HOW DO THE POLITICAL CONNECTIONS AND THE CORPORATE GOVERNANCE MECHANISMS AFFECT THE FIRM RISK OF CHINESE DUAL-LISTED COMPANIES?

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ABSTRACT

This research aims to assess the influences of political connections and corporate governance (CG) mechanisms on the firm risk of Chinese dual-listed companies (CDLC). CDLCs are Chinese companies that have core businesses in China and simultaneously list their shares in the Hong Kong and the China A-share markets. One hundred CDLCs are chosen for this research from 2003 to 2019. A binary variable of state control firm attribute (SCFA) is created to proxy the political connections to the Chinese government. The standard deviation of daily stock return and the mean of the natural logarithm of squared daily stock return are the two proxies of firm risk. The regression results show that the SCFA negatively influences the firm risk. Thus, the political connections, proxied by the SCFA, mitigate the firm risk. However, the state ownership's influence on firm risk is insignificant. The regression results are supportive of our argument that SCFA and state ownership are two distinct concepts. Both the board size and independent director ratio insignificantly influence the firm risk. The CEO duality cannot be concluded to positively influences the firm risk and is not a destabilising factor in CDLCs. Evidence of the legal bonding effect is not observed in this research.

Keywords: Legal bonding hypothesis, Agency theory, Firm risk, Cross-listing, Corporate governance

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INTRODUCTION

Like other emerging markets, the lack of foreign capital and the tight foreign currency control policy in China are the financial barriers to those Chinese companies looking for local and overseas expansions. Cross-listing to overseas host markets, for example, the Hong Kong market, the U.S. market and the London market is a resolution to break through the problem of market segmentation to raise international capital (Coffee Jr., 2002; Karolyi, 2006; Korczak & Korczak, 2013).

Similar to other emerging markets, the Chinese market has a lower standard of corporate governance (CG) practices and is weak in the protection of minority shareholders (Claessens & Fan, 2002; Sabbaghi, 2016). Relatives or friends of controlling shareholders are assigned to be the board members or independent directors who fail to act diligently to improve the corporate governance of the companies (Liu et al., 2015; Wu & Li, 2015). The managerial team and the controlling shareholders find it easier to entrench themselves to pursue personal benefits at the expense of companies' resources. CEO duality, which occurs when a single person carries the dual roles of CEO and chairman, is prevalent in Chinese private companies. The CEO duality is too powerful to influence the board to make inappropriate or extreme board decisions that do not represent the best interests of minority shareholders (Moyer et al., 1996; Pham & Pham, 2020). Therefore, CG mechanisms are the factors that may affect the firm risk of CDLCs, the Chinese companies dually listed in the Chinese market and the Hong Kong market.

Government intervention is another issue in CDLCs, as most CDLCs have been transformed from state-owned enterprises and have a heavy concentration of state ownership. Those CDLCs with strong political connections to the Chinese government not only benefit from the government support, such as policies or financial support but also should fulfill government policies that, in return, expropriate the minority shareholders and increase the firm risk (Chang & Wong, 2004; Yu, 2013).

When CDLCs cross-list to the Hong Kong market, the presence of foreign investors, the higher standard of CG practices, and the more stringent listing rules of the Hong Kong market are supposed to improve transparency, CG, and the monitoring of board members and controlling shareholders, as well as mitigate the companies' firm risk (Cao et al., 2017; Chen et al., 2013; Naufa et al., 2019; Vo, 2015). However, prior studies related to firm risk of cross-listed companies do not cover CDLCs. The impacts of CG mechanisms and political connections on CDLCs' firm risk are still the missing gaps to be filled in the literature. This research aims to assess the impacts of political connections and CG mechanisms on the firm risk of CDLCs. In this research, the CDLCs are Chinese companies that have core businesses in China and simultaneously list their shares in the Hong Kong market, a world-class market, and the China A-share market, a segmented emerging market. Thus, CDLCs form a specific class of cross-listed companies (Karolyi, 2006).

The underpinning theories that govern the discussion of cross-listed companies in literature are the agency theory and the legal bonding hypothesis. Cross-listed companies, especially those companies coming from emerging markets, have to adopt a higher standard of CG practices and comply with the more stringent listing laws and rules of the host markets (Liu et al., 2017; You et al., 2018). As a result, cross-listed companies are usually reported to have improved transparency and internal control (Al-ahdal et al., 2020; Karolyi, 2006). Board members and managers find it difficult to entrench and make sub-optimal decisions to benefit themselves at the expense of companies' resources (Berger et al., 1997; Claessens & Fan, 2002; Ghosh et al., 2011; Lins, 2003). The board members and managers are said to be legally bonded by the legal system of the host markets (Dodd, 2013; Ferris et al., 2009; Ghadhab, 2019). The outcome of the legal bonding effect in host markets is the mitigation of the agency costs (Gul et al., 2012; Jensen & Meckling, 1976; Jensen, 1986) incurred by the misalignment of interests between the shareholders and the managerial team, which is the agent that is supposed to act in the best interests of the shareholders. The mitigation of the agency costs stabilises the cross-listed companies' stock return, hence the firm risk (Al-zaidyeen & Al-rawash, 2015; Cao et al., 2017; Jensen & Meckling, 1976). Therefore, the negative influence of CG mechanisms on firm risk is evidence of the legal bonding effect, such as the mitigation of agency costs.

However, the agency theory and legal bonding hypothesis are created based on the data of well-developed host markets, such as the U.S. market, which is dominated by companies with dispersed ownership structures. Companies from emerging markets are usually transformed from state-owned enterprises and have highly concentrated state ownership structures and severe agency problems, such as principal-to-principal conflicts. Moreover, different host markets have different market settings and various degrees of stringency. The effects of legal bonding on the mitigation of firm risk may vary remarkably from market to market. Therefore, assertions of prior papers based on the cross-listing to the U.S. market may not fully capture the firm characteristics of companies that cross-list to overseas host markets other than the U.S. market (Coffee Jr., 2002; Ferris et al., 2009; You et al., 2018). Further, prior studies (Chakraborty et al., 2019; Hatane et al., 2019; Mathew et al., 2016) do not cover CDLCs. Whether the agency theory and legal bonding hypothesis still stand in CDLCs is still unknown.

CEO duality, board size and board independence are the three widely used mechanisms to analyse the effects of board characteristics on firm risk in literature (Aloui & Jarboui, 2018; Gul et al., 2012; Mezhoud et al., 2017; Zhang et al., 2018). In general, independent directors are evidenced to play an important role in monitoring the managerial team to avoid managers' misconduct, thus mitigate the agency costs (Aloui & Jarboui, 2018; Mezhoud et al., 2017; Wu & Li, 2015). CEO duality, which is the concentration of all administrative power in one individual, is usually discovered to increase the chance of extreme board decisions, and the expropriation of minority shareholders. Thus, CEO duality is always found to increase the firm risk and is identified as a firm risk destabiliser in the literature (Aloui & Jarboui, 2018; Chakraborty et al., 2019). Moreover, the impact of board size on firm risk is controversial in the literature. For example, Aloui and Jarboui, (2018) support the positive effects of board size in their paper, while Mathew et al. (2016) and Mezhoud et al. (2017) report negative effects of board size in their studies. However, an insignificant effect is observed by Hatane et al. (2019). Due to the difference in host market settings and firm characteristics, different CG researchers may have different assertions of how the CG mechanisms impact firm risk, but none of them have extended their studies to cover the CDLCs. Papers related to the firm risk of CDLCs are still rare in the literature.

Further, a highly concentrated ownership structure is a common symptom of companies from emerging markets. Prior studies attempting to analyse the impacts of state intervention or political connections on the firm risk of companies from emerging countries prefer to use state ownership as a proxy. This is because most of the companies from emerging countries are transformed from state-owned enterprises, and are characterised by a high degree of state ownership. However, prior studies' results are also mixed and do not cover the CDLCs either. The impacts of political connections on CDLCs' firm risk are still unknown.

In this research, a binary variable of state control firm attribute (SCFA) is created and introduced to proxy the political connections to the Chinese government if the Chinese government is the company's controlling shareholder. In a statecontrolled Chinese company, the Chinese government appoints professional executives and political officers to the company's boardroom to manipulate the company for the Chinese government. The board is ordered to listen to the political officers' advice (the representatives of the Communist Party of China) before pursuing strategic board decisions (Lin et al., 2020; Ma & He, 2018). Thus, SCFA represents the manipulation rights and the ownership rights of the Chinese government and embraces the dual roles of policy executor and investor¹. However, the use of state ownership may not fully proxy the manipulation rights, hence the Chinese government's political intervention. For instance, the state ownership of a Chinese private company manipulated not by the appointed political officers nor the representatives of the Communist Party of China, but by the company's founders, does not represent government manipulation rights. Therefore, we argue that SCFA and state ownership are two distinct concepts. Their impacts on firm risk would be different and are expected to provide new perspectives related to the impact of political connections on CDLCs' firm risk.

Through this study, we want to address three research questions:

- 1. How do the CG mechanisms influence the firm risk of CDLCs?
- 2. How does SCFA, the proxy of political connections, influence the firm risk of CDLCs?
- 3. How do the state ownership and SCFA influence the firm risk of CDLCs differently?

To the best of our knowledge, this is the first academic research to assess the impacts of political connections and CG mechanisms on the CDLCs' firm risk. The results are expected to fill the literature gaps, the impacts of CG mechanisms and political connections on CDLCs' firm risk, and offer two implications: (i) whether the legal bonding effect still stands to bond the board members to reduce CDLCs' firm risk; and (ii) whether SCFA and state ownership are two distinct concepts and impact the firm risk differently.

LITERATURE REVIEW

The following sub-sections are summaries of prior papers related to the impacts of corporate governance mechanisms and political connections on firm risk.

Corporate Governance

Both agency theory (Jensen, 1986; Jensen & Meckling, 1976) and legal bonding hypothesis (Dodd, 2013; Ferris et al., 2009) were developed based on the data of well-developed host markets, such as US market. Those developed host markets are dominated by companies with dispersed ownership structures and high-quality CG. However, companies coming from emerging countries are poor in CG and have highly concentrated ownership structures (Coffee Jr., 2002; Lins, 2003; Sabbaghi, 2016; Sayari & Marcum, 2018). Agency theory and legal bonding hypothesis may fail to explain the issues and phenomena of these emerging companies that have poor corporate governance and concentrated ownership structure. Therefore, prior papers applying the agency theory and legal bonding hypothesis to explain the effects of CG mechanisms on the firm risk of emerging companies have controversial results.

Aloui and Jarboui (2018) study the effects of CG mechanisms of 89 selected companies on stock return volatility, a proxy of firm risk, from 2006 to 2012. Aloui and Jarboui (2018) report that independent directors mitigate the firm risk. However, the effects of CEO duality and larger board size are positively related to firm risk and are statistically significant.

Mezhoud et al. (2017) examine the effects of CG mechanisms on the firm risk, proxied by the stock return volatility. A total of 65 companies listed on the Paris Stock Exchange from 2010 to 2012 were selected for the study. Mezhoud et al. (2017) provide evidence to show that independent directors, CEO duality and larger board size have significant negative associations with firm risk.

Both Liu et al. (2015) and Wu and Li (2015) analyze the impacts of board independence on Chinese companies' firm performance. They assert that board independence is effective in reducing the principal-to-agent and principal-to-principal conflicts, hence the agency costs. The stabilising effect of independent directors on Indonesian companies' firm risk is also reported by Hatane et al. (2019). However, the significant effect of board size on firm risk is not found in studies by Mathew et al. (2016), Hatane et al. (2019), and Merz and Trabert (2020).

Doku et al. (2023) report that a larger board is more efficient in monitoring the firm and mitigating the firm risk. However, Merz and Trabert (2020) point out that the board monitoring effect is diminishing and its relationship with firm risk is in a U-shape. Zhang et al. (2018) examine the stock return volatility of 444 non-financial Chinese state enterprises from 2000 to 2012 and find that the enforcement of board independence significantly increases the firm risk. Zhang et al. (2018) assert that independent directors fail to monitor and suppress the principal agent conflicts and expropriation of minority shareholders. Boateng et al. (2017) study the relationship between CG mechanisms and the capital structures of Chinese companies and report that independent directors are not effective in monitoring the board and fail to mitigate agency costs. Wang et al. (2017) point out that independent directors appointed by Chinese companies' blockholders are not genuinely independent and do not act diligently to solve agency problems. Chaudhary (2021) investigates the impact of board structure on the firm risk of Indian firms and reports a positive association between board independence and firm risk.

Furthermore, Chakraborty et al. (2019) show that the separation of CEO and chairman roles avoids the concentration of power to one individual and mitigates the firm risk of Canadian companies that have cross-listed to the U.S.

market. However, Chen et al. (2013) investigate the impacts of foreign institutional ownership on firm risk in China, and conclude that there is an insignificant association between CEO duality and firm risk.

Thus, prior research results related to the effects of CG mechanisms on emerging companies for firm risk are mixed. Moreover, none of the prior papers cover CDLCs. The impacts of CG mechanisms on the firm risk of CDLCs are still unknown.

Political Intervention

Companies from emerging countries are usually characterised by a high concentration of state ownership as most of them are transformed from stateowned enterprises. Those companies with a high concentration of state ownership are expected to have strong connections to the state. Their board decisions may be affected by government intervention, which may affect the firm risk (Chang & Wong, 2004; Chen et al., 2013; Lin et al., 2020). In addition, the expropriation of minority shareholders is prevalent in the highly concentrated companies that come from emerging countries (Claessens & Fan, 2002; Estwick, 2016), which increases firm risk. Prior researchers used state ownership to proxy the strength of the government intervention. However, their research results are mixed.

Boateng et al. (2017) explore the idea that Chinese companies with a high concentration of state ownership benefit from their political connections to the Chinese government, such as through policies and financial support, especially during adverse market environments. State ownership mitigates agency costs and reduces firm risk. Chang and Wong (2004) and Yu (2013) provide similar research results to that of Boateng et al. (2017) with both claiming that Chinese companies that have a high concentration of state ownership have stronger political connections and find it easier to get support, such as policy and financial support or the supply of scare resources, from the Chinese government. The high concentration of state ownership gives Chinese companies sufficient incentives to enhance the internal control and quality of CG. This state ownership is regarded as an agency costs mitigator as well as a firm risk stabiliser. In addition, Xie et al. (2023) examine the relationship between state-controlled enterprises and the stock price crash risk of Chinese companies listed in China A-share market from 2003 to 2016 and indicate that state control reduces stock crash risk through the adoption of conservative strategies by the executives.

However, Daraghma (2016) has an opposite point of view in his study related to the influences of ownership structure on companies' firm performance in the Palestine Exchange and indicates that those companies with a high

concentration of state ownership have the worst CG and severe agency problems, hence the firm performance. In line with Daraghma (2016), Sabbaghi (2016) also finds that Chinese companies that have a high concentration of state ownership have poor CG and higher agency costs.

Although prior papers related to the impacts of state ownership, a proxy of political intervention, on firm risk are plentiful in the literature, their results are mixed and do not cover the CDLCs. The impacts of political connections on firm risk of CDLCs are still uncertain. In addition, as we argued, state ownership may not represent manipulation rights and political connections. Thus, the impacts of state ownership and SCFA on CDLCs' firm risk may be different.

HYPOTHESES

Similar to the companies coming from other emerging countries, highly concentrated state ownership is one of the CDLCs' firm characteristics. Prior studies attempting to use state ownership in analysing the impacts of government intervention on firm risk provide mixed results (McMillan & Evans, 2015; Sabbaghi, 2016; Zhang et al., 2018). On one hand, some researchers claim that highly concentrated state ownership is generally related to severe principal-to-principal conflict and poor CG (Claessens & Fan, 2002; Liljeblom et al., 2020; Queiri et al., 2021; Sabbaghi, 2016). On the other hand, some researchers indicate that companies with highly concentrated state ownership benefit from government support, such as the supplies of scarce resources, policies and financial support. As a result, the high concentration of state ownership and the political connections to the state mitigate agency costs and firm risk (Chang & Wong, 2004; Yu, 2013).

Although China is an emerging market, and CDLCs have a high concentration of state ownership, prior studies that investigate the relationship between political connections and firm risk do not cover CDLCs. The impacts of state ownership and political connections on the firm risk of CDLCs are still uncertain. Further, we argue that SCFA and state ownership are two distinct concepts. State ownership may not fully proxy the state's manipulation rights, hence the political connections to the Chinese government. Thus, a binary variable of SCFA is created and introduced in this research to proxy the political connections to the Chinese government. We predict that government intervention and principal-to-principal conflict (Estwick, 2016; Garanina & Kaikova, 2016; Sabbaghi, 2016) are severe in state-controlled Chinese companies. This is because state-controlled Chinese companies have the obligation to fulfill government policies that may not align with the best interests of minority shareholders. Thus, the SCFA would significantly influence the firm risk of CDLCs. Hypothesis H1 is developed to test our prediction:

H1: SCFA influences the firm risk of CDLCs.

The findings of prior papers related to the effects of board independence on agency costs and firm risk are also mixed. Hatem (2015), Aloui and Jarboui (2018), and Sethi et al. (2022) suggest that independent directors can effectively monitor the board and reduce managers' misconduct and inappropriate board decisions. Independent directors are agency costs mitigators. However, Boateng et al. (2017) and Wang et al. (2017) claim opposite points of view. They indicate that the appointed independent directors in Chinese companies are usually the relatives of or any persons who have connections to the controlling shareholders. These appointed independent directors do not play their roles diligently to monitor the companies and make no contribution to the improvement of CG, hence the agency problem.

Although the Hong Kong market is a world-class market, the effectiveness of its legal bonding effects to bond the independent directors of CDLCs is still uncertain. The CDLCs' independent directors may be appointed to satisfy the listing rules of Hong Kong, not for CG improvement (Boateng et al., 2017; Wang et al., 2017). The appointed independent directors may not act independently to avoid inappropriate board decisions that increase the firm risk.

Prior research results are mixed and do not cover CDLCs. The influence of board independence on CDLCs' firm risk is still unknown. However, we follow prior CG researchers and assume that board independence, proxied by the independent director ratio (Aloui & Jarboui, 2018; Sethi et al., 2022) would monitor the board, prevent extreme board decisions, mitigate the agency costs, and significantly influence the firm risk of CDLCs. The hypothesis H2 is developed to verify our prediction

H2: Independent director ratio influences the firm risk of CDLCs.

Board size is another CG mechanism widely used in literature to measure the board's efficiency in the mitigation of agency costs and firm risk (Garanina & Kaikova, 2016; Gul et al., 2012). Aloui and Jarboui (2018) showed a positive relationship between board size and firm risk. However, Mathew et al. (2016) and Mezhoud et al. (2017) concluded a negative relationship between board size and firm risk. No significant effect of board size on firm risk is reported by Hatane et al. (2019). Moreover, Merz and Trabert (2020) assert a U-shape relationship

between board size and firm risk. Thus, the findings of prior papers related to the impacts of board size on firm risk are also mixed and do not cover CDLCs. The influence of CDLCs' board size on firm risk is still uncertain.

However, board members of cross-listed companies are supposed to be legally bonded by the stringency of the host markets, and act in the best interests of investors. Further, a larger board would have more professionals with different experience and knowledge to make better board decisions. Thus, more board members would exert stronger monitoring effect on the managerial team to avoid entrenchment, and mitigate the agency costs. We expect a negative relationship between board size and CDLCs' firm risk (Mathew et al., 2016; Mezhoud et al., 2017). Hypothesis H3 is developed to test the influence of board size on CDLCs' firm risk.

H3: Board size influences the firm risk of CDLCs.

CEO duality is proxied by a binary variable of *CD* and is equal to 1 if the CEO and chairman are the same person or 0 otherwise. CEO duality means the concentration of all power in a single person who can respond swiftly to cope with rapid change in the market environment. Conversely, the existence of CEO duality may result in extreme board decisions or even the expropriation of minority shareholders. Aloui and Jarboui (2018) and Chakraborty et al. (2019) find that CEO duality negatively relates to firm risk. However, Mezhoud et al (2017) show that CEO duality negatively relates to firm risk. In addition, the insignificant influence of CEO duality on firm risk has no consensus in the literature.

CEO duality is prevalent in Chinese companies, especially Chinese private companies. The people carrying the dual roles of CEO and chairperson in Chinese companies are usually the companies' founders who are the experts in the industries of the companies and contribute to the improvement of firm performance. However, the adverse impact of CEO duality is the pursuit of personal interests that may not represent the best interests of minority shareholders, and increase agency costs and the firm risk (Ali & Tauni, 2021; Fang et al., 2020; Moyer et al., 1996). Moreover, prior papers do not cover CDLCs. The way that CEO duality relates to the CDLCs' firm risk is still unknown in the literature. Following the arguments of Aloui and Jarboui (2018) and Chakraborty et al. (2019), we predict that CEO duality would pressure the board to make extreme board decisions that may not represent the best interests of shareholders, and may increase the agency costs. The consequence may be the fluctuation of stock return and the CDLCs' firm risk. Thus, hypothesis H4 is developed to test our prediction. H4: CEO duality influences the firm risk of CDLCs.

METHODOLOGY

Stock return volatility is broadly utilised in the literature to proxy the firm risk (Che, 2018; Naufa et al., 2019; Sayari & Marcum, 2018; Xie et al., 2019). We follow Vo (2015) and Chiang and Chan (2017) to use two different measures of stock return volatility to proxy the firm risk, namely the standard deviation of stock returns, *VOL1*, and the mean of the natural logarithm of squared stock returns, *VOL2*. Equations 1 and 2 are the mathematical definitions of *VOL1* and *VOL2*:

$$VOL1_{i,y} = \sqrt{\frac{\sum_{t=1}^{n} (r_{i,t} - \overline{r}_{i,y})^2}{n-1}}$$
(1)

$$VOL2_{i,y} = \sqrt{\frac{\sum_{i=1}^{n} ln(r_{i,i})^{2}}{n}}$$
(2)

where $r_{i,t}$ is the daily return rate of stock *i* on day *t*. *n* is the number of trading days in year *y*. $r_{i,y}$ is the annual mean of daily return rates of stock *i* in year *y*. For the sake of simplicity, the subscripts *i*, *y* and *t* are dropped from now on.

Equation 3 is the regression model employed to analyse the influences of CG mechanisms and SCFA on CDLCs' firm risk proxied by *VOL1* and *VOL2*:

$$VOLx = c + \beta_{SC} \times SC + \beta_{SO} \times SO + \beta_{ID} \times ID + \beta_{BS} \times BS + \beta_{CD} \times CD + \beta_{FS} \times FS + \beta_{FS} \times FS + \beta_{LEV} \times LEV + \beta_{ROA} \times ROA + \beta_{TQ} \times TQ + \beta_{FIN}$$
(3)
×FIN + ε

where c is the intercept or constant term and ε is the error term. VOLx is the dependent variable and is defined as:

$$VOLx = \begin{cases} VOL1, when x = 1, \\ or \\ VOL2, when x - 2. \end{cases}$$

We follow the CG researchers, such as Moyer et al. (1996), Boateng et al. (2017), Sethi et al. (2022), Queiri et al. (2021), and others, and recruit the board size, the independent director ratio, and the CEO duality as the CG mechanisms in this research to assess their effects on agency costs (Jensen, 1986; Jensen & Meckling, 1976; Karolyi, 2006). The independent director ratio, *ID*, is determined as the ratio of the number of independent directors to the number of board members.

The board size, *BS*, is equivalent to the total number of board members. The CEO duality, *CD*, is a binary variable that is defaulted to 1 if the company's chairman and CEO cannot be verified to be two distinct persons or 0 otherwise. This is because the separation of the chairman and CEO into two different persons is not mandatory according to company law in China.

In addition, the binary variable SC, a proxy of SCFA, is created and introduced to regression model Equation 3 to assess how the political connections to the Chinese government influence the board's decisions, hence the firm risk. SC is a binary variable and is equivalent to 1 if the company's controlling shareholder is the Chinese government, or 0 otherwise. In state-controlled Chinese companies, the Chinese government appoints professional executives and political officers to the boardroom to manipulate the companies for the Chinese government. Apart from the pursuit of business growth, state-controlled companies belong to national strategic industries and are required to fulfill government policies. The statecontrolled Chinese companies' boards are ordered to listen to political officers' advice (The Communist Party of China's representatives) before pursuing any significant strategic board decisions (Lin et al., 2020; Ma & He, 2018). Thus, the SC, a proxy of SCFA, represents both the manipulation rights and ownership rights and embraces the dual roles of policy executor and investor. State-controlled Chinese companies are expected to have stronger political connections to the Chinese government than non-state-controlled Chinese companies. In addition, the state ownership, SO, is added to the regression model Equation 3 to contrast its impacts on firm risk to that of the SC, and to legitimie our argument of distinctive concepts between state ownership and SCFA. We argue that state ownership may not fully proxy the manipulation rights, hence the political connections to the Chinese government. For example, state-owned shares of a Chinese private company manipulated by the company's founders do not represent the state's manipulation rights. Therefore, the Chinese government acts as an investor only. Thus, the impacts of SCFA and SO on firm risk would be different.

The firm size (FS), the leverage ratio (LEV), the return on assets (ROA), Tobin's Q (TQ) and the financial company firm attribute (FIN), are the five control variables utilised in regression model Equation 3. FS is the natural logarithm of the company's total assets. LEV is determined as the ratio of long-term liabilities to the total assets of the company. FIN is a binary variable and is equivalent to 1 if the company is a financial company or 0 otherwise.

In this research, an independent variable is regarded to influence the firm risk only if it has significant associations with both *VOL1* and *VOL2* in the same sign.

A summary of all variables utilised in regression model Equation 3 is shown in Table 1.

Table 1

Description of all variables

Variable	Description
Firm risk:	
VOL1	A proxy of firm risk calculated as the standard deviation of daily stock return.
VOL2	A proxy of firm risk calculated as the mean of the natural logarithm of the squared daily stock return.
CG and political con	nnections:
SC	Proxy of SCFA, a binary variable equal to 1 if the state is the company's controlling shareholder, or 0 otherwise.
SO	State ownership in percentage.
ID	The independent director ratio calculated as the number of independent directors over the number of board members.
BS	The number of board members.
CD	CEO duality, a binary variable defaulted to be 1 if the CEO and chairperson cannot be verified to be two different persons or 0 otherwise.
Control variable:	
FS	The firm size calculated as the natural logarithm of the company's total assets.
LEV	The leverage ratio calculated as the ratio of long-term liabilities to the total assets of the company.
FIN	Financial firm attribute, a binary variable equal to 1 if the company is a financial company or 0 otherwise.
ROA	The return on assets.
TQ	Tobin's Q of the company.

DATA

In this study, the CDLCs are Chinese companies that have core businesses in China and list their shares in the Hong Kong market and the China A-share market simultaneously. There were 114 Chinese companies dually listed in both the Hong Kong market and the China A-share market from 2003 to 2019. After discarding 14 companies with incomplete or missing datasets, the remaining 100 CDLCs are selected in this study. Out of these 100 selected CDLCs, 24 are financial companies. All raw data were manually mined from the official websites of the

selected CDLCs' annual reports (available from the Shenzhen Stock Exchange, www.szse.com.cn, and the Shanghai Stock Exchange, www.sse.com.cn). The China A-share stock price information, which is used to compute the stock return volatility, is obtainable from the online stock trading websites of Chinese financial intermediaries. The panel data comprise 951 firm-year observations in which 135 observations have CEO duality, *CD*, equal to 1; 779 observations have *SC*, a proxy of SCFA, equal to 1; and 188 observations have *FIN*, the financial firm attribute, equal to 1.

EMPIRICAL RESULTS

Descriptive Statistics

Data shown in Table 2 are the descriptive statistics of all non-binary variables utilized in the regression model Equation 3. VOL1's mean, median, and standard deviation are 2.6486, 2.4174, and 1.2561. The skewness of VOL1 is 3.5005 and is outside the range of [-1, 1]. The distribution of VOL1 is right-skewed and is moderately normal. The mean, median, and standard deviation of VOL2 are 0.3140, 0.2759 and 0.7241. The skewness of VOL2 is 0.0951 and is inside the range of [-1, 1]. The distribution of *VOL2* is highly normal. The mean and median of SO are 40.0174 and 45.0900. This implies that most of the CDLCs have a highly concentrated state ownership. The standard deviation of SO is 20.9923. The skewness of SO is -0.4887, inside the range of [-1, 1]. Therefore, SO's distribution is highly normal. The ID's mean, median, and standard deviation are 0.3838, 0.3636, and 0.0675. Over one-third of the board members are independent directors on average. The skewness of ID is 1.2360. The distribution of ID is rightskewed and is moderately normal. Also, the mean and median of BS are 10.6587 and 10.0000. The BS's distribution is highly normal because the skewness of BS is 0.8573 and is inside the range of [-1, 1]. Among the four control variables FS, LEV, ROA and TQ, the skewness values of FS and LEV are inside the range of [-1, 1]. The distributions of FS and LEV are highly normal. However, the skewness values of ROA and TQ are outside the range of [-1, 1]. The distributions of ROAand TQ are moderately normal.

	VOL1	VOL2	SO	ID	BS	FS	LEV	ROA	TQ
Mean	2.6486	0.3140	41.0174	0.3838	10.6587	25.0192	0.6074	0.0280	1.2655
Median	2.4174	0.2759	45.0900	0.3636	10.0000	24.8875	0.5904	0.0238	1.0893
Maximum	16.4350	2.7719	83.1200	0.7143	22.0000	31.0359	1.6356	0.2823	12.4231
Minimum	0.0048	-1.7194	0.0000	0.1667	4.0000	19.5399	-0.0537	-1.3002	0.7110
Std. Dev.	1.2561	0.7241	20.9923	0.0675	2.9195	2.3651	0.2251	0.0698	0.6887
Skewness	3.5005	0.0951	-0.4887	1.2360	0.8573	0.4394	-0.0153	-8.3781	8.5652

Table 2Descriptive statistics

Correlation Matrix

Data shown in Table 3. are the correlation coefficients of all non-binary variables utilised in the regression model Equation 3. The correlation between *VOL1* and *VOL2* is 0.7398, close to 0.75, and is strong. The strong correlation between *VOL1* and *VOL2* is reasonable as both *VOL1* and *VOL2* measure the same company's entity, the firm risk. The correlation between *FS* and *LEV* is 0.5563, outside the range of [-0.5, 0.5], and is moderately strong. The collinearity problem may exist and affect the quality of regression coefficients of *FS* and *LEV*. However, the correlation coefficients of *FS* and *LEV* with all other variables are inside the range of [-0.5, 0.5], and are weak. The rest of the correlation coefficients are inside the range of [-0.5, 0.5], and their corresponding multicollinearity effects are insignificant.

Table 3 *Correlation matrix*

	VOL1	VOL2	SO	ID	BS	FS	LEV	ROA	TQ
VOL1	1.0000								
VOL2	0.7398	1.0000							
SO	-0.0728	-0.0881	1.0000						
ID	-0.0443	-0.0146	0.0698	1.0000					
BS	-0.1012	-0.1792	-0.0638	-0.4151	1.0000				
FS	-0.2537	-0.4501	0.2509	0.0685	0.4217	1.0000			
LEV	-0.1119	-0.1851	0.0385	-0.0426	0.2985	0.5563	1.0000		
ROA	-0.0155	-0.0389	0.0728	0.0413	-0.0425	0.0285	-0.4114	1.0000	
TQ	0.1809	0.1799	-0.2770	-0.0065	-0.1192	-0.3724	-0.0968	-0.3012	1.0000

Regression Results

Data shown in Table 4 are the random effects models regression results of VOL1 and VOL2, proxies of firm risk, against all independent variables. According to the Hausman test results, the respective *p*-values of regressions of *VOL1* and VOL2 are 0.4742 and 0.5343, higher than 0.1. The use of random effects models is more appropriate in regressions of both VOL1 and VOL2. Also, LS regression technique is employed in this research. An independent variable is considered to significantly influence the firm risk of CDLCs only if the independent variable has significant associations with both VOL1 and VOL2 in the same sign, such as if the signs of their regression coefficients are the same. Data shown in Table 4 are divided into four columns. Column#1 and Column#2 are the random effects models regression results of VOL1 and VOL2 with the full set of independent variables specified in equation Equation 3. Column#3 and Column#4 are the regression results of VOL1 and VOL2 after removing the state ownership, SO, from regression equation Equation 3. The purpose of removing SO from regression is to test the robustness of regression results of SC as the collinearity effect may affect its accuracy. This is because state-controlled Chinese companies must have a high concentration of state ownership.

Considering the data in Column#1 and Column#2, SC is negatively associated with both VOL1 and VOL2 at 1% and 5% significance levels. SC mitigates firm risk and can be concluded to have a negative influence on firm risk. The regression results fail to reject H1. Unlike SC, SO, the state ownership exhibits insignificant positive effects on both VOL1 and VOL2. Thus, the influence of SO on firm risk is insignificant. ID, the independent director ratio, has negative, but insignificant, associations with both VOL1 and VOL2. The stabilising effect of board independence is insignificant. Thus, H2 is rejected. BS, the board size, has an insignificant negative association with VOL1 and a significant negative association with VOL2 at the 5% significance level. Thus, BS cannot be concluded to influence the firm risk. H3 is rejected. Further, CD, the CEO duality, is revealed to have insignificant positive association with VOL1, and significant positive association with VOL2 at 5% significance levels. Thus, the CD cannot be concluded to influence the firm risk. The regression results reject hypothesis H4. In addition, FS, the firm size, has significant negative associations with both VOL1 and VOL2 at the 1% significance level. LEV, the leverage ratio, has a significant positive association with VOL2, but not with VOL1. The rest of the control variables, FIN, ROA and TQ, are insignificantly associated with both VOL1 and VOL2.

Variable	Column#1		Column#2		Column#3		Column#4	
	Coefficient	<i>p</i> -value	Coefficient	<i>p</i> -value	Coefficient	<i>p</i> -value	Coefficient	<i>p</i> -value
С	6.8390*** (11.1762)	0.0000	3.9646*** (12.9936)	0.0000	6.6866*** (11.0987)	0.0000	3.9381*** (12.8701)	0.0000
SC	-0.3953*** (-3.4154)	0.0007	-0.1256** (2.2756)	0.0231	-0.3062*** (-3.6422)	0.0003	-0.1104*** (-2.7550)	0.0060
SO	0.0026 (1.1212)	0.2625	0.0004 (0.4049)	0.6856	-	-	-	-
ID	-0.4776 (-0.9037)	0.3664	-0.2578 (-1.0229)	0.3066	-0.5133 (-0.9724)	0.3311	-0.2664 (-1.0588)	0.2900
BS	-0.0133 (-0.8820)	0.3780	-0.0143** (-2.0010)	0.0457	-0.0170 (-1.1561)	0.2479	-0.0151** (-2.1528)	0.0316
CD	0.1280 (1.4355)	0.1515	0.1051** (2.4687)	0.0137	0.1181 (1.3325)	0.1830	0.1038** (2.4565)	0.0142
FS	-0.1555*** (-6.1658)	0.0000	-0.1371*** (-11.3786)	0.0000	-0.1444*** (-6.2351)	0.0000	-0.1351*** (-12.2264)	0.0000
LEV	0.2838 (1.3856)	0.1662	0.3110*** (3.1848)	0.0015	0.2307 (1.1552)	0.2483	0.3014*** (3.1674)	0.0016
FIN	0.0006 (0.0043)	0.9966	-0.0259 (-0.4081)	0.6833	-0.0058 (-0.0441)	0.9649	-0.0267 (-0.4224)	0.6728
ROA	0.3769 (0.7031)	0.4822	-0.2023 (-0.7916)	0.4288	0.2780 (0.5253)	0.5995	-0.2200 (-0.8722)	0.3833
TQ	0.0462 (0.8855)	0.3761	-0.0232 (-0.9319)	0.3516	0.0432 (0.8281)	0.4078	-0.0237 (-0.9529)	0.3409
Hausman test	0.4742		0.5343					
Adjusted R ²	0.1358		0.3268		0.1361		0.3283	

Table 4 *Regression results*

Notes: ***significance level at 1%, **significance level at 5%, *significance level at 10%. The numbers shown in parentheses are the t-statistics of the estimated coefficients.

Moreover, the removal of state ownership, SO, from regressions (Column#3 and Column#4) does not significantly change the sign and magnitude of SC's regression coefficients but does improve the significance level of the association between VOL2 and SC from 5% to 1%. Thus, the regression results of SC are robust. Table 5 is a summary of all hypothesis tests.

Independent variable:	Dependent variable		Hypothesis	Accept/Reject	
	VOL1	VOL2			
SC	-ve	-ve	H1	Accept	
ID	-	-	H2	Reject	
BS	-	-ve	Н3	Reject	
CD	-	+ve	H4	Reject	

Table 5Summary of hypotheses tests

Notes: '-', '-ve', and '+ve' represent an insignificant association, negative significant association and positive significant association.

DISCUSSION AND IMPLICATION

First, as illustrated in the regression results shown in Table 4 (from Column#1 to Column#4), the SCFA can be concluded to influence the CDLCs' firm risk negatively. In a state-controlled Chinese company, the Chinese government is the controlling shareholder and appoints professional executives and political officers to the boardroom to manipulate the company. The board is ordered to listen to the political officers' advice (representatives of the Communist Party of China) before pursuing any strategic board decisions. Thus, the SCFA proxies both the manipulation rights and ownership rights of the Chinese government, and embraces the dual roles of policy executor and investor (Lin et al., 2020; Ma & He, 2018). The implication is that the SCFA is a risk mitigator. The negative influence of SCFA on the CDLCs' firm risk is parallel to the assertions of Chang and Wong (2004) and Yu (2013). They indicate that those Chinese companies with a high concentration of state ownership benefit from political connections to the Chinese government, such as financial and policy support, or the supply of scarce resources. Thus, the government's support reduces firm risk and stabilises the firms. However, we argue that SCFA and state ownership are two distinct concepts. This is because the state ownership may not represent the state's manipulation rights, and in turn the political connections to the Chinese government. In addition, the state ownership cannot be concluded to influence the firm risk. Thus, the impacts of SCFA and state ownership on CDLCs' firm risk are different. The regression results legitimise our argument of distinct concepts between SCFA and state ownership as their impacts on firm risk are different.

Second, both the board size and independent director ratio cannot be concluded to influence the CDLCs' firm risk. The implication is that board members and independent directors cannot act diligently to improve the quality of CG and mitigate the firm risk. The appointment of board members and independent directors is to satisfy Hong Kong's listing rules and laws only. Thus, both independent directors and board members of CDLCs cannot be regarded as significant stabilising factors. The legal bonding effect of the well-developed Hong Kong market does not necessarily entail better CG, lower agency costs, and firm risk. To a certain extent, the regression results of board size and independent director ratio are consistent with the findings of Boateng et al. (2017) and Wang et al. (2017) who indicate that the appointed independent directors in Chinese companies are not genuinely independent and fail to act diligently to mitigate the firm risk. Evidence of the legal bonding effect is not observed in this research.

Third, CEO duality is found to be positively associated with *VOL2* at the 5% significance level, but insignificantly associated with *VOL1*. Thus, the regression results fail to conclude that CEO duality influences the CDLCs' firm risk, and are consistent with the findings of Chen et al. (2013) who report an insignificant association between firm risk and CEO duality in China. Evidence of increasing agency costs, and hence firm risk, due to the extreme decisions or riskier investments pursued by CEO duality (Aloui & Jarboui, 2018; Chakraborty et al., 2019) is not observed in this research.

The research results constitute three new findings of CDLCs in the literature:

- 1. The impacts of board size, independent director ratio, and CEO duality on firm risk.
- 2. The impact of SCFA on firm risk.
- 3. The legitimation of the distinct concepts between state ownership and SCFA due to their differential impacts on firm risk.

CONCLUSION

This research aims to investigate the impacts of CG mechanisms and political connections on the CDLCs' firm risk. CDLCs are defined as Chinese companies that have core businesses in China and list their shares in the Hong Kong market and the China A-share market simultaneously. One hundred CDLCs from 2003 to 2019 were selected for this research.

Further, a binary variable of SCFA, *SC*, is created and introduced to proxy the political connections to the Chinese government in this research. *SC* is equivalent to 1 if the Chinese government is the controlling shareholder of the

company, or 0 otherwise. In addition, state ownership, another proxy of political connection widely used by other researchers in literature, is added to the regression specification to contrast its impact on firm risk with that of the SCFA.

The regression results show that *SC*, the proxy of SCFA, negatively relates to the CDLCs' firm risk. The implication is that CDLCs benefit from the political connections that mitigate the firm risk, such as financial and policy support from the Chinese government, or the supply of scarce resources. However, state ownership is found to be insignificantly associated with firm risk. The influence of state ownership on CDLCs' firm risk is different from that of the SCFA. The regression results are supportive of our argument that state ownership and SCFA are two distinct concepts because their influences on firm risk are different. State ownership may not fully represent the state's manipulation rights, hence the political connections to the Chinese government.

Moreover, both the board size and independent director ratio do not significantly influence the CDLCs' firm risk. The implication is that independent directors and board members are appointed to satisfy the stringency of the Hong Kong market only and do not act diligently to improve the CG and mitigate the agency costs and the firm risk. Evidence of the legal bonding effect is not observed in this research.

Further, CEO duality cannot be concluded to influence the CDLCs' firm risk. The regression results fail to support the positive relationship between CEO duality and agency costs, and hence the CDLCs' firm risk. Evidence of extreme decisions and the pursuit of riskier investments due to CEO duality are not observed in this research.

To the best of our knowledge, this is the first dedicated research to assess the impacts of CG mechanisms and political connections on CDLCs' firm risk. The research results complement the findings of prior papers in the literature.

LIMITATIONS AND SUGGESTION

There are some limitations in this research. One of them is human calculation error as all data were collected and calculated manually. Another limitation is the modest number of selected companies for this research. This is because there were only 114 CDLCs from 2003 to 2019, of which 14 had incomplete or missing data and were discarded. Only 100 CDLCs remained and were selected in this study.

Future research is suggested to investigate and compare the impacts of CG mechanisms, state ownership, and the SCFA on (i) the firm risk, or (ii) the financing strategies of dual-listed or multi-listed companies from other emerging countries that cross-list to other host markets, such as the U.S. market or London market. Researchers are recommended to separately consider the impacts due to manipulation rights and ownership rights when analysing the political influence of the state.

Policymakers are suggested to improve the quality of corporate governance practices to ensure the appointed board members and independent directors of CDLCs or other cross-listed companies from emerging markets act diligently to improve the quality of CG and mitigate the firm risk. Investors should consider the influence of political connections when evaluating the investment risk of CDLCs, or other state-controlled companies from other emerging markets.

NOTES

1. More relevant data are obtainable from the official websites of the State-owned Assets Supervision and Administration Commission of the State Council, https://en.sasac.gov.cn.

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