.67) | (1.80) | (2.01) | (1.84) | (3.50) | (1.83) | (2.12) |
| **Intang**       | -0.152*** | -0.013 | -0.173*** | -0.081*** | -0.152*** | -0.011 | -0.097 | -0.033 | -0.160*** | -0.072*** | -0.098 | -0.032 |
|                  | (-3.57) | (-0.41) | (-5.40) | (-3.19) | (-3.59) | (-0.37) | (-1.57) | (-1.12) | (-3.50) | (-3.14) | (-1.60) | (-1.09) |
| **Invent**       | -0.025* | -0.032*** | -0.020* | -0.025*** | -0.025* | -0.033*** | 0.057*** | -0.038*** | 0.057** | -0.034*** | 0.056*** | -0.039*** |
|                  | (-1.78) | (-3.45) | (-1.89) | (-3.23) | (-1.82) | (-3.55) | (3.00) | (-4.27) | (4.04) | (-4.78) | (2.96) | (-4.34) |
| **Eqinc**        | 0.296*** | 0.036*** | 0.318*** | 0.044*** | 0.295*** | 0.036*** | 0.399*** | 0.359*** | 0.337*** | 0.398*** | 0.405*** | 0.360*** |
|                  | (8.68) | (2.60) | (12.46) | (3.94) | (8.70) | (2.61) | (5.32) | (9.17) | (6.04) | (13.00) | (5.42) | (9.22) |
| **Lev**          | -0.045*** | -0.003*** | -0.043*** | -0.002** | -0.045*** | -0.003*** | -0.067*** | -0.006*** | -0.039*** | -0.006*** | -0.067*** | -0.006*** |
|                  | (-12.68) | (-3.13) | (-16.19) | (-2.17) | (-12.76) | (-3.12) | (-5.77) | (-7.76) | (-4.49) | (-8.87) | (-5.80) | (-7.77) |
| **Loss**         | 0.003 | 0.015*** | 0.008*** | 0.008*** | 0.003 | 0.015*** | 0.018*** | 0.004* | 0.011*** | 0.005*** | 0.018*** | 0.004* |
|                  | (1.11) | (6.00) | (4.29) | (3.90) | (1.05) | (5.97) | (3.77) | (1.90) | (3.07) | (2.71) | (3.73) | (1.81) |
| **Dacc**         | 0.082*** | 0.172*** | 0.082*** | 0.160*** | 0.067*** | 0.157*** | 0.058*** | 0.143*** | 0.050*** | 0.135*** | 0.042*** | 0.127*** |
|                  | (7.99) | (22.60) | (10.70) | (25.91) | (6.56) | (20.66) | (4.02) | (20.10) | (4.63) | (24.35) | (2.93) | (18.02) |
| **Constant**     | 0.001 | 0.005*** | 0.003*** | 0.004*** | 0.001 | 0.005*** | 0.008*** | 0.003*** | 0.004* | 0.004*** | 0.008*** | 0.003*** |
|                  | (0.66) | (3.00) | (2.07) | (3.12) | (0.66) | (3.04) | (2.74) | (2.34) | (1.73) | (3.89) | (2.74) | (2.37) |
| **Firm F.E.**    | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Year F.E.**    | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **N**            | 3,717 | 6,942 | 3,717 | 6,942 | 3,717 | 6,942 | 1,628 | 8,015 | 1,628 | 8,015 | 1,628 | 8,015 |

Note: The table presents regression coefficients for various financial market opening, firm–government relationship, and tax avoidance indicators. The coefficients are followed by significance levels: **p < 0.01**, ***p < 0.001**. The table also includes indicators for government relationship, and tax avoidance.
Table 8 reports the results regarding the impact of the firm–government relationship on the relationship between financial market opening and corporate tax avoidance. Columns (1)–(6) examine the effects from the perspective of state ownership, and Columns (7)–(12) examine the effects from the perspective of political connection. The dependent variables are proxies for tax avoidance, measured as BTD, PERM_BTD, and DDBTD. The key explanatory variable is MHK, which indicates whether a firm is eligible for the Mainland–Hong Kong Stock Connect programs. The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The t-statistics (shown in parentheses) are based on robust standard errors clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

| $R^2$ | 0.12 | 0.13 | 0.21 | 0.16 | 0.12 | 0.12 | 0.11 | 0.11 | 0.14 | 0.16 | 0.11 | 0.10 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| $F$  | 30.857*** | 60.646*** | 57.968*** | 78.671*** | 28.943*** | 54.832*** | 12.175*** | 58.075*** | 15.240*** | 92.564*** | 11.317*** | 52.390*** |
| Diff Test | (2)-(1) | (4)-(3) | (6)-(5) | (8)-(7) | (10)-(9) | (12)-(11) |
| Difference | -0.006* | -0.003 | -0.006* | -0.007* | -0.006* | -0.007* |
| $\chi^2$ | 2.84 | 1.92 | 2.71 | 2.90 | 4.89 | 2.87 |
Table 9
Financial Market Opening, Corporate Governance, and Tax Avoidance

Panel A Foreign Shareholdings of Eligible Firms and Tax Avoidance

|                | (1) BTD | (2) PERM_BTD | (3) DDRTD |
|----------------|---------|--------------|-----------|
| **MHK_Share**  | -0.002*** | -0.001*** | -0.002*** |
|                | (-5.06) | (-4.88)     | (-5.04)   |
| **ROE**        | 0.542*** | 0.548*** | 0.541*** |
|                | (26.54) | (35.90)     | (26.61)   |
| **Size**       | 0.002*  | 0.000       | 0.002*    |
|                | (1.66)  | (0.45)      | (1.68)    |
| **MB**         | -0.002*** | -0.002*** | -0.002*** |
|                | (-2.70) | (-3.51)     | (-2.70)   |
| **Ppe**        | 0.017*** | 0.001       | 0.018***  |
|                | (3.02)  | (0.25)      | (3.17)    |
| **Intang**     | 0.035*  | -0.043***   | 0.035*    |
|                | (1.72)  | (-2.84)     | (1.73)    |
| **Invent**     | 0.004   | -0.008      | 0.004     |
|                | (0.44)  | (-1.18)     | (0.41)    |
| **Eqinc**      | 0.093   | 0.124***    | 0.092     |
|                | (1.58)  | (2.83)      | (1.58)    |
| **Lev**        | -0.001  | 0.021***    | -0.001    |
|                | (-0.11) | (3.92)      | (-0.14)   |
| **Loss**       | 0.011** | 0.006       | 0.011**   |
|                | (2.37)  | (1.62)      | (2.37)    |
| **Dacc**       | 0.021   | 0.027***    | 0.007     |
|                | (1.58)  | (2.70)      | (0.55)    |
| **Constant**   | -0.059* | -0.017      | -0.061*   |
|                | (-1.77) | (-0.68)     | (-1.81)   |
| **Firm F.E.**  | Yes     | Yes         | Yes       |
| **Year F.E.**  | Yes     | Yes         | Yes       |
| **N**          | 2,221   | 2,221        | 2,221     |
| **R^2**        | 0.35    | 0.49         | 0.34      |
| **F**          | 37.926*** | 66.954***  | 37.071*** |
## Panel B Active Trading Shares of Eligible Firms and Tax Avoidance

|        | (1) BTD          | (2) PERM_BTD       | (3) DDBTD         |
|--------|------------------|-------------------|------------------|
| MHK_Active | -0.012***       | -0.011***        | -0.012***        |
|         | (-4.79)          | (-6.08)           | (-4.77)          |
| ROE    | 0.496***         | 0.507***          | 0.496***         |
|         | (26.95)          | (38.75)           | (27.05)          |
| Size   | 0.003***         | 0.002**           | 0.003***         |
|         | (3.14)           | (2.28)            | (3.17)           |
| MB     | -0.003           | 0.001             | -0.003           |
|         | (-1.34)          | (1.01)            | (-1.55)          |
| Ppe    | 0.019***         | 0.007*            | 0.021***         |
|         | (3.62)           | (1.87)            | (3.89)           |
| Intang | 0.021            | -0.030**          | 0.021            |
|         | (1.21)           | (-2.44)           | (1.22)           |
| Invent | 0.002            | -0.009            | 0.002            |
|         | (0.18)           | (-1.54)           | (0.18)           |
| Eqinc  | 0.175***         | 0.180***          | 0.177***         |
|         | (3.37)           | (4.89)            | (3.42)           |
| Lev    | -0.001           | 0.017***          | -0.001           |
|         | (-0.11)          | (3.82)            | (-0.16)          |
| Loss   | 0.012**          | 0.003             | 0.012**          |
|         | (2.57)           | (1.03)            | (2.57)           |
| Dacc   | 0.039***         | 0.040***          | 0.024**          |
|         | (3.27)           | (4.77)            | (2.04)           |
| Constant | -0.114***       | -0.076***         | -0.115***        |
|         | (-4.86)          | (-4.55)           | (-4.93)          |
| Firm F.E. | Yes             | Yes               | Yes             |
| Year F.E. | Yes             | Yes               | Yes             |
| N      | 2,864           | 2,864             | 2,864            |
| R²     | 0.31            | 0.48              | 0.31             |
| F      | 51.870***       | 103.338***        | 50.560***        |
Table 9 presents the results whether foreign investors play a key role in the relation between financial market opening and tax avoidance. The dependent variables are proxies for tax avoidance, measured as $BTD$, $PERM\_BTD$, and $DDBTD$. The key explanatory variable are $MHK\_Share$, $MHK\_Active$ and $MHK\_Top10$ in Panel A, Panel B and Panel C, respectively. The sample used in these regressions reflects eligible firms and the period after financial market opening. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The t-statistics (shown in parentheses) are based on robust standard errors clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

|            | (1)  |         | (2)  |         | (3)  |         |
|------------|------|---------|------|---------|------|---------|
|            | $BTD$|         | $PERM\_BTD$|         | $DDBTD$|         |
| $MHK\_Top10$ | -0.012*** | -0.011*** | -0.012*** |
|            | (-4.79) | (-6.08) | (-4.77) |
| $ROE$      | 0.496*** | 0.507*** | 0.496*** |
|            | (26.95) | (38.75) | (27.05) |
| $Size$     | 0.003*** | 0.002**  | 0.003*** |
|            | (3.14)  | (2.28)  | (3.17)  |
| $MB$       | -0.003  | 0.001    | -0.003  |
|            | (-1.34) | (1.01)   | (-1.55) |
| $Ppe$      | 0.019*** | 0.007*   | 0.021*** |
|            | (3.62)  | (1.87)   | (3.89)  |
| $Intang$   | 0.021   | -0.030** | 0.021   |
|            | (1.21)  | (-2.44)  | (1.22)  |
| $Invent$   | 0.002   | -0.009   | 0.002   |
|            | (0.18)  | (-1.54)  | (0.18)  |
| $Eqinc$    | 0.175*** | 0.180*** | 0.177*** |
|            | (3.37)  | (4.89)   | (3.42)  |
| $Lev$      | -0.001  | 0.017*** | -0.001  |
|            | (-0.11) | (3.82)   | (-0.16) |
| $Loss$     | 0.012** | 0.003    | 0.012** |
|            | (2.57)  | (1.03)   | (2.57)  |
| $Dacc$     | 0.039*** | 0.040*** | 0.024** |
|            | (3.27)  | (4.77)   | (2.04)  |
| Constant   | -0.114*** | -0.076*** | -0.115*** |
|            | (-4.86) | (-4.55)  | (-4.93) |
| Firm F.E.  | Yes    | Yes      | Yes    |
| Year F.E.  | Yes    | Yes      | Yes    |
| $N$        | 2,864  | 2,864    | 2,864  |
| $R^2$      | 0.31   | 0.48     | 0.31   |
| $F$        | 51.870*** | 103.338*** | 50.560*** |

| Panel C HKSCC as One of Top 10 Shareholders of Eligible Firms and Tax Avoidance | (1)  | (2)  | (3)  |
|-----------------------------------------------------------------|------|------|------|
| MHK_Share          | (26.95) | (38.75) | (27.05) |
| MHK_Active         | (3.14)  | (2.28)  | (3.17)  |
| MHK_Top10          | (0.18)  | (-1.54) | (0.18)  |
| BTD                | -0.012*** | -0.011*** | -0.012*** |
| PERM_BTD           | -0.001  | 0.017*** | -0.001  |
| DDBTD              | 0.003*** | 0.002**  | 0.003*** |
| ROE                | 0.496*** | 0.507*** | 0.496*** |
| Size               | (3.14)  | (2.28)  | (3.17)  |
| MB                 | -0.003  | 0.001    | -0.003  |
| Ppe                | 0.019*** | 0.007*   | 0.021*** |
| Intang             | 0.021   | -0.030** | 0.021   |
| Invent             | 0.002   | -0.009   | 0.002   |
| Eqinc              | 0.175*** | 0.180*** | 0.177*** |
| Lev                | -0.001  | 0.017*** | -0.001  |
| Loss               | 0.012** | 0.003    | 0.012** |
| Dacc               | 0.039*** | 0.040*** | 0.024** |
| Constant           | -0.114*** | -0.076*** | -0.115*** |
| Firm F.E.          | Yes    | Yes      | Yes    |
| Year F.E.          | Yes    | Yes      | Yes    |
| $N$                | 2,864  | 2,864    | 2,864  |
| $R^2$              | 0.31   | 0.48     | 0.31   |
| $F$                | 51.870*** | 103.338*** | 50.560*** |
Table 10 presents the results regarding the effects of financial market opening and tax avoidance on the cost of capital. The dependent variable is the weighted average cost of capital, namely Wacc. The key explanatory variables in this table are the interaction terms between MHK and BTD, PERM_BTD, DDBTD.
The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The $t$-statistics (shown in parentheses) are based on robust standard errors clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.
Table 11
Robustness: Placebo Test

|       | (1)       | (2)       | (3)       |
|-------|-----------|-----------|-----------|
|       | BTD       | PERM_BTD  | DDBTD     |
| MHK   | 0.000     | 0.001     | 0.001     |
|       | (0.10)    | (0.33)    | (0.28)    |
| ROE   | -0.001*** | -0.001*** | -0.001*** |
|       | (-4.18)   | (-4.19)   | (-4.14)   |
| Size  | 0.013***  | 0.014***  | 0.013***  |
|       | (6.03)    | (8.69)    | (6.16)    |
| MB    | 0.003***  | 0.003***  | 0.003***  |
|       | (3.73)    | (5.34)    | (3.57)    |
| Ppe   | 0.041***  | 0.035***  | 0.032***  |
|       | (6.40)    | (7.44)    | (5.00)    |
| Intang| -0.040*   | -0.061*** | -0.040*   |
|       | (-1.67)   | (-3.53)   | (-1.73)   |
| Invent| -0.006    | 0.015*    | -0.005    |
|       | (-0.56)   | (1.78)    | (-0.45)   |
| Eqinc | 0.315***  | 0.369***  | 0.319***  |
|       | (6.51)    | (10.45)   | (6.72)    |
| Lev   | -0.118*** | -0.106*** | -0.117*** |
|       | (-17.57)  | (-21.62)  | (-17.90)  |
| Loss  | 0.020***  | 0.011***  | 0.018***  |
|       | (7.65)    | (5.90)    | (7.05)    |
| Dacc  | 0.072***  | 0.061***  | 0.054***  |
|       | (8.94)    | (10.37)   | (6.87)    |
| Constant | -0.262*** | -0.280*** | -0.260*** |
|       | (-5.44)   | (-7.99)   | (-5.53)   |
| Firm F.E. | Yes       | Yes       | Yes       |
| Year F.E. | Yes       | Yes       | Yes       |
| N     | 8,899     | 8,899     | 8,899     |
| $R^2$ | 0.34      | 0.43      | 0.34      |
| $F$   | 41.635*** | 62.518*** | 37.903*** |

Table 11 reports the results of the placebo test. We assume that the Stock Connect program started three years before the actual event year. The dependent variables are $BTD$, $PERM\_BTD$, and $DDBTD$, which are proxies for corporate tax avoidance. The key explanatory variable is $MHK$. The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The $t$-statistics (shown in parentheses) are based on robust standard errors clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.
Table 12 presents the results regarding the effects of financial market opening and tax avoidance for cross-listed stocks. The dependent variables are $BTD$, $PERM\_BTD$, and $DDBTD$, which are proxies for corporate tax avoidance. The key explanatory variable is $MHK$. The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The $t$-statistics (shown in parentheses) are based on robust standard errors clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

|       | (1) $BTD$ | (2) $PERM\_BTD$ | (3) $DDBTD$ |
|-------|-----------|-----------------|-------------|
| $MHK$ | -0.001    | -0.000          | -0.001      |
|       | (-0.16)   | (-0.03)         | (-0.13)     |
| $ROE$ | 0.002***  | 0.002***        | 0.002***    |
|       | (8.88)    | (9.29)          | (8.93)      |
| $Size$| 0.014***  | 0.013***        | 0.014***    |
|       | (6.19)    | (6.99)          | (6.23)      |
| $MB$  | -0.001    | -0.001          | -0.001      |
|       | (-1.56)   | (-1.27)         | (-1.50)     |
| $Ppe$ | 0.058***  | 0.034***        | 0.058***    |
|       | (7.06)    | (4.93)          | (7.12)      |
| $Intang$ | -0.095*** | -0.126***      | -0.095***  |
|       | (-3.24)   | (-5.12)         | (-3.25)     |
| $Invent$ | 0.012     | 0.015           | 0.012       |
|       | (0.93)    | (1.34)          | (0.88)      |
| $Eqinc$ | 0.485***  | 0.486***        | 0.485***    |
|       | (9.66)    | (11.55)         | (9.71)      |
| $Lev$ | -0.093*** | -0.081***       | -0.093***   |
|       | (-12.19)  | (-12.69)        | (-12.28)    |
| $Loss$ | 0.012***  | 0.009***        | 0.011***    |
|       | (4.71)    | (4.41)          | (4.64)      |
| $Dacc$ | 0.151***  | 0.155***        | 0.135***    |
|       | (14.72)   | (17.98)         | (13.23)     |
| $Constant$ | -0.278*** | -0.260***       | -0.280***   |
|       | (-5.75)   | (-6.42)         | (-5.82)     |
| Firm F.E. | Yes       | Yes             | Yes         |
| Year F.E. | Yes       | Yes             | Yes         |
| $N$   | 5,120     | 5,120           | 5,120       |
| $R^2$ | 0.43      | 0.49            | 0.42        |
| $F$   | 55.245*** | 71.582***       | 51.769***   |
Table 13
Robustness: Other Robustness Checks

Panel A  Propensity Score Matching

|     | (1)         | (2)         | (3)         |
|-----|-------------|-------------|-------------|
|     | BTD         | PERM_BTD    | DDBTD       |
| MHK | -0.010***   | -0.007***   | -0.010***   |
|     | (-4.06)     | (-4.00)     | (-4.02)     |
| Controls | Yes | Yes | Yes |
| Firm F.E. | Yes | Yes | Yes |
| Year F.E. | Yes | Yes | Yes |
| N   | 5,600       | 5,600       | 5,600       |
| R²  | 0.35        | 0.43        | 0.35        |
| F   | 38.314***   | 55.063***   | 35.200***   |

Panel B  Alternative Measures of Tax Avoidance

|     | (1)         | (2)         | (3)         | (4)         |
|-----|-------------|-------------|-------------|-------------|
|     | ETR         | Cash_ETR    | LEKR        | TA_CETR     |
| MHK | 0.011*      | 0.023**     | -0.009***   | -0.022**    |
|     | (1.87)      | (2.09)      | (-2.74)     | (-2.02)     |
| Controls | Yes | Yes | Yes | Yes |
| Firm F.E. | Yes | Yes | Yes | Yes |
| Year F.E. | Yes | Yes | Yes | Yes |
| N   | 10,659      | 10,144      | 10,659      | 10,144      |
| R²  | 0.34        | 0.24        | 0.65        | 0.24        |
| F   | 16.125***   | 6.678***    | 6.621***    | 7.263***    |

Panel C  Enlarged Sample

|     | (1)         | (2)         | (3)         |
|-----|-------------|-------------|-------------|
|     | BTD         | PERM_BTD    | DDBTD       |
| MHK | -0.005***   | -0.003***   | -0.004***   |
|     | (-2.78)     | (-2.65)     | (-2.74)     |
| Controls | Yes | Yes | Yes |
| Firm F.E. | Yes | Yes | Yes |
| Year F.E. | Yes | Yes | Yes |
| N   | 12,067      | 12,067      | 12,067      |
| R²  | 0.38        | 0.46        | 0.37        |
| F   | 87.051***   | 123.137***  | 80.289***   |

Panel D  Event Window (-2,+2)

|     | (1)         | (2)         | (3)         |
|-----|-------------|-------------|-------------|
|     | BTD         | PERM_BTD    | DDBTD       |
| MHK | -0.004*     | -0.003**    | -0.004*     |
|     | (-1.96)     | (-2.32)     | (-1.93)     |
| Controls | Yes | Yes | Yes |
| Firm F.E. | Yes | Yes | Yes |
| Year F.E. | Yes | Yes | Yes |
| N   | 7,196       | 7,196       | 7,196       |
| $R^2$ | 0.43 | 0.52 | 0.43 |
|------|------|------|------|
| $F$  | 47.593*** | 64.106*** | 44.514*** |
Panel E  Alternative Specifications of Key Explanatory Variable

|                  | (1)          | (2)        | (3)        | (4)          | (5)        | (6)        | (7)          | (8)        | (9)        |
|------------------|--------------|------------|------------|--------------|------------|------------|--------------|------------|------------|
|                  | Exclude Firm-year Observations in 2014 | Treat 2014 as Pre-event Year | Treat 2014 and 2016 as Pre-event Years |
| Controls         | Yes          | Yes        | Yes        | Yes          | Yes        | Yes        | Yes          | Yes        | Yes        |
| Firm F.E.        | Yes          | Yes        | Yes        | Yes          | Yes        | Yes        | Yes          | Yes        | Yes        |
| Year F.E.        | Yes          | Yes        | Yes        | Yes          | Yes        | Yes        | Yes          | Yes        | Yes        |
| N                | 9,155        | 9,155      | 9,155      | 10,659       | 10,659     | 10,659     | 10,659       | 10,659     | 10,659     |
| $R^2$            | 0.42         | 0.48       | 0.41       | 0.39         | 0.47       | 0.39       | 0.39         | 0.47       | 0.39       |
| $F$              | 73.205***    | 99.189***  | 67.425***  | 78.840***    | 110.516*** | 72.650***  | 78.761***    | 110.226*** | 72.576***  |

Table 13 reports the results of the other robustness tests. Panel A reports the results based on the sample constructed by the propensity score matching method. Panel B shows the results of alternative measures of corporate tax avoidance. Panel C presents the results based on an enlarged sample that includes firms that issue H-shares or B-shares. Panel D shows the results when using event window (-2,+2) around the date that a stock becomes eligible for the Stock Connect. Panel E provides several alternative specifications of the key explanatory variable. The dependent variables are proxies for tax avoidance. The key explanatory variable is MHK. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The $t$-statistics (shown in parentheses) are based on robust standard errors clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.
### Appendix A

#### Variable Definitions

| Variable      | Definition                                                                                                                                                                                                 |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BTD           | Book-tax difference, the ratio of the (pretax income-current tax expense/statutory tax rate) to the total assets at the beginning of the year                                                                       |
| PERM_BTD      | Permanent book-tax difference, the ratio of the (pretax income – (the current tax expense + the deferred tax expense) / the statutory tax rate) to the total assets at the beginning of the year |
| DDBTD         | Residual book-tax difference, or the residual of the following regression: $BTD = \delta_0 + \delta_1Taccv + \zeta$, where $TACC$ represents total accruals                                                        |
| ETR           | Effective tax rate, calculated as current tax expense divided by pretax income                                                                                                                             |
| LERT          | Statutory tax rate minus effective tax rate                                                                                                                                                    |
| Cash_ETR      | Cash effective tax rate, calculated as current tax expense, minus end-of-the-year tax payable, plus the start-of-the-year tax payable divided by pretax income                                               |
| TA_CETR       | Statutory tax rate minus Cash_ETR                                                                                                           |
| MHK           | Dummy variable that equals one if a firm is affected by the MHSC in a given year, and zero otherwise                                                                                                     |
| Treat         | Dummy variable that equals one if a firm is eventually affected by the MHSC during the sample period, and zero otherwise                                                                               |
| ROE           | Return on equity, calculated as net income divided by net assets                                                                             |
| Size          | Natural logarithm of a firm’s total assets                                                                                                                               |
| MB            | Market-to-book ratio, measured as the market value of equity divided by the book value of equity                                                                                          |
| Ppe           | Amount of tangible assets, measured as the percentage of fixed assets in the total assets                                                                                                      |
| Intang        | Amount of intangible assets, measured as the percentage of intangible assets in the total assets                                                                  |
| Invent        | Inventory intensity, measured as the proportion of inventory to total assets                                                                                                                        |
| Eqinc         | Return on investment, measured as the proportion of investment income to total assets                                                                                                                  |
| Lev           | Firm leverage, measured as total liabilities divided by total assets                                                                                                                             |
| Loss          | Indicator that equals one if the firm’s net income is negative in the prior year, and zero otherwise                                                                                                 |
| Dacc          | Discretionary accruals, measured as the residual of the Jones model                                                                                                                                  |
| Dqfii         | Dummy variable: one for firms with foreign ownership in the form of a QFII, and zero otherwise                                                                                                          |
| Dana          | Dummy variable: one for firms with higher analyst coverage, and zero otherwise, according to the median of analyst coverage for each year                                                              |
| Dpr           | Dummy variable: one for firms with a higher payout ratio, and zero otherwise, according to the median of the dividend payout ratio within each year                                                          |
| Dfc           | Dummy variable: one for firms with higher external financing need, and zero otherwise, according to the median of financing need within each year, where external financing need is measured following Demirgüç-Kunt and Maksimovic (1998) |
| SOE           | Dummy variable: one if the firm is state-owned, and zero otherwise                                                                                                                                   |
| POL           | Dummy variable: one for firms with a chairperson or CEO having government or military working experience, and zero otherwise                                                                            |
| MHK_Share     | Foreign ownership of eligible firms, calculated as foreign shareholdings divided by firm’s total shareholdings                                                                                          |
| MHK_Active    | Dummy variable: one for firms whose stocks has ever been active trading shares by foreign investors at least once, and zero otherwise                                                                        |
| MHK_Top10     | Dummy variable: one if HKSCC is one of the firm’s top 10 shareholders, and zero otherwise.                                                                                                              |
| Wacc          | Weighted average cost of capital                                                                                                                                                                     |
| Beta          | Beta coefficient, calculated according to the capital asset pricing model                                                                                                                             |
| Treat         | Dummy variable: one for treatment firms, and zero otherwise.                                                                                                                                       |
| Post          | Dummy variable: one for years after financial market opening, and zero otherwise.                                                                                                                  |
Appendix B
Comparability of the Matched Sample

Panel A  The Extent of Balancing of the Variables between the Two Groups

| Variable | Unmatched/Matched | Mean | %bias | t-test | p > |t| |
|----------|-------------------|------|-------|--------|------|----|
|          |                   | Treatment | Control |        |      |    |
| **ROE**  | Unmatched         | 0.101 | 0.063 | 10.4  | 2.11 | 0.035*** |
|          | Matched           | 0.094 | 0.092 | 0.4   | 0.05 | 0.963 |
| **Size** | Unmatched         | 22.169 | 21.280 | 77.70 | 14.95 | 0.000*** |
|          | Matched           | 21.563 | 21.658 | -8.40 | -1.50 | 0.133 |
| **MB**   | Unmatched         | 2.108 | 2.328 | 3.40  | -0.69 | 0.492 |
|          | Matched           | 2.370 | 2.192 | 2.70  | 0.33  | 0.743 |
| **Ppe**  | Unmatched         | 0.253 | 0.496 | -7.5  | -1.53 | 0.127 |
|          | Matched           | 0.242 | 0.648 | -12.6 | -1.48 | 0.140 |
| **Intang** | Unmatched    | 0.046 | 0.049 | -4.4  | -0.85 | 0.395 |
|          | Matched           | 0.046 | 0.046 | -0.9  | -0.15 | 0.879 |
| **Invent** | Unmatched   | 0.166 | 0.152 | 11.00 | 2.09  | 0.037* |
|          | Matched           | 0.154 | 0.149 | 3.80  | 0.60  | 0.549 |
| **Eqinc** | Unmatched     | 0.005 | 0.006 | -4.80 | -0.94 | 0.348 |
|          | Matched           | 0.005 | 0.006 | -7.40 | -1.14 | 0.256 |
| **Lev**  | Unmatched         | 0.387 | 0.474 | -19.60 | -3.63 | 0.000*** |
|          | Matched           | 0.432 | 0.454 | -5.00 | -0.98 | 0.328 |
| **Loss** | Unmatched         | 0.024 | 0.115 | -36.30 | -7.25 | 0.000*** |
|          | Matched           | 0.037 | 0.124 | -34.70 | -4.79 | 0.000*** |
| **Dacc** | Unmatched         | 0.014 | 0.006 | 9.80  | 1.90  | 0.057* |
|          | Matched           | 0.016 | 0.010 | 6.90  | 1.03  | 0.303 |

Panel B  Covariate Imbalance

| Sample | Ps R^2 | LR chi^2 | p > chi^2 | MeanBias | MedBias |
|--------|--------|----------|------------|----------|---------|
| Unmatched | 0.110 | 229.98 | 0.000 | 30.5 | 10.4 |
| Matched   | 0.002 | 2.30  | 0.512 | 3.8  | 2.7  |

Appendix B compares the extent of balancing between the two samples before and after performing propensity score matching. Panel A gives the results on the extent of balancing the variables between the two groups, and Panel B further provides the covariate imbalance. Definitions of all variables are provided in Appendix A.
### Appendix C

**Effects of Financial Market Opening on Seasoned Equity Offering (SEO)**

|        | (1)      | (2)       |
|--------|----------|-----------|
|        | Logit    | OLS       |
| Treat  | -0.339*** |           |
|        | (-4.32)  |           |
| MHK    | 0.244***  | 0.038***  |
|        | (2.77)   | (3.47)    |
| ROE    | -0.003   | -0.001    |
|        | (-0.29)  | (-0.55)   |
| Size   | 0.139***  | 0.026***  |
|        | (5.25)   | (2.87)    |
| MB     | -0.089*** | 0.005*    |
|        | (-6.00)  | (1.80)    |
| Ppe    | 0.761***  | 0.244***  |
|        | (5.52)   | (7.33)    |
| Intang | 2.565***  | 0.083     |
|        | (5.82)   | (0.66)    |
| Invent | -0.542*** | -0.089    |
|        | (-2.65)  | (-1.57)   |
| Eqinc  | -6.448*** | -0.038    |
|        | (-5.01)  | (-0.17)   |
| Lev    | 0.175     | -0.203*** |
|        | (1.41)   | (-6.14)   |
| Loss   | -0.051    | 0.008     |
|        | (-0.64)  | (0.67)    |
| Dacc   | 1.189***  | 0.053     |
|        | (4.52)   | (1.24)    |
| Constant | -3.043*** | -0.066    |
|        | (-5.21)  | (-0.34)   |
| Industry F.E. | Yes | No |
| Firm F.E.   | No   | Yes |
| Year F.E.   | Yes  | Yes |
| N           | 10,659 | 10,659   |
| Pseudo $R^2$ / $R^2$ | 0.05 | 0.75 |
| $\chi^2 / F$ | 669.094*** | 11.678*** |

This table reports the results of the regressions of financial market opening on corporate seasoned equity offering. The dependent variables are proxies for seasoned equity offering, measured as a dummy variable that equals one when a firm issuing new shares at least once after financial market opening. The key explanatory variable is MHK, which represents whether a firm is eligible for the Mainland–Hong Kong Stock Connect programs. The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm(industry)-fixed effects and year-fixed effects. The $t$($z$)-statistics (shown in parentheses) are based on.
robust standard errors, clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.
This table reports the results regarding the impact of external monitoring on the relation between financial market opening and corporate tax avoidance. The dependent variables are proxies for tax avoidance, measured as $BTD$, $PERM\_BTD$, and $DDBTD$. The key explanatory variable are the interaction terms, $MHK$. 

|                    | (1)    |     | (2)    |     | (3)    |     | (4)    |     | (5)    |     | (6)    |     |
|--------------------|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|
|                    | $BTD$  | $PERM\_BTD$ | $DDBTD$ | $BTD$  | $PERM\_BTD$ | $DDBTD$ | $BTD$  | $PERM\_BTD$ | $DDBTD$ | $BTD$  | $PERM\_BTD$ | $DDBTD$ |
| $MHK$              | -0.018*| -0.014| -0.018*| -0.010***| -0.006***| -0.010***| (-1.68) | (-1.28) | (-1.67) | (-4.03) | (-3.01) | (-4.03) |
|                    |        |     |        |     |        |     |        |     |        |     |        |     |
| $MHK \times QFII$  | 0.011* | 0.005| 0.011* | (1.79) | (1.05) | (1.80) | 0.008***| 0.004** | 0.008***| (3.02) | (2.01) | (3.02) |
|                    |        |     |        |     |        |     |        |     |        |     |        |     |
| $MHK \times Dana$  |        |     |        |     |        |     |        |     |        |     |        |     |
| $QFII$             | -0.003 | 0.001| -0.003 | (-0.59) | (0.35) | (-0.61) | 0.001  | 0.005***| 0.001  | (0.65) | (3.68) | (0.65) |
| $Dana$             |        |     |        |     |        |     |        |     |        |     |        |     |
| $ROE$              | 0.845***| 0.871***| 0.841***| 0.002***| 0.002***| 0.002***| (8.97) | (9.06) | (9.06) | (10.76) | (12.62) | (10.76) |
| $Size$             | 0.021* | 0.013| 0.020* | (1.67) | (1.09) | (1.67) | 0.001***| 0.014***| 0.015***| (10.13) | (12.27) | (10.13) |
| $MB$               | -0.013**| -0.013*| -0.013**| 0.001***| 0.002***| 0.001***| (-2.12) | (-1.88) | (-2.12) | (3.04) | (4.63) | (3.04) |
| $Ppe$              | 0.319* | 0.399*| 0.315* | (1.87) | (1.91) | (1.88) | 0.022***| 0.018***| 0.022***| (4.19) | (4.31) | (4.19) |
| $Intang$           | -0.183 | -0.375**| -0.178| -0.033| -0.080***| -0.033| (-0.98) | (-2.15) | (-0.96) | (-1.62) | (-4.94) | (-1.62) |
| $Invent$           | 0.088* | 0.056| 0.086* | (1.65) | (0.96) | (1.65) | -0.002 | -0.001 | -0.002 | (-0.20) | (-0.16) | (-0.20) |
| $Eqinc$            | 1.393  | 1.386| 1.372  | (1.64) | (1.64) | (1.64) | 0.079***| 0.078***| 0.079***| (7.10) | (8.72) | (7.10) |
| $Lev$              | -0.120**| -0.034| -0.119**| -0.086***| -0.066***| -0.086***| (-2.32) | (-0.64) | (-2.33) | (-16.13)| (-15.41)| (-16.13) |
| $Loss$             | 0.007  | 0.016| 0.007  | (0.43) | (0.81) | (0.42) | 0.012***| 0.010***| 0.012***| (6.22) | (6.50) | (6.22) |
| $Dacc$             | -0.116*| -0.028| -0.132*| 0.131***| 0.129***| 0.131***| (-1.71) | (-0.39) | (-1.95) | (17.91) | (22.14) | (17.91) |
| $Constant$         | -0.503*| -0.381| -0.499*| -0.304***| -0.297***| -0.304***| (-1.78) | (-1.33) | (-1.79) | (-9.49) | (-11.65)| (-9.49) |
| Firm F.E.          | Yes    | Yes | Yes    | Yes   | Yes    | Yes   | Yes    | Yes   | Yes    | Yes   | Yes    | Yes   |
| Year F.E.          | Yes    | Yes | Yes    | Yes   | Yes    | Yes   | Yes    | Yes   | Yes    | Yes   | Yes    | Yes   |
| $N$                | 10,659 | 10,659| 10,659 | 10,659 | 10,659 | 10,659 | 10,659 | 10,659 | 10,659 |
| $R^2$              | 0.36   | 0.33 | 0.36   | 0.39   | 0.47   | 0.39   | 11.719***| 10.840***| 11.640***| 65.392***| 91.504***| 65.392*** |

This table reports the results regarding the impact of external monitoring on the relation between financial market opening and corporate tax avoidance. The dependent variables are proxies for tax avoidance, measured as $BTD$, $PERM\_BTD$, and $DDBTD$. The key explanatory variable are the interaction terms, $MHK$. 

**Notes:**
- $*$ denotes significance at the 10% level.
- $**$ denotes significance at the 5% level.
- $***$ denotes significance at the 1% level.
The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The t-statistics (shown in parentheses) are based on robust standard errors, clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.
## Appendix E

### Financial Market Opening, Demand for External Financing, and Tax Avoidance

|                | (1) BTD | (2) PERM_BTD | (3) DDBTD | (4) BTD | (5) PERM_BTD | (6) DDBTD |
|----------------|---------|--------------|-----------|---------|--------------|-----------|
| **MHK**        | -0.007*** | -0.005***    | -0.007*** | -0.004* | -0.003*      | -0.004*   |
|                | (-2.96)  | (-2.40)      | (-2.93)   | (-1.90) | (-1.85)      | (-1.90)   |
| **MHK × Dpr**  | 0.004*   | 0.004*       | 0.004*    |         |              |           |
|                | (1.80)   | (1.86)       | (1.78)    |         |              |           |
| **MHK × Dfc**  |         |              |           | -0.003  | -0.001       | -0.003    |
|                |         |              |           | (-1.32) | (-0.67)      | (-1.33)   |
| **Dpr**        | 0.002    | 0.005***     | 0.002     |         |              |           |
|                | (1.34)   | (4.68)       | (1.38)    |         |              |           |
| **Dfc**        |         |              |           | -0.008*** | -0.011***    | -0.008*** |
|                |         |              |           | (-6.20) | (-11.66)     | (-7.02)   |
| **ROE**        | 0.002*** | 0.002***     | 0.002***  | 0.003*** | 0.002***     | 0.003***  |
|                | (2.63)   | (2.71)       | (2.65)    | (11.39) | (10.83)      | (11.33)   |
| **Size**       | 0.016*** | 0.016***     | 0.016***  | 0.013*** | 0.014***     | 0.012***  |
|                | (7.27)   | (8.50)       | (7.30)    | (8.83)  | (12.49)      | (8.61)    |
| **MB**         | 0.002**  | 0.002***     | 0.002**   | 0.002*** | 0.002***     | 0.002***  |
|                | (2.27)   | (3.63)       | (2.29)    | (3.18)  | (5.50)       | (3.37)    |
| **Ppe**        | 0.024**  | 0.020***     | 0.025**   | 0.027*** | 0.023***     | 0.024***  |
|                | (2.49)   | (2.72)       | (2.56)    | (4.86)  | (5.34)       | (4.49)    |
| **Intang**     | -0.035   | -0.082***    | -0.035    | -0.033* | -0.067***    | -0.035**  |
|                | (-1.00)  | (-3.14)      | (-1.01)   | (-1.91) | (-4.94)      | (-2.07)   |
| **Invent**     | -0.000   | 0.000        | -0.001    | -0.027*** | -0.026***    | -0.034*** |
|                | (-0.04)  | (0.03)       | (-0.09)   | (-3.05) | (-3.64)      | (-3.82)   |
| **Eqinc**      | 0.354*** | 0.373***     | 0.355***  | 0.318*** | 0.052***     | 0.043***  |
|                | (6.00)   | (8.39)       | (6.04)    | (8.68)  | (4.59)       | (3.01)    |
| **Lev**        | -0.086*** | -0.065***    | -0.086*** | -0.006*** | -0.003***    | -0.004*** |
|                | (-10.49) | (-8.84)      | (-10.58)  | (-7.57) | (-3.48)      | (-4.22)   |
| **Loss**       | 0.011*** | 0.008***     | 0.010***  | 0.008*** | 0.007***     | 0.009***  |
|                | (3.84)   | (3.56)       | (3.80)    | (3.79)  | (4.54)       | (4.62)    |
| **Dacc**       | 0.125*** | 0.122***     | 0.110***  | 0.136*** | 0.136***     | 0.129***  |
|                | (11.36)  | (13.32)      | (10.00)   | (21.10) | (26.77)      | (20.21)   |
| **Constant**   | -0.332*** | -0.335***    | -0.332*** | -0.282*** | -0.311***    | -0.274*** |
|                | (-6.84)  | (-8.22)      | (-6.88)   | (-8.92) | (-12.36)     | (-8.66)   |
| **Firm F.E.**  | Yes      | Yes          | Yes       | Yes     | Yes          | Yes       |
| **Year F.E.**  | Yes      | Yes          | Yes       | Yes     | Yes          | Yes       |
| **N**          | 10,659   | 10,659       | 10,659    | 10,659  | 10,659       | 10,659    |
| **R^2**        | 0.39     | 0.48         | 0.39      | 0.38    | 0.46         | 0.37      |
| **F**          | 23.880*** | 28.634***    | 22.045*** | 61.823*** | 89.055***    | 52.245*** |

This table reports the results regarding the impact of demand for external financing on the relation between financial market opening and corporate tax avoidance. The dependent variables are proxies for tax avoidance, measured as BTD, PERM_BTD, and DDBTD. The key explanatory variable are the interaction...
terms, $MHK \times Dpr$ and $MHK \times Dfc$. The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The t-statistics (shown in parentheses) are based on robust standard errors, clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.
### Appendix F

#### Financial Market Opening, Firm–government Relationship, and Tax Avoidance

|                | (1)          | (2)          | (3)          | (4)          | (5)          | (6)          |
|----------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                | BTD          | PERM_BTD     | DDBTD        | BTD          | PERM_BTD     | DDBTD        |
| MHK            | -0.007***    | -0.005***    | -0.007***    | -0.016***    | -0.009***    | -0.016***    |
|                | (-3.53)      | (-3.41)      | (-3.49)      | (-3.54)      | (-2.31)      | (-3.49)      |
| MHK×SOE        | 0.005*       | 0.005**      | 0.005*       | (1.80)       | (2.20)       | (1.78)       |
| MHK×POL        |              |              |              | 0.013***     | 0.006*       | 0.012***     |
|                |              |              |              | (2.83)       | (1.74)       | (2.80)       |
| SOE            | -0.004       | -0.003       | -0.004       |              |              |              |
|                | (-1.43)      | (-1.34)      | (-1.42)      |              |              |              |
| POL            |              |              |              | -0.005       | -0.001       | -0.005*      |
|                |              |              |              | (-1.64)      | (-0.22)      | (-1.65)      |
| ROE            | 0.002***     | 0.002***     | 0.002***     | 0.003***     | 0.003**      | 0.003***     |
|                | (10.66)      | (12.52)      | (10.67)      | (2.82)       | (2.02)       | (2.82)       |
| Size           | 0.016***     | 0.016***     | 0.016***     | 0.015***     | 0.015***     | 0.015***     |
|                | (11.21)      | (14.23)      | (11.22)      | (6.24)       | (7.76)       | (6.24)       |
| MB             | 0.001***     | 0.002***     | 0.001***     | 0.001        | 0.001**      | 0.001        |
|                | (3.11)       | (5.11)       | (3.13)       | (1.27)       | (2.17)       | (1.29)       |
| Ppe            | 0.024***     | 0.020***     | 0.025***     | 0.029***     | 0.024***     | 0.030***     |
|                | (4.57)       | (4.78)       | (4.69)       | (2.86)       | (2.95)       | (2.93)       |
| Intang         | -0.035*      | -0.082***    | -0.035*      | -0.073*      | -0.116***    | -0.072*      |
|                | (-1.71)      | (-5.11)      | (-1.72)      | (-1.73)      | (-3.57)      | (-1.72)      |
| Invent         | -0.001       | -0.000       | -0.001       | 0.002        | 0.008        | 0.001        |
|                | (-0.09)      | (-0.01)      | (-0.16)      | (0.11)       | (0.65)       | (0.04)       |
| Eqinc          | 0.352***     | 0.369***     | 0.353***     | 0.722***     | 0.789***     | 0.725***     |
|                | (9.73)       | (12.86)      | (9.81)       | (5.94)       | (7.85)       | (5.99)       |
| Lev            | -0.086***    | -0.067***    | -0.087***    | -0.090***    | -0.069***    | -0.090***    |
|                | (-16.15)     | (-15.68)     | (-16.26)     | (-10.12)     | (-8.82)      | (-10.20)     |
| Loss           | 0.011***     | 0.008***     | 0.010***     | 0.010***     | 0.008***     | 0.010***     |
|                | (5.34)       | (5.10)       | (5.26)       | (3.36)       | (3.23)       | (3.33)       |
| Dacc           | 0.125***     | 0.122***     | 0.110***     | 0.134***     | 0.135***     | 0.117***     |
|                | (18.32)      | (22.49)      | (16.14)      | (11.74)      | (14.30)      | (10.26)      |
| Constant       | -0.332***    | -0.338***    | -0.331***    | -0.297***    | -0.314***    | -0.296***    |
|                | (-10.49)     | (-13.46)     | (-10.52)     | (-5.71)      | (-7.37)      | (-5.73)      |
| Firm F.E.      | Yes          | Yes          | Yes          | Yes          | Yes          | Yes          |
| Year F.E.      | Yes          | Yes          | Yes          | Yes          | Yes          | Yes          |
| N              | 10,659       | 10,659       | 10,659       | 10,659       | 10,659       | 10,659       |
| R²             | 0.39         | 0.48         | 0.39         | 0.37         | 0.44         | 0.37         |
| F              | 70.788***    | 100.260***   | 65.277***    | 21.501***    | 24.314***    | 19.603***    |

This table reports the results regarding the impact of firm-government relationship on the relation between financial market opening and corporate tax avoidance. The dependent variables are proxies for tax avoidance, measured as BTD, PERM_BTD, and DDBTD. The key explanatory variable are the interaction...
terms, $MHK \times SOE$ and $MHK \times POL$. The sample used in this regression reflects the period from 2012 to 2018. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The t-statistics (shown in parentheses) are based on robust standard errors, clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.
**Appendix G**

Robustness: Results of Entropy Balancing Matching and Coarsened Exact Matching

|          | (1)  | (2)  | (3)  | (4)  | (5)  | (6)  |
|----------|------|------|------|------|------|------|
|          | BTD  | PERM_BTD | DDBTD | BTD  | PERM_BTD | DDBTD |
| **MHK**  | -0.005*** | -0.004** | -0.005** | -0.005*** | -0.005*** | -0.005*** |
|          | (-2.06) | (-2.11) | (-2.06) | (-2.67) | (-3.76) | (-2.69) |
| Controls | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Firm F.E.| Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Year F.E.| Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| N        | 10,659 | 10,659 | 10,659 | 8,988 | 8,988 | 8,988 |
| R²       | 0.11  | 0.14  | 0.10  | 0.50  | 0.58  | 0.50  |
| F        | 10.745*** | 14.594*** | 10.563*** | 92.483*** | 142.873*** | 87.484*** |

This table reports the results of Entropy Balancing Matching and Coarsened Exact Matching. The dependent variables are proxies for tax avoidance. The key explanatory variable is MHK. Definitions of all of the variables are provided in Appendix A. All of the regressions include firm-fixed effects and year-fixed effects. The t-statistics (shown in parentheses) are based on robust standard errors clustered at the firm level. Coefficients marked with *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.