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# VENTURE CAPITAL CERTIFICATION AND FINANCIAL STABILITY: EVIDENCE FROM CHINESE IPOS

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**Abstract**
*This study examines how venture capital (VC) certification reduces financial distress and lowers the cost of capital for Chinese IPOs. Analyzing 1,683 non-financial firms that went public from 2006 to 2016, the findings show that VC-backed firms face significantly less financial distress and benefit from better financing terms than non-VC-backed firms. Using propensity score matching to address endogeneity, the study confirms that VCs select firms with strong prospects and reduced financial risk. Notably, reputable and independent private VCs have a stronger impact on lowering financial distress and financing costs. Overall, the results highlight the critical certification role of VC backing in enhancing financial stability and capital efficiency for IPO firms.*

## INTRODUCTION

Venture capital (VC) has emerged as a rapidly growing alternative source of financing in developing markets (Lockett, Murray, & Wright, 2002). Recognizing the pivotal role of VC in fostering innovation and bringing startups to market, many developing countries have implemented strategies to encourage venture capital investments. The success of the US venture capital model in supporting high-tech companies has influenced many developing economies to adopt similar approaches. China in particular has pursued economic reforms since 1978, transitioning from a planned economy to a more market-oriented one. These reforms, alongside findings from the "New Technologies and Countermeasures" project in the 1980s, laid the foundation for China's venture capital market (Zhang, 2014). However, compared to Western markets, China's venture capital industry is still relatively young and underdeveloped, particularly in terms of regulatory institutions. Despite China's remarkable economic growth over the past three decades, and the parallel expansion of venture capital investments (Anderson, Chi, & Wang, 2017; Dai, Jo, & Kassicieh, 2012; Zhang, 2014), the country's VC industry lacks the regulatory frameworks present in more developed markets(Ahlstrom, Bruton, & Yeh, 2007). Consequently, the investment strategies, exit mechanisms, and overall impact of Chinese VCs on portfolio companies differ from those in more developed economies.

These unique market conditions have heightened academic interest in examining the effects of venture capital in China, specifically its impact on backed firms. By definition, venture capital firms provide an alternative source of financing, leveraging their risk-taking capabilities to invest in portfolio companies. This not only meets the funding requirements of these companies but also enhances their growth prospects and financial stability through active management. Importantly, the objectives and expertise of venture capitalists vary, leading to

differential impacts on portfolio companies based on the type of VC involved. In this study, we explore the certification role of venture capital in the Chinese market,
arguing that VC backing not only enhances the financial stability of portfolio companies but also certifies these firms in the capital market, improving their financial standing.

Investigating the certification role of VCs is crucial for several reasons outlined in the literature (Chemmanur, Loutskina, & Tian, 2014; Croce, D'Adda, & Ughetto, 2015; Megginson, Meles, Sampagnaro, Verdoliva, 2016). First, VCs conduct thorough screening and selection processes to identify firms with strong future prospects, a process known as the *screening* effect (Chemmanur, Krishnan, & Nandy, 2011; Megginson et al., 2016). Second, VCs help meet the funding needs of portfolio companies through equity investments, enabling firms to achieve an optimal capital structure to fulfill debt obligations, which is referred to as the *financial effect* (Croce, Martí, & Murtinu, 2013). Finally, VCs add value to portfolio companies through management advice and effective monitoring, leading to improved financial soundness—a phenomenon called the *value-addition effect*(D. Cumming, 2012; D. J. Cumming, Grilli, & Murtinu, 2017). However, these effects are not uniform across all venture capitalists, as their expertise and reputation vary(Gopalan, Nanda, & Yerramilli, 2011; Krishnan, Masulis, & Singh, 2006; Megginson et al., 2016). The certification role of VCs has been explored in various contexts. For example, Booth and Smith II (1986) investigated underwriter certification for market risk, while Megginson et al. (2016) analyzed the certification effect of American VC-backed IPO firms on financial distress and debt costs between 1995 and 2007. They found that VC-backed IPOsnot only experienced lower financial distress but also benefited from certification in debt markets, resulting in reduced financial costs.

China's venture capital market has garnered significant attention due to the country's rapid economic growth and transformation from a centrally controlled economy to a market-oriented system(Lin, 2016; Yi, Wang, Lyu, & Xia, 2023). Initially dominated by foreign VCs in the mid-1980s, China's VC market has expanded considerably, especially after regulatory reforms that allowed domestic institutional investors to participate in VC and private equity funds. These reforms, along with the introduction of additional stock market exit routes—such as the Small-and-Medium Enterprises (SME) Board in 2004 and the ChiNext Board in 2009—have spurred the growth of domestic venture capitalists, who now dominate the market (Tan, Huang, & Lu, 2013) . The introduction of these boards has also increased venture capital activity, particularly in young, technology-driven firms. As China's regulatory and institutional environments evolved, many foreign VCs began raising funds in Chinese currency to tap into the growing market. Improvements in financial markets have further shifted exit preferences, leading to a greater number of IPOs in mainland China over time(Humphery-Jenner & Suchard, 2013a, 2013b). While Japan had long been the focal point of venture capital in Asia, China has now become a key player, drawing global attention due to its strong entrepreneurial culture, enhanced intellectual property rights protections, robust economic growth, and expanding domestic market (Lerner & Schoar, 2005). However, venture capitalists with experience in Western markets, such as the United States, often find China's VC environment distinct and challenging (Pukthuanthong & Walker, 2007).

Several studies have applied an institutional- based perspective to explain cross-country differences in VC markets(Angelo, Alberto, & Laureti, 2021; Howell, Lerner, Nanda, & Townsend, 2020; Jeong, Kim, Son, & Nam, 2020). According to this view, differences in formal and informal institutions, or the "rules of the game" (North, 1990), significantly influence the strategy and performance of firms in emerging economies. In emerging markets, governmental and societal influences are often more pronounced than in the West (Gustiawan, Phung, & Afifah, 2024). As such, VCs in China face not only industry- and firm-level uncertainties but also legal and institutional challenges, such as weak intellectual property protection, shareholder rights, government intervention, and lack of transparency in financial reporting(Jeng & Wells, 2000; Tan et al., 2013). These challenges highlight the importance of studying the impact of VC backing on portfolio firms' financial costs in China. In this study, we assess the effect of venture capital backing on financial distress and financing costs in Chinese IPO firms. The remainder of the paper is structured as follows: Section 2 reviews the relevant literature, Section 3 describes the sample data and variable measurements, Section 4 outlines

the methodology, Section 5 presents the results and discussion, and Section 6 concludes with recommendations.

**Literature Review**

Venture capital (VC) has long been recognized as a crucial source of funding for innovative, high-growth companies, particularly in sectors where the risks associated with new ventures are too high for traditional bank financing. These sectors often include technology, biotechnology, pharmaceuticals, and more recently, fintech and clean energy. Venture capitalists differ from conventional financial institutions like banks or insurance companies in that they not only provide financial capital but also actively engage with the firms they fund, offering strategic, managerial, and operational expertise. This unique combination of financial and non-financial contributions sets venture capital apart from other forms of financing (Barry et al., 1990;
Kortum & Lerner, 2000). The ability of venture capitalists to offer both resources and guidance has positioned them as key drivers of entrepreneurial success and innovation. The venture capital industry is typically characterized by its willingness to take on high levels of risk in exchange for potentially high rewards(Bamford & Douthett, 2013; Croce et al., 2015; Megginson et al., 2016; Warne, 1988). This risk-reward profile is most attractive to startups and early-stage companies that operate in uncertain environments but have the potential for exponential growth. By injecting equity capital, VCs alleviate financial constraints that would otherwise inhibit these firms from pursuing aggressive growth strategies or launching innovative products. However, venture capitalists are not just passive financiers; they take an active role in guiding portfolio companies through complex market conditions, ensuring their long-term viability and scalability(Megginson et al., 2016).

Venture capital's significance is evident in both emerging and developed markets, but its role in emerging economies, such as China, is particularly critical. Emerging markets often lack the deep financial systems, regulatory frameworks, and institutional support that companies in more developed markets can rely on(Zhang, 2014). As a result, firms in these environments face higher barriers to entry, as well as greater challenges in accessing traditional sources of capital like bank loans or public equity markets. In such economies, venture capital becomes a lifeline, offering not only the financial backing needed to grow but also the strategic insights and industry connections essential for navigating uncertain business landscapes. In developed economies, such as the United States and Western Europe, venture capital has been a cornerstone of technological innovation and entrepreneurial activity for decades. The U.S., in particular, has a well- developed VC industry, with Silicon Valley often cited as the global epicenter for venture-backed companies. Many of today's largest technology companies, including Apple, Google, Facebook, and Amazon, were initially funded by venture capitalists. These firms have demonstrated how VC can fuel rapid innovation, disrupt existing markets, and create entirely new industries.

Venture capital in developed markets often operates within well-established legal and financial frameworks that provide robust investor protections, clear intellectual property (IP) rights, and efficient exit mechanisms, such as initial public offerings (IPOs) and mergers and acquisitions (M&A)(Ahlstrom & Bruton, 2006; Ahlstrom et al., 2007; Ayodeji, 2012; Salehizadeh, 2005). These mature regulatory environments reduce the risk associated with venture capital investments, enabling venture capitalists to focus on identifying high- potential firms and scaling them rapidly (Megginson & Weiss, 1991). Furthermore, venture capitalists in these markets typically possess deep industry knowledge, extensive networks, and a long history of successful investments, which they leverage to guide their portfolio companies toward growth.

The well-regulated nature of these environments also facilitates smoother exit strategies, as firms can go public on stock exchanges like NASDAQ or be acquired by larger companies. The prevalence of these exit options provides venture capitalists with the liquidity they need to continue funding new ventures, creating a self-sustaining cycle of investment and growth. For example, the presence of specialized stock exchanges for high-growth companies, such as NASDAQ in the U.S. or the Alternative Investment Market (AIM) in the UK, makes it easier for venture-backed firms to raise additional capital and achieve successful exits. The effectiveness of venture capital in developed markets is therefore closely tied to the strength of financial and legal institutions, which protect both investors and entrepreneurs. The role of venture capital in emerging markets is even more critical given the challenges faced by companies in these regions. Unlike in developed economies, emerging markets often lack the institutional infrastructure necessary to support

entrepreneurial ventures. Regulatory frameworks may be underdeveloped, investor protections weaker, and financial markets less liquid. Despite these challenges, venture capital in emerging markets has grown significantly in recent years, with China, India, and Brazil emerging as key players in the global venture capital landscape. In emerging economies, the impact of venture capital is multifaceted. First, VCs provide essential financial support to firms that might otherwise struggle to secure funding. In markets where traditional banking institutions are often conservative in their lending practices—especially when it comes to risky, early-stage ventures—VCs play a crucial role by supplying the capital needed to fuel innovation and growth (Zhang, 2014). This is particularly important in countries like China, where the state- controlled banking sector has historically prioritized lending to large, state-owned enterprises over private startups. As a result, venture capital fills a critical gap in the financial ecosystem, helping to fund private firms that might otherwise be overlooked.

Researchers have primarily examined VC's role from three perspectives: screening and selection, financial impact, and value addition. First, the *screening and selection process* involves venture capitalists meticulously selecting firms with strong business potential. Chemmanur et al. (2011) suggest that VCs employ thorough due diligence to identify firms with promising growth trajectories, minimizing the risk of financial distress post-investment. Second, VCs fulfill the funding needs of portfolio

firms through equity investments, thereby optimizing their capital structure and enabling them to meet their financial obligations. This is referred to as the *financial effect*(Croce et al., 2013; Martí, Aguiar-Díaz, & Ruiz-Mallorquí, 2024; Pantea & Tkacik, 2024). By providing capital at critical stages, VCs support firms that otherwise may not have access to traditional financing channels due to high risks associated with innovative startups. Third, venture capitalists add value through active participation in the management and governance of portfolio firms. This *value-addition effect* includes offering strategic advice, monitoring operations, and facilitating networking opportunities with key stakeholders. D. J. Cumming et al. (2017) argue that such involvement enhances the financial stability and overall performance of VC-backed firms, distinguishing them from non-VC-backed counterparts. The impact of venture capital extends beyond financial support. Megginson et al. (2016) found that VC backing reduces post-IPO financial distress in U.S. firms, attributing this to both rigorous screening processes and the value-added services provided by VCs. The involvement of VCs not only contributes to the financial health of firms but also signals their quality to the market, which reduces information asymmetry and builds investor confidence(Megginson & Weiss, 1991).

In addition to stabilizing firms financially, VCs play a crucial role in promoting innovation and economic growth. Several studies highlight the importance of venture capital in fostering technological advancements and improving the competitiveness of national economies(Barry, Muscarella, Peavy, & Vetsuypens, 1990; Kortum & Lerner, 2000, 2001; Warne, 1988). VCs often support young firms in recruiting executives, guiding strategic decisions, and playing an active role on their boards(Barry et al., 1990; Megginson & Weiss, 1991). These contributions are especially important for startups that lack the internal expertise to navigate early-stage challenges.

Literature also explored that venture capitalists bring valuable industry expertise and strategic guidance to the companies they fund, which is particularly important in emerging markets where entrepreneurial ecosystems are still developing. In many cases, VCs act as mentors, helping firms navigate complex regulatory environments, expand into new markets, and build strong governance structures. This involvement is often crucial for the success of startups in these regions, where the business landscape can be unpredictable, and local firms may lack the experience or resources to scale effectively on their own. China provides a compelling case study for how venture capital can transform an emerging market. Since the country began its economic reforms in 1978, moving from a centrally planned economy to a more market-oriented system, its venture capital industry has grown rapidly. Today, China is the second-largest venture capital market in the world, behind only the United States (Zhang, 2014). This growth has been fueled by a combination of regulatory reforms, government support, and the increasing availability of exit options, such as IPOs on the Shanghai Stock Exchange or the Hong Kong Stock Exchange. As China's regulatory framework has evolved, so too has its venture capital market, which now plays a critical role in supporting the country's burgeoning entrepreneurial ecosystem (Ahlstrom & Bruton, 2006). While venture capital has had a transformative impact in emerging markets, it also faces unique challenges. One of the most

significant obstacles is the lack of mature legal and financial systems, which can make venture capital investments riskier. For instance, intellectual property protections are often weaker in emerging markets, making it difficult for startups to safeguard their innovations. This lack of protection can deter venture capitalists from investing in high- tech firms, which rely heavily on patents and other forms of IP to maintain their competitive edge. Additionally, the absence of well-established exit mechanisms—such as a liquid stock market or a robust M&A market—can make it more difficult for VCs to realize returns on their investments. China's venture capital market, while growing rapidly, still grapples with these challenges. Regulatory uncertainty, government intervention, and the dominance of state-owned enterprises in key industries can create a complex operating environment for private firms and their investors. Furthermore, the venture capital ecosystem in China remains relatively young compared to that of the U.S., meaning that both entrepreneurs and investors are still learning how to navigate the intricacies of venture- backed growth. Despite these challenges, venture capital in emerging markets like China is expected to continue growing as these economies become more integrated into the global financial system. The success of China's venture-backed companies, such as Alibaba and Tencent, has demonstrated the potential for significant returns in these markets, attracting more global capital and further fostering the development of local entrepreneurial ecosystems. In conclusion, venture capital plays a vital role in both developed and emerging markets, serving as a catalyst for innovation, economic growth, and entrepreneurship. In developed markets, VC operates within well-established regulatory frameworks that facilitate investment and growth, while in emerging markets, venture capital fills critical gaps in financial and institutional support. As China continues to evolve its regulatory and financial systems, the role of venture capital in the country's economic development will likely become even more pronounced, offering valuable lessons for other emerging economies looking to develop their own venture capital industries. A key function of venture capitalists is their ability to identify and invest in firms with the potential for high returns. This is achieved through a rigorous *screening and selection* process, where venture capitalists assess the potential risks and rewards associated with each investment. The primary goal of this screening is to minimize exposure to financial distress and maximize returns by investing in "winning firms" (Chemmanur et al., 2011). The screening process focuses heavily on identifying firms that have strong business models, scalable operations, and robust management teams. Venture capitalists often employ a variety of financial metrics and qualitative assessments to gauge the risk of future financial distress (Gompers et al., 1999). Financial models, industry analysis, and management evaluations form the backbone of this process. Venture capitalists typically focus on firms that can demonstrate growth potential while minimizing the risk of insolvency.

Krishnan et al. (2011) explored how VCs' screening capabilities are influenced by their prior experience and expertise. They argue that more experienced VCs are better equipped to identify firms with strong financial health and growth potential, reducing the likelihood of future financial distress. In this context, venture capital acts as a form of "smart money" that not only provides financial backing but also ensures that only the most viable firms receive funding. A well-executed screening process has a direct impact on the performance of portfolio firms. Studies show that VC-backed firms are more likely to succeed compared to their non-VC-backed counterparts, largely due to the rigorous selection process they undergo (Gompers & Lerner, 2004; Megginson et al., 2016). This success is often measured in terms of higher revenues, quicker time to market, and, critically, lower levels of financial distress. For instance, Megginson et al. (2016) analyzed the impact of VC backing on American IPO firms between 1990 and 2007. They found that VC- backed firms exhibited lower financial risk, outperforming non-VC-backed firms in terms of financial stability. The study suggests that this superior performance is attributable not only to the screening process but also to the value-added services provided by venture capitalists during the post-investment phase. Beyond screening, venture capitalists provide the financial resources that enable portfolio firms to grow and achieve their business objectives. This is particularly important for startups and early-stage companies that lack the internal cash flow or collateral required to secure traditional bank loans (Croce, D'Adda, et al., 2013). The *financial effect* of VC investments can be observed in two key areas: capital structure optimization and reduced financial costs. One of the primary contributions of venture capital is its ability to optimize the capital structure of portfolio firms. By providing equity financing, venture capitalists reduce the need for firms to rely on debt, which can be costly and risky, particularly for

startups with uncertain revenue streams. The equity financing provided by VCs helps firms maintain financial flexibility, enabling them to meet their debt obligations while pursuing growth opportunities (Croce, Martí, & Murtinu, 2013).

The availability of VC funding is also critical for firms that would otherwise struggle to secure financing through traditional channels. Venture capitalists are willing to take on higher levels of risk compared to banks and other institutional investors, which makes them an essential source of capital for innovative firms with unproven business models (Kaplan & Strömberg, 2003). For these firms, the ability to secure VC funding can be the difference between success and failure. Another important financial contribution of VCs is their ability to reduce the overall cost of capital for portfolio firms. Venture capitalists typically invest in firms at a stage when other sources of financing are prohibitively expensive or unavailable. By injecting equity into the firm, VCs help improve the company's creditworthiness, which can lead to lower interest rates on subsequent debt issuances (Chemmanur et al., 2011). Additionally, the involvement of reputable VCs signals to other investors that the firm is financially sound, further lowering its cost of capital (Megginson & Weiss, 1991). In their study of American IPO firms, Megginson et al. (2016) found that VC backing was associated with lower cost of debt and improved financial performance. This finding suggests that the financial effect of VC investment extends beyond the initial capital infusion and can have long-term benefits for portfolio firms. In addition to providing financial resources, venture capitalists play an active role in the management and strategic direction of portfolio firms. This *value addition* occurs through direct involvement in governance, mentorship, and operational oversight. By working closely with management, VCs help firms navigate the complexities of scaling their business, entering new markets, and managing growth (Cumming et al., 2014). Venture capitalists often take seats on the boards of portfolio companies, where they can influence major strategic decisions. This involvement allows them to closely monitor the firm's performance, offer guidance on key issues, and ensure that management is working towards long-term success (Barry, 1994; Megginson & Weiss, 1991). In many cases, VCs also assist in recruiting senior executives and providing access to their extensive networks of industry contacts (Gompers & Lerner, 2004). VC-backed firms, therefore, benefit not only from the financial resources provided by venture capitalists but also from their expertise in corporate governance and strategy. This involvement helps firms avoid common pitfalls and increases their likelihood of success (Sahlman, 1990). One of the key reasons venture capitalists invest in high-risk, high- reward industries like technology and biotechnology is their potential for innovation. Studies have shown that VC- backed firms are more likely to engage in R&D activities and bring innovative products to market compared to non-VC-backed firms (Kortum & Lerner, 2000). The hands-on approach taken by venture capitalists helps these firms commercialize their innovations and scale their operations, thereby contributing to broader economic growth (Warne, 1988). In their analysis of VC- backed firms, Paul Alan Gompers and Lerner (2004) found that these companies were more likely to go public than non-VC-backed firms, suggesting that VCs play a crucial role in preparing firms for the public markets. This finding supports the notion that venture capital is not merely a source of financing but also a catalyst for innovation and economic development. In addition to providing financial and managerial support, venture capitalists serve a critical *certification role* in capital markets. The presence of a reputable VC signals to potential investors that a firm is financially sound and has undergone rigorous due diligence. This certification reduces information asymmetry between the firm and external investors, leading to better pricing of securities and lower capital costs (Megginson & Weiss, 1991). Information asymmetry is a major challenge for investors, particularly in IPO markets where firms often have limited operating histories and opaque financials. Venture capitalists help mitigate this problem by certifying the quality of the firms they back. The rigorous screening and monitoring processes employed by VCs provide assurance to the market that the firm is a sound investment (Chemmanur & Loutskina, 2006).

Krishnan et al. (2011) studied the role of VC certification in reducing underpricing during IPOs. They found that firms backed by reputable VCs experienced significantly less underpricing, as the market perceived these firms to be of higher quality. This reduced underpricing not only benefits the firm but also signals to other investors that the company is a reliable investment. The certification role of VCs is particularly important during the IPO process. Firms that go public with the backing of venture capitalists typically experience less volatility in their stock prices and attract more institutional investors (Cho & Lee, 2013).

This is because the presence of a reputable VC serves as a form of endorsement, reducing concerns about the firm's future performance.

Megginson and Weiss (1991) were among the first to document the certification effect of venture capital in IPO markets. Their study found that VC-backed firms exhibited lower levels of information asymmetry and better post-IPO performance compared to non-VC-backed firms. This finding has been supported by subsequent studies, which have shown that VC-backed firms tend to outperform their peers in both the short and long term (Brav & Gompers, 1997). The reputation of venture capitalists plays a significant role in determining the success of their investments. Reputable VCs are more likely to attract high-quality firms, secure better investment terms, and achieve superior returns. Moreover, the reputation of the VC firm itself can serve as a signal to the market, further enhancing the certification effect (Fombrun, 1996). Reputation is a key intangible asset that provides venture capitalists with a competitive advantage in the market. Firms backed by reputable VCs are perceived as less risky, which makes it easier for them to raise additional capital, negotiate favorable terms, and attract top talent (Petkova et al., 2014). In the highly competitive world of venture capital, reputation is one of the most important factors in determining a firm's long-term success. In their study of VC-backed firms, Baker and Gompers (2003) found that reputable VCs were able to negotiate more favorable governance terms, such as board seats and control rights, compared to less established firms. This allowed them to exert greater influence over the strategic direction of portfolio companies, leading to better overall performance. Reputation is not only important for attracting portfolio firms but also for raising capital from limited partners. VC firms with a strong track record are more likely to secure funding from institutional investors, allowing them to continue investing in high-growth companies (Nahata, 2008). Reputable VCs are also better positioned to raise larger funds, giving them greater financial firepower to support their portfolio companies. Krishnan et al. (2006) found that VC reputation had a significant impact on the post-IPO performance of backed firms. Firms backed by reputable VCs were more likely to succeed in the public markets, as investors had greater confidence in the firm's ability to deliver long-term value. Drawing from the literature, this study develops a theoretical framework that positions venture capital as both a financial stabilizer and a certification mechanism for portfolio firms. Venture capitalists add value by reducing financial distress, providing managerial support, and certifying the firm's quality to external investors. This dual role suggests that VC backing not only enhances the financial performance of portfolio firms but also improves their market credibility, leading to lower financing costs. Venture capital backing significantly reduces the financial distress of IPO firms compared to non-VC-backed firms. Venture capital certification lowers the financing costs of IPO firms by signaling their quality to the market. The reputation of the venture capital firm amplifies the certification effect, resulting in lower financial distress and reduced financing costs for backed firms. Venture capital plays a multifaceted role in fostering the growth and success of innovative firms. Through rigorous screening processes, financial contributions, active management, and certification, VCs provide portfolio firms with the tools they need to succeed in competitive markets. The reputation of venture capital firms further enhances their ability to deliver value, both to their portfolio companies and to the broader capital markets. This study builds on these findings by empirically testing the impact of venture capital backing on the financial performance and market perception of Chinese IPO firms, with a particular focus on the certification role played by reputable VCs.

Based on this theoretical framework, our study hypotheses are formulated for empirical testing. First Venture capital backing significantly reduces the financial distress of IPO firms compared to non-VC- backed firms. Second venture capital certification lowers the financing costs of IPO firms by signaling their quality to the market. Third reputation of the venture capital firm amplifies the certification effect, resulting in lower financial distress and reduced financing costs for backed firms. This study aims to empirically test these hypotheses using a sample of Chinese non- financial IPO firms that went public between 2006 and 2016, offering a comprehensive analysis of the role venture capital plays in China's unique institutional environment. While previous studies have focused on mature markets like the U.S., this research extends the discussion to China's evolving VC landscape, where state ownership and regulatory differences present additional challenges

**3.Sample Data and Variable Measurement**

This study utilizes a sample of 1,683 non- financial firms that went public in China between 2006 and 2016. As an emerging economy undergoing rapid market and

institutional changes, China presents a unique context to analyze the effects of financial and economic reforms, as well as regulatory changes that influenced the venture capital (VC) market during this period. The last two decades have seen significant economic and regulatory transformations in China, making its market increasingly attractive to international investors.

Data collection was conducted using two primary databases: Thomson Reuters One and CSMAR. Thomson Reuters was employed to identify VC-backed IPOs, while CSMAR provided firm-level data. Initially, 752 VC-backed IPOs were identified from Thomson Reuters; after excluding financial institutions, the sample was reduced to 731 IPOs. Subsequently, we identified VC- backed and non-backed IPO firms using CSMAR. The final dataset included 1,752 IPOs, but after excluding firms from the financial industry, we arrived at a sample of 1,683 IPOs. We matched the ticker symbols of VC-backed IPO firms from Thomson Reuters with those from CSMAR, resulting in 456 matched VC-backed IPOs, which we refer to as VC-treated IPOs. The remaining 1,227 IPOs serve as control firms, meaning that VC-backed firms represent 27.09% of the sample, while control firms constitute 72.90%. The data collected spans one to eleven years, from 2006 to 2016. Our sample is unbalanced due to the nature of the study, and we addressed missing values to enhance the robustness of the empirical results, although a few missing data points remain.

To measure firm financial distress, we utilized the Altman (2000) Z-score, which is suitable for non-manufacturing emerging economies. Additionally, we employed the

Zmijewski (1984) score as a second proxy for financial distress. These models are straightforward to apply and rely on financial statement data, facilitating empirical analysis. Our primary dependent variable, financial expense (FEXP), is calculated as the total interest expense normalized by the total liabilities of the firm. The main explanatory variable is a dummy variable indicating whether an IPO firm is backed by VCs (1 for VC-backed, 0 otherwise). We also used dummy variables to categorize VC reputation and types of VC firms.

The reputation of VC firms has been evaluated in the literature using various proxies, including VC age (Gompers & Lerner, 1996), VC capital under management (Gompers & Lerner, 1999), and the investment reputation associated with VC firms (Baker & Gompers, 2003). Other proxies include first-day stock returns of VC- backed IPOs (Lee & Wahal, 2004), fund returns (Kaplan & Schoar, 2005), and the experience of VC firms (Gompers et al., 2006). Sørensen (2007) measured reputation by the number of funding rounds, while Nahata (2008) used IPO capitalization share. Smith, Pedace, and Sathe (2009) focused on VC fund internal rate of return (IRR) and cash-on-cash return, finding a positive link between these measures and the IPO performance of portfolio companies. Megginson et al. (2016) investigated the relationship between VC market share and the stake of VC firms in portfolio companies, although they found an insignificant relationship between reputation proxies and post-IPO financial distress among U.S. firms.

The reputation of VC firms is crucial not only for the investee firms but also for the VCs themselves. A strong VC reputation facilitates future fundraising and enhances the investee firm's credibility in capital markets. Studies by Baker & Gompers (2003), Krishnan et al. (2006), Megginson et al.

(2016), and Nahata (2008) demonstrate that VC reputation significantly impacts the performance of investee firms. Krishnan et al. (2006) and Nahata (2008) found a positive relationship between VC firm reputation and post-IPO performance. Baker and Gompers (2003) noted that reputable VC firms influence the governance of investee firms positively. Megginson et al. (2016) reported a lack of significant correlation between VC reputation and post-IPO financial distress but observed a positive link between VC reputation and post-IPO performance.

In our study, we assess VC firm reputation based on the funds raised from the market. We categorize VCs above the median fundraising as reputable (RVC = 1) and those below the median as less reputable (RVC = 0).

Our model includes several control variables: firm age (AGE), firm size (SZE), capital expenditure (CAPEX), return on assets (ROA), and GDP. Firm age is calculated as the logarithm of the years since incorporation, as younger firms tend to be more vulnerable to financial distress. The significance of firm size in financial distress studies is supported by Kumar, Rajan, and Zingales (1999), who found that industry characteristics and country environment affect firm size. Wright et al. (2007) also emphasized firm size as a control variable in risk-taking studies. Bhattacharjee and Han (2014) established a significant relationship between firm size and financial distress in the Chinese context. Dang, Li, and Yang (2018) reviewed various proxies for firm size, identifying total

sales, market capitalization, and total assets as appropriate measures.

In this study, we follow the methodology of Bhattacharjee & Han (2014), Dang et al. (2018), Megginson et al. (2016), and Molina & Preve (2012) by using the logarithm of total assets as the measure of firm size. Capital expenditure (CAPEX) represents expenditures incurred for acquiring, maintaining, or upgrading physical assets, indicating asset tangibility. We express capital expenditure as a ratio to total assets, recognizing that the capital intensity varies across industries. Return on assets (ROA) is calculated by scaling total net income by total assets and has been widely used as a measure of firm performance in financial distress studies, including those by Lian (2017). In this study, we include both ROA and GDP as control variable.

Table 1 reports variables definition used in our study.

| *Variable* | *Symbol* | *Description* |
|---|---|---|
| *Dependent Variables* | | |
| Financial Cost | FEXP | We proxy financial cost by finance expense. According to CSMAR database, it is finance expense raising from the fund for operation by non-financial institution, including interest expense (minus interest earn), exchange loss (minus exchange earning) and related commissions. We calculated FEXP as the ratio of financial cost to total assets. |
| *Independent Variables* | | |
| VC backing | VC | VC Dummy variables which are 1 if IPO firms is backed by VC firm otherwise 0 |
| VC Reputation | RVC | VC Reputation is calculated on the bases of the fund raised by the venture capital firm. We took the median of the amount fund raised by the VCs and give VC value 1 if the raised fund amount by the VC is above median and give value zero if the raised fund amount is below the median Dummy variables which is 1 if IPO firms is backed by VC firm otherwise 0 |
| Independent Private Venture Capital | PVC | PVC is dummy variable. It takes value 1 if the IPO firm is backed PVC otherwise 0 |
| Government Venture Capital | GVC | GVC is dummy variable. It takes value 1 if the IPO firm is backed PVC otherwise 0 |
| Bank Affiliated Venture Capital | BVC | BVC is dummy variable. It takes value 1 if the IPO firm is backed PVC otherwise 0 |
| Corporate Affiliated Venture Capital | CVC | CVC is dummy variable. It takes value 1 if the IPO firm is backed PVC otherwise 0 |
| Financial Distress | ZSCR | (Altman, 1968) to measure financial distress for the firms. A high *z*-score mean lower financial distress of the firms while lower value of the *z*-score mean higher financial distress |
| *Control Variables* | | |
| Age of the firms | AGE | Log of IPOs firm years Age |
| Size | SZE | Log of IPO firm total Assets |
| Capital expenditure | CAPEX | Capital expenditure divide by total Assets |
| Return on Asset | ROA | This is calculated as the net income divided by total assets |
| Year | Year | We take the province and the special zone which are in total 34. On the base of IPO firm registration Region |

**Research Methodology**

The primary objective of this study is to examine the impact of venture capital (VC) on the financial expenses of firms. To achieve this, we employed Ordinary Least Squares (OLS) regression in two stages: first, to assess the effect of VC backing on the financial distress of IPO firms, and second, to investigate its impact on the financial costs incurred by these companies. Our main dependent variable is financial expense, while the principal explanatory variable is the VC treatment. The OLS regression models are specified as follows: $Z\_Score_{i,t}=\beta 0+\beta 1\ VC_{i,t}+\beta 2X_{i,t}+\epsilon_{i,t}$. Where $Z\_Score_{i,t}$ represents the financial distress score (Altman or Zmijewski) for firm i at time t. $VC_{i,t}$ is a dummy variable that equals 1 if the firm is VC-backed, and 0 otherwise. $X_{i,t}$ represents a vector of control variables, which may include firm size, age, capital expenditure, return on assets, and industry or macroeconomic variables (e.g., GDP growth). Control Variables: Firm Size: Measured as the logarithm of total assets. Firm Age: Logarithm of years since incorporation. Capital Expenditure (CAPEX): Ratio of CAPEX to total assets. Return on Assets (ROA): Firm profitability, measured as net income divided total assets. Macroeconomic Conditions: GDP growth rate or other economic indicators relevant to China's IPO market. Financial Expense (Cost) Model. This model measures how VC backing reduces financial costs for IPO firms. The dependent variable will be the financial expense (interest expense normalized by total liabilities).

$$Financial\_Cost_{i.t}=\beta 0+\beta 1VC_{i,t}+\beta 2X_{i,t}+\epsilon_i.$$

Financial Cost represents the financial costs for firm. $VC_{i,t}$ is the dummy variable for VC backing. X is the set of control variables, as in the first model (firm size, age, CAPEX, ROA, etc.). For testing of VC reputation. For firms with VC backing, we can also include an additional variable for VC reputation, with a binary variable RVC indicating whether the VC is reputable (1 for reputable, 0 otherwise). $Financial\_Cost_{i,t}=\beta 0+\beta 1VC_{i,t}+\beta 2RVC_{i,t}+\beta 3X_{i,t}+\epsilon_{i,t}$. $RVC_{i,t}$ is a dummy variable indicating whether the VC firm is reputable (based on fundraising, age, or market share). This model allows you to assess whether firms backed by reputable VCs enjoy greater reductions in financial distress and costs. These models, coupled with robustness checks, will allow us to empirically assess the role of venture capital in certifying financial stability and reducing financial costs in Chinese IPOs.

However, one limitation of OLS estimation is its failure to address selection bias (Anderson, Chi, & Wang, 2017; Megginson et al., 2016). Sørensen (2007) noted the presence of selection bias in the choices made by VC firms regarding target companies. Additionally, Lee and Wahal (2004) reported that the selection of target firms by venture capitalists is not random. It is likely that VCs tend to target firms with superior growth prospects. Therefore, controlling for selection bias is essential for accurately assessing the treatment impact of venture capital. To this end, we employed the Propensity Score Matching (PSM) method to mitigate selection bias among the target firms. Given that VCs tend to favor specific firms and geographical regions, this can lead to selection bias and non-randomization. We controlled for these biases using the PSM method, which is vital for selecting a control group with characteristics. Similarly to those of VC-backed IPO firms. Addressing the issues of selection bias and non-randomization is critical for constructing a control group to compare financial expenses with those of the treated group (VC-backed IPO firms). Differences in the characteristics of VC-backed firms and non-backed firms, as identified by Lee and Wahal (2004) and Bradley and Jordan (2002), highlight the potential for selection bias. To mitigate this issue, we utilized the Nearest Neighbor Matching and Kernel Matching methods, which account for endogenous selection in matching treated and control groups. Propensity Score Matching (PSM) is used to control for endogeneity and selection bias, we used Propensity Score Matching (PSM). This helped us compare VC-backed firms with non-VC-backed firms that have similar characteristics. PSM will estimate the likelihood of a firm receiving VC based on observable characteristics (e.g., size, age, industry, and region).

**5. Results and Discussions:** In our study, we examine the certification hypothesis of VCs in relation to the financial expenses of Chinese IPO firms. Initially, we analyze the impact of VCs on financial distress, followed by an investigation of their effect on financial costs. Using OLS regression, we found that VC-backed companies are not only financially healthier but also incur lower financial costs compared to non-backed firms. These findings

support our expectation that VC backing enhances the financial stability of IPO firms, consequently reducing their financial expenses. The screening process employed by VCs likely leads them to select high-performing firms, which in turn sends positive signals to the market and contributes to lower financial costs. This potential selection bias necessitated the use of the PSM method to control for it during the VC screening process. Table 1 presents the regression results. The analysis reveals a positive relationship of 20.93% between VC backing and the Altman (2000) Z-score, while the second proxy for financial distress, the Zmijewski (1984) score, shows a negative relationship of -11.25%. These results indicate that VC-backed firms are financially more robust compared to their non-backed counterparts. Table 2 provides ATT estimation results using the Nearest Neighbor and Kernel matching methods. The ATT results indicate a decrease in the VC treatment impact to 16.8% (Altman Z-score) and -9.5% (Zmijewski score) after controlling for selection bias through propensity score matching. In our second model, which assessesthe relationship between VC treatment and financial costs, the regression results reveal a significant negative relationship with an impact of 0.042% at the 5% significance level. When accounting for selection bias using both the Nearest Neighbor and Kernel methods, the results indicate that the Kernel method yields a stronger impact of 0.01% at the 1% significance level.

These findings underscore the role of VC backing in certifying firms within the market, significantly reducing their financial costs. Additionally, we investigated the impact of VC reputation on financial distress and costs. Reputable VC firms demonstrated a stronger influence on reducing both financial costs and distress compared to less reputable counterparts, with regression results of 34.55%, -17.54%, and -0.25% for the Altman, Zmijewski scores, and financial cost, respectively. Finally, we assessed the impact of different types of VCs on the financial costs of IPO firms. Our analysis revealed that only independent VCs significantly reduced financial costs, while corporate and bank-affiliated VCs exhibited a positive relationship with financial costs. This disparity may be attributed to the nature of the deals and the firms selected by the venture capitalists. Overall, our findings align with our initial hypotheses, demonstrating that venture capital firms mitigate financial distress and costs for their portfolio companies. Furthermore, the reputation and type of VC play a crucial role in the certification process within the capital market, highlighting the significant impact of reputable VCs on reducing financial distress and expenses for backed firms.

**Table 2** Table 1 reports the OLS regression results for the financial distress and cost. The financial distress is measured through Altman (2000) z-score(ZSCOR) and Zmijewski (1984) zm-score(ZMSCOR). Altman (1968) z-score(ZSCOR) has positive relationship with firms stability while Zmijewski (1984) zm- score(ZMSCOR) has negative relationship with firms stability. Financial cost (FEXP)calculated is total financial expense divide by total assets. VC is a dummy variable show backing of IPO firm by VC. Similarly, RVC is dummy represent VC firm's reputation. We find the median of the fund raised by VC firms if the VC firm above the medina we give RVC value 1 otherwise 0. We used control variables in regression model. AGE is age in years of the firms from its incorporation to the reporting year. SZE is size of the firms it is calculated as the log of the total assets. ROA is return on asset. We used GDP growth for controlling the economic performance. Table 1 reports 6 models regression result. In the first three (1) (2) and (3) models we investigated the VC backing impact financial distress and cost. We are expecting positive relationship between VC backing and ZSCR while negative relationship between VC and ZMSCR and FEX. In the last three models (4)(5) and (6) we drew relationship between VC reputations (RVC) and financial distress proxy by ZSCR and ZMSCR and financial cost (FEXP). We are expecting positive relationship between RVC and ZSCR while negative relationship between RVC and ZMSCR and FEXP. All results are according to the study expectations. While p***, p** and p* shows significance level at 1% 5% and 10% respectively.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | ZSCR | ZMSCR | FEXP | ZSCR | ZMSCR | FEXP |
| VC | .20935*** | -.11252*** | -.00042** | | | |
| | (.03939) | (.01958) | (.0002) | | | |
| AGE | .02709 | -.02257* | -.00041*** | -.00951 | .03133 | -.00075** |
| | (.02333) | (.01159) | (.00012) | (.05441) | (.0284) | (.00029) |
| SZE | -.74362*** | .43042*** | -.0009*** | -.93836*** | .53005*** | -.00086*** |
| | (.01494) | (.00742) | (.00008) | (.04987) | (.02604) | (.00029) |
| CAPX | -9.12907*** | .5816*** | -.01274*** | -7.98886*** | .17417 | -.00796* |
| | (.32156) | (.15978) | (.00167) | (.76069) | (.39712) | (.00426) |
| ROA | 21.27182*** | -10.15779*** | .01312*** | 17.71287*** | -8.33834*** | .0108** |
| | (.29492) | (.14654) | (.00181) | (.66836) | (.34892) | (.00425) |
| GDP | -.19888*** | .1544*** | .00108*** | -.135 | .18852*** | .00153*** |
| | (.02976) | (.01479) | (.00015) | (.11208) | (.05851) | (.00058) |
| ZSCR | | | -.00327*** | | | -.00335*** |
| | | | (.00005) | | | (.00014) |
| RVC | | | | .34553*** | -.17542*** | -.00253*** |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | (.084) | (.04385) | (.00045) |
| _cons | 20.55702*** | -12.4426*** | .0286*** | 24.47866*** | -15.05836*** | .02629*** |
| | (.40357) | (.20053) | (.00225) | (1.40186) | (.73184) | (.00813) |
| Observations | 9232 | 9232 | 8902 | 1537 | 1537 | 1452 |
| R-squared | .49946 | .497 | .42528 | .46762 | .41774 | .40614 |
| Year Dummy | YES | YES | YES | YES | YES | YES |

***Standard errors are in parentheses *** p<.01, ** p<.05, * p<.1***

**Table 3** reports results of average treatment with treated using two propensity matching methods Differences between VC backed () and non-VC backed IPOs (1155 firms). Table presents selection bias adjusted average indices measuring financial distress and financial cost differences between VC- and non-VC-backed IPO firms (Average effect of Treatment on the Treated--ATT), their standard errors and 95% confidence intervals. Each VC-

| *Financial Distress (ZSCR, ZMSCR) and Financial Expense (FEXP)* | ZSCR | ZMSCR | *FEXP* |
|---|---|---|---|
| ***ATT estimation with Nearest Neighbor Matching Method*** | *0.168**** | *-0.095**** | *-0.000 **** |
| *Standard errors* | *0.075* | *0.012* | *.0001064* |
| *[95% Conf. Interval] (BC)* | *[.1137346 .2917584]* | *[-.1297573 -.0603751]* | *[-.0005654; -.0003157]* |
| *Obs. Treatment* | *2705* | *2705* | *2705* |
| *Obs. Control* | *2035* | *2035* | *1979* |
| *Obs.Total* | *9236* | *9236* | *9236* |
| *t. statistics* | *2.252* | *-7.608* | *-3.970* |
| ***ATT estimation with the Kernel Matching*** | *0.167**** | *-0.095**** | *-0.001**** |
| *Standard errors* | *0.043* | *0.027* | *0.000* |
| *[95% Conf. Interval] Biased Corrected (BC)* | *[.0983826 .2057139]* | *[-.1195435 -.0569603]* | *[-.000962; -.000807]* |
| *Obs. Treatment* | *2705* | *2705* | *2705* |
| *Obs. Control* | *6508* | *6508* | *6527* |
| *Obs.Total* | *9236* | *9236* | *9236* |
| *t. statistics* | *3.868* | *-3.498* | *-9.480* |

backed IPO is matched with one or many control IPOs using the Near Neighbor Kernel matching method. The estimates are based on firms' size, firm

age, return on asset, GDP and years. Bias-adjusted 95% confidence intervals appear below the standard errors.

******p<.01, **p<.05, *p<.1***

**Appendix**

**Table 4** reports different types of venture capital certification impact on IPO firm financial cost. We investigated independent private venture capital (PVC) government venture capital (GVC) corporate affiliated venture capital (CVC) and bank affiliated venture capital impact on firm financial cost. Our regression result show that only independent private venture capital significantly reducing financial cost of the firms. While government venture capital (GVC) and corporate venture capital has positive relationship with firm financial cost. This mean that the financial cost of the IPO firm backed by government (GVC) and corporate venture capital (CVC) is increased. While bank affiliated venture capital (BVC) has insignificant relationship. We controlled firm financial distress (ZSCR) firms age (AGE) firm size (SZE) capital expenditure (CAPEX) return on asset (ROA) and gdp. We calculated firm financial distress through Altman (2000) z-score(ZSCR). The negative relationship of financial distress with financial cost mean

| | (1) FEXP | (2) FEXP | (3) FEXP | (4) FEXP |
|---|---|---|---|---|
| PVC | -.00258*** | | | |
| | (.00045) | | | |
| ZSCR | -.00337*** | -.0034*** | -.00329*** | -.00342*** |
| | (.00014) | (.00014) | (.00014) | (.00014) |
| AGE | -.00074** | -.00083*** | -.00076*** | -.00081*** |
| | (.00029) | (.00029) | (.00029) | (.00029) |
| SZE | -.00114*** | -.00114*** | -.0009*** | -.00111*** |
| | (.00029) | (.00029) | (.00029) | (.0003) |
| CAPEX | -.00796* | -.00972** | -.00651 | -.00939** |
| | (.00425) | (.00429) | (.00425) | (.00432) |
| ROA | .01005** | .01093** | .01064** | .01132*** |
| | (.00425) | (.00429) | (.00423) | (.00428) |
| GDP | .00156*** | .00173*** | .00141** | .00171*** |
| | (.00058) | (.00059) | (.00058) | (.00059) |
| GVC | | .00211*** | | |
| | | (.00081) | | |
| CVC | | | .0037*** | |
| | | | (.00056) | |
| BVC | | | | .00059 |
| | | | | (.00091) |
| _cons | .03249*** | .03002*** | .02589*** | .02953*** |
| | (.0081) | (.00817) | (.00809) | (.00831) |
| Observations | 1452 | 1452 | 1452 | 1430 |
| R-squared | .40674 | .39604 | .41119 | .39252 |
| Year Dummy | YES | YES | YES | YES |

*Standard errors are in parentheses*
**** p<.01, ** p<.05, * p<.1*

that distress firm has increased financial cost compared to sound firms.

**Table 5 Descriptive Statistics**

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| FEXP | 8906 | .005 | .011 | -.051 | .178 |
| VC | 9236 | .293 | .455 | 0 | 1 |
| RVC | 1537 | .477 | .5 | 0 | 1 |
| PVC | 1537 | .58 | .494 | 0 | 1 |
| GVC | 1537 | .083 | .276 | 0 | 1 |
| CVC | 1537 | .206 | .404 | 0 | 1 |
| BVC | 1515 | .073 | .26 | 0 | 1 |
| VCDST | 1537 | .349 | .477 | 0 | 1 |
| ZSCR | 9236 | 3.744 | 2.42 | -33.002 | 10.885 |
| AGE | 9236 | 2.579 | .788 | 0 | 3.584 |
| SZE | 9236 | 21.582 | 1.221 | 18.524 | 28.509 |
| CAPEX | 9232 | .067 | .058 | 0 | .642 |
| ROA | 9236 | .051 | .061 | -1.96 | .871 |
| GDP | 9236 | 8.106 | 1.62 | 6.7 | 14.231 |

**Table 6** Matrix of correlations

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) FEXP | 1.000 | | | | | | | | | | | | | |
| (2) VC | . | . | | | | | | | | | | | | |
| (3) RVC | -0.153 | . | 1.000 | | | | | | | | | | | |
| (4) PVC | -0.150 | . | 0.353 | 1.000 | | | | | | | | | | |
| (5) GVC | 0.094 | . | -0.253 | -0.354 | 1.000 | | | | | | | | | |
| (6) CVC | 0.215 | . | -0.381 | -0.603 | -0.153 | 1.000 | | | | | | | | |
| (7) BVC | -0.031 | . | 0.282 | -0.320 | -0.081 | -0.139 | 1.000 | | | | | | | |
| (8) VCDST | -0.185 | . | 0.059 | -0.006 | -0.112 | 0.048 | 0.110 | 1.000 | | | | | | |
| (9) ZSCR | -0.596 | . | 0.019 | 0.034 | -0.073 | -0.073 | 0.032 | 0.095 | 1.000 | | | | | |
| (10) AGE | -0.038 | . | 0.032 | 0.039 | -0.004 | 0.005 | -0.050 | -0.015 | 0.027 | 1.000 | | | | |
| (11) SZE | 0.143 | . | 0.161 | -0.013 | 0.024 | -0.110 | 0.194 | 0.041 | -0.399 | -0.067 | 1.000 | | | |
| (12) CAPEX | 0.079 | . | 0.012<br>0.010 | 0.022<br>-0.040 | 0.079<br>0.022 | -0.037<br>-0.028 | -0.010<br>0.071 | -0.121<br>0.037 | -0.130<br>0.523 | 0.072<br>0.037 | -0.059<br>-0.070 | 1.000<br>0.083 | | |
| (13) ROA | -0.269 | | | | | | | | | | | | 1.000 | |
| (14) GDP | 0.008 | . | -0.078 | -0.041 | 0.004 | 0.123 | -0.089 | 0.021 | 0.214 | 0.218 | -0.304 | 0.204 | 0.187 | 1.000 |

**Declaration of Interest Statement**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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The authors affirm that all views and findings expressed in this paper are solely their own and do not reflect those of any affiliated institutions.

**Conclusion and Recommendations**

This study investigates the role of venture capital (VC) certification in reducing financial costs and distress among portfolio firms. Using a dataset of 1,683 Chinese non- financial IPOs from 2006 to 2016, we assess whether VC-backed IPO firms face lower financial distress post-listing compared to their non-backed peers, and whether these firms benefit from reduced financial costs. Additionally, we examine how the risk of financial distress and financial costs vary across firms based on the reputation and type of VC backing. Our empirical findings, based on regression analysis and propensity score matching, demonstrate that VC-backed IPOs exhibit a significantly lower risk of financial distress and reduced financial costs after controlling for key firm characteristics such as size, age, and return on assets. These results support either the screening hypothesis, the treatment hypothesis, or both. The robustness of these findings is confirmed across multiple measures of financial distress, including the Altman (2000) and Zmijewski (1984) scores.

Furthermore, our analysis reveals that firms backed by more reputable VC firms tend to experience lower levels of financial distress and financial costs, highlighting the heightened certification effect provided by high-reputation VC firms. Notably, only independent venture capital firms were found to have a substantial positive impact on reducing financial costs. These findings contribute to ongoing policy discussions surrounding venture capital's role in emerging economies like China. In the wake of the 2008 global financial crisis, policymakers and regulators have expressed concerns about the risks of bringing immature firms to the public markets through IPOs, which could negatively affect the broader financial system. Our results suggest that the VC industry plays a crucial role in mitigating these risks by certifying IPO firms and significantly reducing their financial costs.

Policymakers should prioritize the development of a supportive environment for venture capital, recognizing its pivotal role in reducing financial distress and enhancing the financial performance of emerging firms. Encouraging Reputable VC Firms: Policies that promote the growth and visibility of reputable VC firms should be enacted, as these firms are better positioned to mitigate financial distress and lower costs for their portfolio companies. Strengthening Regulatory Frameworks: A regulatory framework that encourages the activity of independent VC firms, which have been shown to effectively reduce financial costs, should be implemented to further support market stability. Entrepreneurial Education: It is crucial to develop educational programs that inform entrepreneurs of the potential benefits of seeking venture capital, particularly from reputable firms. Such initiatives can encourage more firms to pursue VC funding as a strategy for long- term financial health and market success. By implementing these recommendations, policymakers and regulators can enhance the role of venture capital in promoting financial stability and supporting sustainable growth in the IPO market.

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