Foregone Growth and Missing IPO: Effects of Delisting Risk from the HFCAA*

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Abstract

Geopolitical risk shapes the real economy through both aggregate uncertainty and targeted geoeconomic tools. This paper studies the Holding Foreign Companies Accountable Act (HFCAA) as a financial restriction on Chinese firms' access to U.S. equity markets and quantifies how delisting risk affects firms' investment and financing decisions. Using the SEC's adoption of the HFCAA Final Rule in December 2021 as a shock, we compare U.S.-listed China Concept Stocks (CCS) with comparable Hong Kong CCS in a difference-in-differences framework. At the intensive margin, the growth rate of innovation investment of U.S.-listed Chinese firms falls by 4 to 12 percentage points. The result is robust to self-selection in IPO location choices and consistent with heterogeneous effects of the HFCAA across firms that differ in delisting exposure, reliance on equity financing, and perceived risk. At the extensive margin, post-HFCAA Chinese issuers in the U.S. are significantly smaller and of lower quality, raising about 20 percent less in IPO proceeds. The relative attractiveness of U.S. exchanges declines, with 7 to 10 percent of Chinese issuers switching from U.S. to Hong Kong listings.

Keywords: IPO, Innovation, Geopolitical Risk, HFCAA, China Concept Stock

JEL Code: G15, F30, O30, G32, F65

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1 Introduction

Over the past decade, geopolitical risk (GPR)—the threat, occurrence, and escalation of wars, terrorism, and political tensions that destabilize international relations—has intensified, raising concerns among policymakers, investors, and corporate managers (Caldara and Iacoviello, 2022). A growing literature measures global GPR and traces its effects on real activity, investment, trade, supply chains, and external financing. Beyond aggregate GPR, Clayton, Maggiori and Schreger (2025) emphasize hegemonic power in the global economy and classify geoeconomic tools into trade restrictions, industrial policy, financial restrictions, and macroeconomic restrictions. Trade and industrial policies have attracted considerable attention, while financial restrictions on equity-market access have received less direct scrutiny. In this paper, we study the Holding Foreign Companies Accountable Act (HFCAA) as a financial policy tool that restricts Chinese firms' access to U.S. public equity markets and examine how it reshapes corporate investment and financing decisions.

Since the mid-1980s, foreign firms have increasingly cross-listed on U.S. exchanges via American Depositary Receipts (ADRs) to access capital and enhance trading liquidity. Early evidence surveyed in Karolyi (2006) documents sizable benefits of cross-listing, including valuation premia, lower cost of capital, higher liquidity, and stronger investor protection. From around 2005 onward, firms from Mainland China rapidly expanded their ADR issuance, eventually accounting for approximately half of ADRs originating from emerging economies (Dong, Feng, Wei and Wu, 2025). At the peak in May 2021, 248 Chinese firms were listed on the major U.S. stock exchanges, with a total market capitalization of approximately $2.1 trillion, as reported by the U.S.-China Economic and Security Review Commission.[1]

Witt, Lewin, Li and Gaur (2023) document a gradual U.S.-China decoupling over the past decade, spanning trade since the mid-2000s and FDI since 2016. Decoupling pressures have also extended to financial markets. Since the late 2000s, Chinese and U.S. authorities have engaged in a protracted dispute over the audit oversight of U.S.-listed Chinese firms. The Public Company Accounting Oversight Board (PCAOB), authorized by the Sarbanes-Oxley Act (SOX), inspects registered audit firms that prepare audit reports on U.S. financial

[1]See U.S.-China Economic and Security Review Commission, available at https://www.uscc.gov/.

statements. The China Securities Regulatory Commission (CSRC) and Ministry of Finance (MOF), which oversee audits of Mainland China-based operations, have historically blocked the transfer of audit documents to foreign regulators on grounds of national sovereignty, state secrets, and personal information protection.

As U.S.-China tensions escalated after 2018, U.S. regulators intensified oversight of Chinese firms through the HFCAA. Figure 1 provides a detailed timeline of the HFCAA, which was first introduced in the U.S. Senate on March 28, 2019, signed into law on December 18, 2020, and accompanied by finalized rules in December 2021. The HFCAA delegates enforcement authority to the PCAOB, requiring the U.S. Securities and Exchange Commission (SEC) to identify public companies that engage foreign accounting firms and to mandate full disclosure of their accounting filings, including 20-F, 40-F, 10-K, and N-CSR.[2]

⟨ Figure 1 is about here ⟩

However, these disclosure requirements collide with China's domestic data-governance regime, including the Cybersecurity Law (2017),[3] the Personal Information Protection Law (2021),[4] and the Data Security Law (2021), which prohibits the unauthorized transfer of important domestic data to overseas jurisdictions.[5] The Didi Chuxing case illustrates the tension. Two days after its NYSE listing on June 30, 2021, Didi was placed under cybersecurity review by the Cyberspace Administration of China. The investigation concluded that the firm had illegally collected and processed user data in violation of the three statutes above. Didi was forced to delist from the NYSE and fined more than RMB 8 billion.

Between March 30, 2022, and February 1, 2023, the SEC identified 186 Chinese companies listed on U.S. exchanges that employed accounting firms based in Hong Kong or Mainland China, over which the PCAOB did not have full inspection access. These 186

[2]See U.S. Securities and Exchange Commission, Holding Foreign Companies Accountable Act Disclosure, Release No. 34–93701, available at https://www.sec.gov/files/rules/final/2021/34-93701.pdf.

[3]Cybersecurity Law of the People's Republic of China, Article 37. Critical information infrastructure operators must store domestically collected personal information and important data in mainland China; outbound transfers require security assessment.

[4]Personal Information Protection Law of the People's Republic of China, Article 38. Cross-border transfers of personal information require statutory safeguards, including security assessment, certification, standard contracts, or other prescribed mechanisms.

[5]Data Security Law of the People's Republic of China, Articles 31 and 36.

firms, including prominent names such as Alibaba, Baidu, and JD.com, appear on the "Provisional list of issuers identified under the HFCAA" publicly available on the SEC website.[6] Under the (amended) HFCAA, if these firms fail to comply with PCAOB audit inspection requirements for three (two) consecutive years, the SEC is authorized to ban trading and eventually delist them from U.S. exchanges.

Following rounds of intensive negotiations between Chinese and U.S. authorities, and the voluntary delisting of state-owned Chinese firms from the NYSE, the CSRC, MOF, and PCAOB reached an agreement on the U.S.-China audit dispute on August 26, 2022. U.S. officials described the agreement as a necessary but not sufficient step toward securing the PCAOB's complete access to inspect and investigate audit firms in mainland China and Hong Kong.[7] Although temporarily suspended, the delisting risk persists, as the HFCAA remains legally valid, the provisional delisting list is still publicly accessible, and U.S.-China decoupling shows no signs of reversal. During the first quarter of Donald Trump's second presidential term, his administration imposed reciprocal tariffs, initiated Section 232 trade investigations, and launched the Clean Network Initiative, aiming to restrict China's access to sensitive technologies such as semiconductors, artificial intelligence, quantum computing, and biotechnology, as outlined in the National Security Presidential Memorandum (NSPM).[8] The NSPM specifically references a review of auditing standards for Chinese firms, signaling a probable resumption of HFCAA enforcement. Indeed, on April 9, 2025, minutes after China announced its retaliatory tariffs on the U.S., Scott Bessent, U.S. Treasury Secretary, told Fox News in a morning interview, "Everything's on the table," including the possibility of removing Chinese companies from U.S. stock exchanges.

These developments raise a fundamental question: how does regulatory-induced delisting risk arising from geopolitical tension affect existing firms' investment decisions and reshape prospective issuers' IPO location choices? In this paper, we quantify the effects within a difference-in-differences (DID) framework, using the SEC's adoption of the HFCAA Final

[6]Holding Foreign Companies Accountable Act, available at https://www.sec.gov/rules-regulations/holding-foreign-companies-accountable-act.

[7]The fact sheet of Statement of Protocol, available at https://pcaobus.org/news-events/news-releases/news-release-detail/fact-sheet-china-agreement.

[8]The National Security Presidential Memorandum, available at https://www.whitehouse.gov/presidential-actions/presidential-memoranda/.

Rule as an exogenous shock that converted a "threat on paper" into an enforceable delisting Act for China concept stocks (CCS) on U.S. exchanges.

Identification requires a control group exposed to the same macroeconomic shocks as treated firms but insulated from delisting risk. Chinese firms not listed on U.S. exchanges provide a natural comparison group, as they are subject to the same China-specific shocks, such as the trade war, COVID-19, the tech-sector crackdown, and the broader economic slowdown, while being unaffected by the HFCAA. Among Chinese firms not listed on U.S. exchanges, those listed exclusively on the HKEX are the most suitable control group. Hong Kong and the U.S. are the two primary overseas listing venues for Chinese issuers. The IPO system, listing requirements, and administrative processes in these two markets systematically differ from those in the Mainland Chinese stock markets (Feng, Wei, Wu and Yuan, 2024). Chinese firms listed in Hong Kong and the U.S. also differ markedly from Mainland-listed firms in their industry distribution, firm size, profitability, corporate governance, and growth potential (Feng, Wei, Wu and Yuan, 2025). In addition, the HKEX is positioned as a public market for global investors, making it broadly comparable to major U.S. exchanges. Consistent with this reasoning, as illustrated in Figure 2, the Nasdaq Golden Dragon China Index and the Hang Seng TECH Index, composed primarily of Chinese firms in our treatment and control groups, evolve in broadly similar dynamics between 2020 and 2024, rising to a peak around May 2021 and declining sharply thereafter, with the largest sudden drop in March 2022.

⟨ Figure 2 is about here ⟩

Even among Chinese firms listed in Hong Kong and the U.S., observable and unobservable characteristics may still differ because of distinct listing requirements and investor preferences. If U.S. CCS are positively selected on quality, they may be more resilient to delisting risk, biasing the DID estimate downwards, whereas negative selection would push the estimate in the opposite direction. We therefore employ a Heckman selection model to account for potential endogeneity in IPO location choice across the two markets.

Using panel data from 2014 to 2024 for Chinese firms that listed in the U.S. and Hong Kong between 2009 and 2020, with 2022-2024 as the post-shock window, we estimate how

investment and operating outcomes respond to the HFCAA. Delisting risk compresses market valuations, reducing Tobin's q by roughly 0.6, and slows firm expansion, with total-asset and sales growth declining by 5 to 7 percentage points. Notably, intangible asset growth falls by 4 percentage points, with R&D growth exhibiting the sharpest decline, at 12 percentage points. These findings are robust to a Heckman correction for a modest positive selection bias that arises primarily in intangible investment measures.

We perform a series of robustness and placebo tests. One concern is that concurrent developments, including Hong Kong Stock Exchange IPO reforms and broader U.S.-China decoupling, may confound our results by independently shifting Chinese firms' listing preferences toward Hong Kong. Since Hong Kong's IPO reforms launched in April 2018 and the U.S.-China trade war escalated following the July 2018 tariff, we restrict the sample to 2019-2024 to isolate the net effect of the HFCAA. The findings closely align with the baseline, with some effects becoming even more pronounced. A placebo test on the 2014-2021 window with 2019 as the pseudo shock yields insignificant coefficients, except for a modest negative effect on gross-profit growth. Previously, we interpreted the delisting risk binds when the "threat on paper" is formalized into an enforceable policy. As an alternative, we treat the December 2020 HFCAA enactment as the shock and define 2021-2024 as the post period. The results are quantitatively similar to the baseline estimates.

We further use a multi-dose design to validate the causal interpretation. Of the U.S.-listed Chinese firms, 186 firms were identified by the PCAOB and subject to direct delisting pressure, while the rest are exposed only through spillovers. On-list firms experience larger contractions in operations and investment and a sharper valuation decline than off-list firms. We also examine whether pre-shock dual-listing status moderates firms' responses. Although effects vary across outcomes, dual-listed firms appear more sensitive to delisting risk. Firms with higher NLP-based perceived HFCAA risk likewise display weaker operating and investment outcomes. Finally, we test whether the heterogeneous effects of the HFCAA align with theories emphasizing the role of equity financing. R&D investment, being highly uncertain and largely non-collateralizable, depends critically on equity finance. Consistent with this mechanism, firms with greater debt financing constraints, those that are younger, have lower asset liquidation values, higher intangible asset intensity, more volatile sales growth,

and lower cash reserves, cut R&D more aggressively under delisting risk.

The preceding analysis focuses on Chinese firms listed before the escalation of delisting risk and traces their valuation, operations, and investment responses. However, because the HFCAA was suspended rather than repealed after August 26, 2022, its effects may also operate along the extensive margin by reshaping the IPO location choices of prospective Chinese issuers. We therefore extend the analysis to the quantity and quality of new Chinese listings on U.S. exchanges. After 2022, IPO counts and proceeds diverge. While the number of Chinese firms listing in the U.S. is stable and even rises modestly, aggregate IPO proceeds collapse to less than 5% of their pre-shock level.

This divergence reflects a compositional shift in issuer quality. Post-2022 U.S.-listed Chinese firms are smaller, less growth-oriented, more export-dependent, and more concentrated in ownership than before, while issuing a smaller fraction of primary shares. They are correspondingly less likely to attract pre-IPO financing or board representation from prominent U.S. venture capital investors. Nonetheless, they display stronger accounting fundamentals, with lower leverage and higher profitability. Conditional on firm size and issuance structure, these firms raise approximately 19-21% less in IPO proceeds. Although the valuation premium at issuance on U.S. exchanges persists, potentially sustaining firms' incentives to list in the U.S., it dissipates rapidly. By the end of the listing year, Tobin's q for U.S.-listed Chinese firms is 1.28 lower than that of comparable pre-shock U.S. peers, exceeding the valuation decline observed in the foregone growth analysis for incumbents.

Although absolute listing counts do not fall, we follow Doidge, Karolyi and Stulz (2009, 2017) to ask whether firms with given characteristics become less likely to list in the U.S. after the HFCAA. The results indicate a significant decline in the relative attractiveness of U.S. exchanges following the SEC's adoption of the HFCAA Final Rule, with 7-10% of Chinese firms shifting from U.S. to Hong Kong listings.

The rest of the paper is organized as follows. Section 2 reviews the relevant literature and outlines our main contributions. Section 3 describes the data sources, variable definitions, and empirical methodology. Section 4 reports the empirical results, robustness checks, and discusses the mechanisms underlying foregone growth. Section 5 explores the HFCAA's impacts on IPO quantity and quality. Section 6 concludes the paper.

2 Literature Review

Within the typology of geoeconomic tools proposed by Clayton, Maggiori and Schreger (2025), this paper studies a financial restriction on access to equity markets and quantifies its real effects. We bridge four related but largely separate literatures on geopolitical risk and policy uncertainty, stock market access and innovation, overseas listing decisions, and firms' investment and financing decisions under listing-related policy uncertainty.

2.1 Deglobalization and Geoeconomic Tools

Deglobalization and geopolitical tensions have become central concerns in international finance in the past decade. Since 2020, a growing literature measures aggregate geopolitical risk and documents its adverse impacts on overall economic activities, capital and resource allocation, and firm innovation (Wang, Weiner, Li and Jandhyala, 2021; Caldara and Iacoviello, 2022; Chowdhury, Aram, Javadi and Nejadmalayeri, 2025; Yang, Song, Wei and Li, 2025). Beyond aggregate uncertainty, geopolitical conflict operates through policy instruments that allow hegemonic powers to exert disproportionate influence on other countries and advance geopolitical or economic objectives (Clayton, Maggiori and Schreger, 2025). For corporate finance, the most relevant geoeconomic tools are trade restrictions, industrial policy, and financial restrictions. Evidence on trade restrictions shows that tariffs are largely passed through to importers, raise the costs of reorganizing supply chains, generate spillovers to complementary goods, and produce broader macroeconomic effects, including contracted exports, lower GDP, and currency depreciation in importing countries (Flaaen, Hortaçsu and Tintelnot, 2020; Cavallo, Gopinath, Neiman and Tang, 2021; Grossman, Helpman and Redding, 2024). Industrial policy typically combines support for domestic firms, production subsidies or investment subsidies, entry subsidies, and consolidation policies (Barwick, Kalouptsidi and Zahur, 2025). Export restrictions increasingly operate at the nexus of trade and industrial policy, through which governments restrict foreign firms' access to critical technologies and production inputs. Such restrictions impose sizable costs on domestic technology firms, including declines in market capitalization, profitability, employment, and bank lending (Crosignani, Han, Macchiavelli and Silva, 2026), while depressing both the quantity

and quality of innovation among firms in sanctioning and targeted countries (Cao, De Nicola, Mattoo and Timmis, 2024; Han, Jiang and Mei, 2024).

Global tensions have also pushed governments to widen the use of financial restrictions, including asset freezes, asset expropriation or revenue redirection, and limits on access to international payment systems, as illustrated by the Western sanctions on Russia after the Russia-Ukraine conflict. Compared with targeted financial sanctions, debt-related capital restrictions have less direct effects, potentially mitigating capital-flight risks (Acharya and Vij, 2025; Clayton, Dos Santos, Maggiori and Schreger, 2025), but may also distort market efficiency (Pellegrino, Spolaore and Wacziarg, 2025). By contrast, restrictions on equity market access remain underexplored, despite their central role in supporting innovation. The HFCAA offers a valuable setting to study this channel. Building on prior work that documents adverse stock market effects for U.S.-listed Chinese firms relative to other U.S.-listed Asian firms and dual-listed Chinese firms (Chen, Hu, Xi and Zhu, 2022; Ghosh and Wei, 2024), we extend the analysis to firms' real investment and financing responses.

2.2 Stock Market Access and Overseas Listing

Prior work on stock market accessibility has primarily focused on listing decisions and their implications for firm performance. From an investor protection perspective, Brown, Martinsson and Petersen (2013) show that stronger investor protection and greater equity market access stimulate R&D investment and productivity, whereas credit market development primarily supports tangible investment. Cong and Howell (2021) provide the first direct evidence that IPO suspensions, as a form of policy uncertainty over market access, significantly reduce firms' investment and innovation, with persistent effects after listing.

As the flip side of the same coin, systematic delisting risk has received less attention. SOX provides a natural point, as it raised regulatory requirements and compliance costs for public firms (Chhaochharia and Grinstein, 2007; Wintoki, 2007). These costs have heterogeneous effects, raising delisting probabilities among smaller firms and those less reliant on external capital (Engel, Hayes and Wang, 2007). The "one-size-fits-all" nature of SOX and the structural differences across listing venues complicate the construction of a credible counterfactual (Leuz, 2007). Existing studies mostly document valuation effects (Berger,

Li and Wong, 2005; Litvak, 2007), leaving the implications for firms' real investment and financing decisions less explored.

The literature on overseas listings highlights several benefits of accessing developed capital markets, particularly in the United States. Cross-listed firms gain greater analyst coverage (Foerster and Karolyi, 1999), access international capital at lower cost (Doidge, Karolyi and Stulz, 2004; Hail and Leuz, 2009), enhance liquidity (Foerster and Karolyi, 1998), and signal firm quality to investors (Bailey, Karolyi and Salva, 2006). Moreover, stricter disclosure and regulatory regimes improve governance and real outcomes (Kose, Prasad and Terrones, 2009). Consistent with these mechanisms, firms listed in the U.S. typically exhibit a valuation premium. For Chinese firms, however, overseas listing decisions are shaped by additional institutional considerations. Feng, Wei, Wu and Yuan (2025) document that Chinese firms use overseas listings to circumvent capital controls, reduce listing delays, and access freely exchangeable currencies, even at the expense of lower valuations.

Overseas listings are widespread among Chinese firms, with Hong Kong and the United States serving as the primary venues. Together, these two markets host approximately 1,700 Chinese firms with a combined market capitalization of US$5.4 trillion as of 2021 (Feng, Wei, Wu and Yuan, 2024). Hong Kong offers an open and internationally integrated capital market and operates a currency board with a stable peg to the U.S. dollar. This institutional comparability underpins our empirical design.

2.3 Uncertainty and Foregone Growth

Political and macroeconomic uncertainty dampens firm value by increasing stock return volatility and raising required risk premia (Bekaert, Engstrom and Xing, 2009; Pástor and Veronesi, 2013; Bali, Brown and Tang, 2017). The valuation effect is accompanied by weaker real activity. Firms delay investment and hiring, reduce production, and curtail market expansion, resulting in weaker asset and sales growth (Bloom, 2009; Baley and Blanco, 2019; Fiori and Scoccianti, 2023; Alfaro, Bloom and Lin, 2024). Profit effects may be less immediate because firms can tighten cost controls, but uncertainty is generally associated with lower profitability and higher profitability volatility (Novy-Marx, 2013; Jurado, Ludvigson and Ng, 2015; Binz, 2022).

At the input margin, elevated uncertainty generally reduces hiring and fisical investment (Bloom, 2009; Stein and Stone, 2013; Bloom, 2014; Ghosal and Ye, 2015; Baker, Bloom and Davis, 2016), but less is known about whether it induces differential adjustments among firms' investment margins. Building on the reliable measure of intangible capital developed by Peters and Taylor (2017), Alfaro, Bloom and Lin (2024) find that stock market volatility is negatively associated with both tangible and intangible investment. Since delisting risk is a distinctive form of policy uncertainty that constrains equity market access and raises financing costs, we examine whether it has stronger effects on intangible capital, which is difficult to collateralize due to limited redeployability and valuation uncertainty.

Among investment margins, R&D is particularly informative because it combines real option features for firms' future growth and valuation. Heightened uncertainty leads firms to suspend, sequence, or terminate R&D projects to preserve financial flexibility (Dixit and Pindyck, 1994; D. Li, 2011; Damaraju, Barney and Makhija, 2015), while high adjustment costs can make ongoing R&D spending slow to contract in the short run (Bloom, 2007; Stein and Stone, 2013). Cong and Howell (2021) provide the first evidence that IPO-related policy uncertainty dampens investment and innovation. We extend this logic by testing whether R&D also responds disproportionately to the delisting threat.

2.4 Uncertainty and Missing IPO

Prior work on systematic shocks largely emphasizes the "foregone growth" of listed firms and pays comparatively less attention to IPO activity. This margin is increasingly relevant given the global decline in IPO activity and the rise in delistings since the early 2000s (Bharath and Dittmar, 2010; Gao, Ritter and Zhu, 2013). We organize the potential effects of regulatory risk on IPO activity into three forms of missing IPOs: fewer IPO counts, shifts in issuer characteristics, and reallocation of listings across markets.

The most direct form of missing IPO is fewer new listings. A closely related source of systematic regulatory risk arises from SOX and subsequent reforms. Gao, Ritter and Zhu (2013) document a sharp decline in IPO activity after 2000, but find no evidence that this decline is attributable to SOX-related compliance costs or analyst coverage distortions. Complementary evidence comes from the JOBS Act, which relaxes regulatory barriers and

disproportionately benefits firms with high proprietary disclosure costs, increasing IPO activity by about 25% relative to pre-JOBS levels (Dambra, Field and Gustafson, 2015).

2.4.1 Regulations and Firm Characteristics Shifts

Listing counts alone do not exhaust the impact of systematic shocks on IPO activity, as they may mask shifts in the characteristics of newly listed firms. Doidge, Karolyi and Stulz (2009) provide early evidence that SOX discouraged U.S. listings by firms with concentrated ownership and weaker governance. Building on this work, Doidge, Karolyi and Stulz (2013) show that larger firms from countries with weaker institutions are more likely to pursue global IPOs. Deregulation also reshapes listing composition. The JOBS Act increased IPO activity among firms with high proprietary disclosure costs, especially unprofitable, R&D intensive firms in biotech and pharmaceuticals (Dambra, Field and Gustafson, 2015). Evidence from Japan similarly shows that deregulation shifts IPO cohorts toward high growth but low productivity and unprofitable firms (Takahashi and Yamada, 2015).

The cross-listing literature typically compares foreign firms listed in the United States with domestically listed peers, requiring controls for both firm-level and country-level heterogeneity. Firm-level determinants commonly include size, growth opportunities, leverage, ownership structure, and governance characteristics (Doidge, Karolyi and Stulz, 2007, 2009; Dambra, Field and Gustafson, 2015). However, differences in regulatory environments and economic development across countries often dominate these comparisons, making it difficult to disentangle firm-level effects from country-specific factors. In our setting, Chinese firms choose between Hong Kong and U.S. markets while sharing a common country background, which absorbs much of the cross-country heterogeneity and sharpens identification of firm-level determinants and their responses to regulatory shocks.

2.4.2 Listing Propensity and Stock Market Attractiveness

Doidge, Karolyi and Stulz (2004) document that foreign firms cross-listed in the U.S. enjoy a 16.5% higher Tobin's q than home-country peers, consistent with a governance premium, which declines with financial globalization (Stulz, 1999). This listing premium persists post-HFCAA despite lower issuer quality and smaller IPO share issuance.

Doidge, Karolyi and Stulz (2009) define an exchange as less attractive when it fails to attract listings it would have attracted in the past. They show that SOX altered the composition of new U.S. issuers without diminishing the attractiveness or valuation premium of U.S. exchanges compared to domestic markets. Related work attributes the decline in small-firm IPOs to economies of scale rather than regulatory overreach (Gao, Ritter and Zhu, 2013; Doidge, Karolyi and Stulz, 2017). Although SOX raises regulatory standards and compliance costs, it also confers governance benefits, with heterogeneous effects across firms (Shleifer and Wolfenzon, 2002; Doidge, Karolyi and Stulz, 2004). The HFCAA-induced delisting risk, by contrast, is a largely exogenous and symmetric shock that imposes costs without offsetting benefits and is orthogonal to firm-level characteristics and governance structures. This institutional feature enables a clean DID design to identify how regulatory risk affects listing propensity and market attractiveness.

We position our research as a complement to the growing literature on geopolitical risk and corporate finance. Existing work studies how aggregate geopolitical uncertainty affects firm behavior (Hassan, Hollander, Van Lent and Tahoun, 2019; Caldara and Iacoviello, 2022), while related evidence on specific geoeconomic tools focuses mainly on trade restrictions and industrial policy. Building on Clayton, Maggiori and Schreger (2025), we study financial restrictions using the HFCAA as an exogenous shock to U.S.-listed Chinese firms' access to public equity markets, orthogonal to industry trends and firm fundamentals. This setting enables a DID design that isolates the real effects of the geoeconomic policy.

We contribute to the literature in four respects. First, we provide systematic evidence on the real effects of a geoeconomic policy tool, the restriction of equity market access, quantifying its adverse impacts on firm investment and listing-venue competitiveness. Second, we add to the literature on stock market access by documenting an asymmetric pattern of disinvestment: firms sharply reduce intangible investment and R&D, while employment and tangible capital remain largely unaffected. Third, we extend the literature on listing location by showing how firm-specific characteristics shape Chinese firms' overseas listing choices between the U.S. and Hong Kong. Finally, we offer a transferable framework for studying how regulatory risk reshapes overseas listings through three margins: listing counts, issuer composition, and venue reallocation.

3 Data and Methodology

The treatment group in our foregone growth analysis consists of Chinese firms that listed on major U.S. stock exchanges during 2009-2020, including NYSE [9] and Nasdaq, while the control group comprises firms listed on the HKEX Main Board during the same period. We collect the CCS from Wind Terminal, CSMAR, and S&P Capital IQ, and carefully filter them following Feng, Wei, Wu and Yuan (2024)'s definition.[10] To ensure sample comparability, we follow Chen, Hu, Xi and Zhu (2022) and exclude: (1) state-owned enterprises (SOEs), (2) firms that went public via SPAC, (3) firms listed via reverse takeovers (RTOs) or by way of introduction, and (4) firms with a market capitalization below US$10 million at the time of the SEC's adoption of the HFCAA Final Rule.[11] We also drop firms transferring from the HKEX GEM to the Main Board, as these firms are not making a listing choice between the U.S. and Hong Kong. The final sample comprises 200 U.S. CCS and 630 HK CCS.

3.1 Data Source and Variable

We collect post-listing financial and institutional data from the Wind Terminal, supplemented by the SDC Compustat database. To address potential listing location selection bias, we hand-collect pre-IPO information from the SEC EDGAR database [12] and the official HKEX website,[13] keeping only firms with non-missing values in the first-stage Heckman selection regression. Variable definitions and sources are reported in Table A1.

⟨ Tables 1 and A1 are about here ⟩

Table 1 reports summary statistics by treatment status and period. Panel A displays the outcome variables, including Tobin's q, log growth rates of total assets, sales revenue,

[9] AMEX was acquired by NYSE in 2008.10.01 and renamed as NYSE Amex, those CCS listed in AMEX before are not included in our sample.

[10] The selection criteria are: (a) Incorporated in mainland China, or (b) Headquarters in mainland China, or (c) Controlling shareholder is an individual, company, or state entity in mainland China, or (d) More than 55% of sales revenue comes from mainland China.

[11] While the actual adoption date is December 2, 2021, we use December 31, 2021, the fiscal year-end reporting date, as the reference point for market value to preserve analytical consistency.

[12] SEC EDGAR database, https://www.sec.gov/search-filings.

[13] HKEX website, https://www.hkexnews.hk/index.htm.

and gross profit, log growth rates of employment, tangible and intangible assets, and R&D expenditure. Panel B presents the controls over the full sample period. All variables are winsorized at the 5th and 95th percentiles. Before the shock, U.S. CCS commanded higher market valuations as captured by Tobin's q. On the output side, U.S. CCS exhibited stronger pre-treatment growth in total assets, sales revenue, and gross profit than HK CCS. After 2022, the economic slowdown affects Chinese firms in both markets, but the contraction is markedly sharper for U.S. CCS, whose growth rates fall significantly below those of their Hong Kong peers.

On the input side, the components exhibit distinct patterns. Employment growth is indistinguishable across the two groups before the shock, then declines after 2022 with a more pronounced drop for U.S. CCS. Tangible assets correspond to the "Net book value of fixed assets" in firms' annual reports, while the intangible asset growth rate is defined in Appendix A1. Tangible asset accumulation paths were similar across groups before treatment, and post-treatment U.S. growth slowed without significant divergence. U.S. CCS accumulate both overall intangible assets and knowledge and organizational (K&O) intangibles substantially more rapidly than HK CCS in the pre-treatment period, and this pattern persists post-treatment with diminished magnitude. Among input measures, R&D investment is a flow variable and adjusts more dramatically to delisting risk than other stock-based inputs.

3.2 Methodology

3.2.1 Difference-in-Differences (DID) Model

We apply a difference-in-differences (DID) model to identify the causal effect of HFCAA-induced delisting risk on the operations and investment decisions of U.S. CCS, using HK CCS as the control group.

$$\begin{aligned} Y_{it} = \beta_0 + \beta_1 Treat_i + \beta_2 Post_t + \beta_3 Treat_i \times Post_t + X'_{i,t-1}\boldsymbol{\alpha} \\ + Ind_j + Year_t + Ind_j \times Year_t + u_{it}. \end{aligned} \tag{1}$$

Here, Y_{it} stands for the outcome of interest for firm i in year t, $Treat_i$ is an indicator for exposure to HFCAA delisting risk, equaling one for firms listed on major U.S. stock markets,

and zero for those on the HKEX Main Board. As effective delisting risk crystallized with the SEC's adoption of the HFCAA Final Rule in December 2021, we set $Post_t$ equal to one for 2022 onward. $Treat_i \times Post_t$ is their interaction term. For all outcome variables except the R&D growth rate, we include one-year lagged controls $X'_{i,t-1}$ to mitigate potential reverse causality concerns. For R&D, we use contemporaneous controls $X'_{i,t}$, since this flow variable is less likely to feed contemporaneously into the predominantly stock-based covariates. The summary statistics of the control variables are displayed in Panel B of Table 1. Throughout the sample period, U.S. CCS are younger, smaller, more growth-oriented, and have higher turnover and Tobin's q than their HK peers.

3.2.2 Heckman Selection Model

The Heckman two-step model was originally developed to correct for selection bias arising from systematically missing outcomes (Heckman, 1979). We apply it to absorb pre-existing differences between U.S.- and HK-listed Chinese firms that may affect investments, operations, and valuation, mitigating potential selection bias.

The First Step: Selection Model In the first step, we estimate a probit model and construct the inverse Mills ratio (IMR) from the estimated coefficients.

$$Treat_i = \alpha_0 + Firm_i\boldsymbol{\alpha_1} + Year_t + Ind_j + v_i, \tag{2a}$$

$$Treat_i = \alpha_0 + Firm_i\boldsymbol{\alpha_1} + Macro_t\boldsymbol{\alpha_2} + Ind_j + v_i. \tag{2b}$$

In Model (2), the dependent variable $Treat_i$ equals 1 if firm i is listed in the U.S. $Firm_i$ is a set of firm characteristics that may influence Chinese firms' IPO location choice. Model (2a) includes year and industry fixed effects to absorb potential confounding factors from time-varying events and industry-specific heterogeneity. Model (2b) differs from (2a) only by replacing year fixed effects with a set of time-varying macroeconomic variables. This modification is necessary in the missing IPO analysis, where we estimate the selection model on firms that went public during 2009-2020 and then predict listing venues for the post-HFCAA period. Since year fixed effects are not available out of sample, we use observable

macroeconomic variables to partially absorb aggregate time variation.

⟨ Table 2 is about here ⟩

Table 2 reports summary statistics for pre-IPO indicators. Panel A covers firms listed overseas between 2009 and 2020, which we define as the pre-HFCAA sample, while Panel B covers firms listed between 2022 and 2024. Our selection-correction model for the foregone growth analysis is estimated on the pre-HFCAA sample, as the empirical design requires observations both before and after the adoption of the HFCAA. All continuous variables are winsorized at the 5th and 95th percentiles. In addition to the t-statistic, we report the standardized normalized difference in means (Norm. Diff.) and the Wilcoxon rank-sum test p-value between the treatment and control groups. The Norm. Diff. is given by:

$$\text{Std. Norm. Diff.} = \frac{\bar{X}_T - \bar{X}_C}{\sqrt{\frac{S_T^2 + S_C^2}{2}}}.$$

In practice, a value below 0.25 indicates no substantial pre-treatment imbalance between the two groups (Imbens and Rubin, 2015). Similarly, a Wilcoxon p-value greater than 0.05 implies that we cannot reject the null hypothesis that the two groups are drawn from the same distribution.

Relevant firm-level controls include firm age since establishment. Because the HKEX requires at least three fiscal years of financial statements, HKEX-listed firms tend to be older. Consistent with this, U.S. CCS go public at 8.8 years on average, 5.7 years younger than HK peers. Correspondingly, U.S.-listed firms are relatively smaller in total assets. As shown in Table 3, the HKEX and Nasdaq Global Market,[14] [15] impose profitability and revenue thresholds that are considerably more stringent on the HKEX than on U.S. exchanges (Tsang, 2009). Accordingly, firms with lower or even negative ROA are more likely to list in the U.S. Moreover, compared to large firms, U.S. exchanges attract companies with stronger growth potential, captured by higher sales growth and intangible asset intensity.

[14] Nasdaq Stock Market LLC, Nasdaq Listing Rules, available at https://listingcenter.nasdaq.com/rulebook/nasdaq/rules/Nasdaq%205400%20Series.

[15] There are three boards in Nasdaq, including the Global Selection Market (GS), the Global Market (GM), and the Capital Market (CM). Their listing criteria are lower sequential. So we take GM for comparison, following Tsang (2009).

⟨ Table 3 is about here ⟩

Another regulatory distinction is that the HKEX imposes a statutory minimum public float of 25% at IPO, whereas U.S. exchanges have no such requirement. Most HK CCS issue around 25% of their shares, while their U.S. counterparts issue only 10.56%. WVR is an indicator equal to 1 if a firm is listed with weighted voting rights. While 38% of U.S. CCS have WVR before IPO, virtually none of their HK counterparts do, since WVR was forbidden until the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited became effective on 30.04.2018.[16] The availability of WVR structures in U.S. listings allows entrepreneurs to retain control with less concentrated ownership, consistent with the lower top-five ownership share. Doidge, Karolyi and Stulz (2009) document a valuation premium for U.S. listings. We therefore expect pre-IPO investors with stronger liquidity needs to favor U.S. exchanges through greater secondary share sales. Consistent with this prediction, the average secondary share proportion is about three times higher for U.S.-listed firms than for HK-listed firms.

Prior studies show that firms with internationally experienced managers or foreign venture capital backing are more likely to list abroad (Hursti and Maula, 2007; Cheng and Schwienbacher, 2016), and that VC board representation is associated with higher IPO pricing premiums (Chahine and Goergen, 2011). We therefore expect that involvement of well-known U.S. VCs,[17] particularly through board representation, raises Chinese firms' propensity to list in the U.S. and contributes to higher IPO pricing premiums. Indeed, 30% of U.S.-listed Chinese firms have at least one well-known U.S. VC represented on the board before IPO, five times the prevalence among HK-listed firms. Geographic distance and transportation connectivity may also influence firms' venue choices by reducing communication frictions and mitigating investor home bias (Da, Gurun, Li and Warachka, 2021). We therefore define a transportation convenience indicator equal to one if a direct flight connects the firm's headquarters (or principal place of business) to New York, the location of the NYSE

[16]Hong Kong Exchanges and Clearing Limited (HKEX), Update No. 119, available at https://en-rules.hkex.com.hk/rulebook/update-no-119.

[17]We identify 45 prominent U.S. venture capital firms with international investment experience, including Andreessen Horowitz, Battery Ventures, Bessemer Venture Partners, Greylock, Intel Capital, Kleiner Perkins, Lightspeed Venture Partners, Sequoia Capital, and Warburg Pincus.

and Nasdaq, in the year preceding the IPO.

Based on t-statistics, normalized differences, and the Wilcoxon rank-sum test, all variables except leverage and overseas sales share are significantly associated with listing location choice. We nonetheless retain these two variables in the Heckman specification, as the two groups may experience heterogeneous changes across the pre- and post-shock periods.

The Second Step: Treatment Model Following Heckman (1976), we assume the error terms of the treatment model (u_{it}) and the selection model (v_i) comply with a binary normal distribution, where their mean value is equal to 0, and the covariance matrix follows

$$\begin{bmatrix} \sigma^2 & \rho\sigma \\ \rho\sigma & 1 \end{bmatrix}.$$

We then calculate the inverse Mills ratio (IMR_i) from the probability density function (PDF) and the cumulative distribution function (CDF):

$$IMR_i = \frac{\varphi(\hat{v}_i)}{\Phi(\hat{v}_i)},$$

where $\hat{v}_i$ is the residual of Model (2), $\varphi(.)$ and $\Phi(.)$ are PDF and CDF of the standard normal distribution. The treatment effect Model (3) is similar to our baseline regression model (1), with the only difference being the inclusion of IMR_i.

$$\begin{aligned} Y_{it} = \beta_0 + \beta_1 Treat_i + \beta_2 Post_t + \beta_3 Treat_i \times Post_t + X'_{i,t-1}\boldsymbol{\alpha} + \delta IMR_i \\ + Ind_j + Year_t + Ind_j \times Year_t + u_{it}. \end{aligned} \tag{3}$$

As discussed above, the selection correction term (IMR_i) depends on σ, the standard deviation of the outcome error term, and ρ, the correlation between the outcome and selection errors. In the empirical analysis below, we report $\delta = \rho\sigma$ as the selection-correction estimator. Since σ is nonnegative by construction, the sign of δ reflects the direction of selection (i.e., the sign of ρ), while its magnitude depends jointly on ρ and σ.

4 Foregone Growth

This section examines the foregone growth effects of the HFCAA on China concept stocks listed on U.S. exchanges before the shock. Starting from Tobin's q, we trace how delisting risk affects output and expansion, with emphasis on asymmetric adjustments across employment, tangible and intangible investment, and R&D.

4.1 Heckman Selection: Listing Location Choice

The first stage of the selection model identifies firm characteristics associated with listing on U.S. exchanges. Table 4 reports the results, with Column (1) presenting the probit coefficients and Column (2) reporting the associated marginal effects.

⟨ Table 4 is about here ⟩

Consistent with the descriptive evidence, U.S.-listed Chinese firms are younger, smaller, less profitable, and exhibit greater growth potential. On the governance side, they feature more dispersed or asymmetric ownership, lower public float, and higher secondary share sales at IPO. Information asymmetry also matters, as firms backed by prominent U.S. venture capitalists with pre-IPO board representation are more likely to list in the U.S. Following Loughran and Ritter (2004), we also include the lagged proceeds-weighted first-day return to control for market conditions. The marginal effects indicate that listing venue choice is primarily driven by slow-moving fundamentals (age and size) and corporate structure (voting rights, ownership concentration, and IPO float), with venture capital support and favorable IPO market conditions playing a reinforcing role.

4.2 Baseline Regression

4.2.1 Parallel Trend Tests

Interpreting the interaction term in Equation (1) as the causal effect of delisting risk on firms' decisions requires the Parallel Trends for Event Study (PT-ES) assumption. Let $Y_{i,t}(0)$ denote the outcome for firm i in year t if untreated.

Assumption PT-ES. The average change of $Y_{i,t}(0)$ from $Y_{i,t=g-1}(0)$ is the same between treated and comparison units for all post-treatment periods $t \geq g$, i.e.,

$$\mathbb{E}[Y_{i,t}(0) - Y_{i,t=g-1}(0) \mid Treat_i = 1] = \mathbb{E}[Y_{i,t}(0) - Y_{i,t=g-1}(0) \mid Treat_i = 0].$$

The parallel trends assumption is practically untestable because it relies on the unobserved counterfactual outcome $Y_{i,t}(0)$ for treated firms. Therefore, we assess its plausibility indirectly by testing whether pre-treatment trends in outcome variables differ systematically between the treatment and control groups. This provides an indirect benchmark for the counterfactual differences that would arise post-treatment. Given that the delisting threat intensifies following the SEC's adoption of the HFCAA Final Rule in December 2021, we define the event year as 2022 ($g = 2022$), using 2021 ($t = g - 1$) as the baseline to estimate dynamic treatment effects:

$$Y_{i,t} = \sum_{\tau=1}^{g-2} \beta_\tau \left(\tau_t \times Treat_i\right) + \sum_{\tau=g}^{T} \beta_\tau \left(\tau_t \times Treat_i\right) + \varepsilon_{i,t}. \tag{4}$$

We estimate regressions (4) for all outcome variables of interest, including market valuation, operational outcomes, and investment decisions, and report the corresponding parallel trends test graphs in Figure 3.

⟨ Figure 3 is about here ⟩

Figure 3(a) shows that U.S.-listed Chinese firms enjoy a Tobin's q about one point higher than HK firms before 2021, but about 0.5 points lower thereafter. Asset growth in the treatment group exceeds that of the control by over 10% pre-HFCAA but falls nearly 15% below post-treatment. Sales and gross profit growth follow parallel pre-trends and decline after 2022, with gross profit exhibiting a milder drop and a partial recovery. Panels (e) and (f) show parallel pre-trends in employment and tangible assets, followed by a modest contraction for the treatment group after exposure to delisting risk. Intangible investment in Panel (g) tracks Tobin's q pre-HFCAA and falls sharply, and R&D in Panel (h) exhibits an even larger contraction exceeding 20%.

4.2.2 Market Valuation

Our baseline specification follows Model (1), incorporating year, industry, and industry-by-year fixed effects. We estimate these regressions for all dependent variables of interest. To account for missing observations and potential selection bias, we estimate a two-step Heckman selection model in Equation (3) and report $\delta = \rho\sigma$, the coefficient on the inverse Mills ratio (IMR). Tobin's q measures market expectations of a firm's future value relative to its current assets and investments:

$$\text{Tobin's q} = \frac{\text{Market value of equity} + \text{Book value of total debt}}{\text{Book value of total assets}}.$$

Because Tobin's q embeds market expectations of future value, it is closely linked to growth potential, which in turn correlates with sales growth and intangible asset intensity. Stock turnover is also positively associated with valuation. We therefore include these three additional controls in the Tobin's q regressions beyond those used in other outcome specifications.

Table 5 reports the DID results. Column (4) presents the estimates from Model (1), whereas Columns (1) to (3) present DID regressions that incorporate year, industry, and industry-by-year fixed effects, respectively. Column (5) reports the second-stage results from the Heckman selection model accounting for potential selection bias.

⟨ Table 5 is about here ⟩

Consistent with the summary statistics, U.S. CCS exhibit a pre-HFCAA valuation premium of approximately 0.3, persisting several years after listing, as captured by the coefficient on Treat. Following the increase in delisting risk, Tobin' s q for the treatment group declines by 0.581-0.675 across specifications with alternative fixed effects in Columns (1) to (4), fully offsetting the prior advantage. The Heckman correction in Column (5) indicates that U.S.-listed Chinese firms are positively selected on valuation, although the correction is statistically insignificant. The baseline DID model thus marginally understates the negative effect of the HFCAA, as correcting for positive selection bias produces a slightly larger interaction coefficient of 0.582. Across all specifications, leverage, sales growth, intangible intensity, and turnover are positive predictors of Tobin's q, whereas firm age is negatively

associated with it.

⟨ Figure A1 is about here ⟩

The estimated 0.581-0.675 decline in Tobin's q is smaller than the unconditional mean of 0.94, implying that, conditional on firm characteristics, 61.8%-71.8% of the observed valuation decline is attributable to the delisting risk. At their peak in December 2020, 272 U.S.-listed Chinese firms had a combined market capitalization of USD 2.38 trillion, falling to USD 0.8 trillion by the end of 2024 (Figure A1). This represents a total loss of USD 1.58 trillion, of which USD 0.98-1.13 trillion is attributable to the HFCAA. The estimates are likely conservative, since more than 80 firms delisted between 2021 and 2024 and appear to have been more adversely affected by delisting risk.

4.2.3 Operational Outcomes

Total assets provide a direct measure of operating scale, while sales revenue and gross profit capture, respectively, the level and profitability of operating output. The empirical results for these three variables are reported in Table 6. Columns (1), (3), and (5) present the baseline DID estimates, while Columns (2), (4), and (6) report the corresponding two-step Heckman-corrected estimates.

⟨ Table 6 is about here ⟩

Conditional on year, industry, and industry-by-year fixed effects, both U.S.- and HK-listed Chinese firms experience a slowdown in total assets and sales revenue growth post-HFCAA. The total asset growth rate of U.S.-listed Chinese firms is 4.74 percentage points lower in the baseline specification and 4.85 percentage points lower after correcting for positive selection via Heckman, both statistically significant at the 1% level. Similar patterns emerge for sales revenue. Despite the general decline in sales growth among Chinese firms listed abroad, U.S.-listed Chinese firms experience an additional 7.71 (7.74) percentage point reduction in sales growth without (with) listing-venue selection correction. Consistent with Binz (2022), our finding suggests that gross profit does not necessarily decline in the short run under heightened uncertainty and weakening sales, as firms partially offset these pressures through cost adjustments.

4.2.4 Investment Decisions

Standard theory predicts that uncertainty shocks reduce firms' capital investment broadly, encompassing both tangible and intangible assets (Alfaro, Bloom and Lin, 2024). However, delisting risk is a distinctive financial shock that restricts firms' access to equity markets, which is the primary source of financing for high-risk, high-return intangible investments, whereas debt financing primarily supports tangible, pledgeable assets (Brown, Fazzari and Petersen, 2009; Brown, Martinsson and Petersen, 2013). We therefore place great emphasis on whether firms adjust different investment forms asymmetrically to the HFCAA.

Standard production function inputs are labor and physical capital. We measure labor by headcount and tangible capital by net fixed assets. Intangible assets are non-physical assets that generate economic benefits for firms, including measurable forms such as intellectual property rights and franchise rights, as well as less directly observable sources like brand reputation, corporate culture, and human capital. However, the balance sheet item "goodwill and intangible assets" records only the excess of the purchase price over the fair value of the acquired identifiable net assets in M&A, plus identifiable and valued intangibles such as patents, licenses, permits, and franchise rights. Internally generated intangible assets, such as brands, corporate reputation, and human capital, are neither identifiable nor measurable. Moreover, under both U.S. [18] and HK [19] accounting standards, R&D expenditures are expensed as incurred, reflecting accounting conservatism. Thus, reported balance sheet values significantly understate firms' intangible capital. Following Peters and Taylor (2017), we construct knowledge and organizational (K&O) intangible capital by accumulating R&D expenditures and a fraction of SG&A expenses with depreciation, and combining the result with reported intangible assets.[20] Further details are provided in Appendix A1.

[18] Firms listed in the U.S. exchanges are required to comply with U.S. Generally Accepted Accounting Principles (U.S. GAAP), R&D are generally required to be expensed under ASC 730, with only rare exceptions specified in supplementary guidance.

[19] All companies in Hong Kong, including listed firms, are required to comply with the Hong Kong Financial Reporting Standards (HKFRS). R&D expenditures, governed by HKAS 38, are primarily expensed as incurred, though the standard provides relatively more flexible criteria for capitalization.

[20] K&O intangible assets are constructed by accumulating R&D and a fraction of SG&A expenditures and depreciating the resulting stock over time. Specifically, intangible investment is defined as $I_t = R\&D_t + 30\%SG\&A_t$, and the intangible capital stock evolves according to $K_t = (1-\delta)K_{t-1} + I_t$. The depreciation rate for R&D follows W. C. Y. Li and Hall (2020), while that for SG&A is 15%.

⟨ Table 7 is about here ⟩

All regressions reported in Table 7 include year, industry, and industry-by-year fixed effects and correct for potential selection bias. Although overseas-listed Chinese firms experience a general slowdown in labor, fixed capital, and intangible investment after 2022, the HFCAA imposes no additional adverse effect on employment or tangible investment. Meanwhile, intangible investment, especially K&O capital, is significantly affected, with an accumulation rate 3.85 percentage points lower than in the pre-HFCAA period after correcting for positive selection bias. In flow terms, the growth rate of R&D investment, an important component of intangible capital, declines even more sharply, by 11.65 percentage points. Given a pre-HFCAA R&D growth rate of 19.8% for U.S. CCS, this implies a reduction of about 58%. Notably, the first-stage results in Table 4 indicate that Chinese firms with higher growth potential prefer U.S. listings. This pattern persists several years after IPO, as the coefficients on the inverse Mills ratio in the intangible asset growth regressions remain consistently positive in Columns (3) and (4).

4.3 Robustness Checks

4.3.1 Balanced Panel

We narrow the sample window for three concerns. First, the U.S.-China trade war, which escalated after the July 2018 tariff round, may have depressed the valuations of U.S. CCS, weakened their growth and profitability, and thereby reduced investment. Second, Hong Kong's April 2018 IPO reforms relaxed listing standards and may have attracted younger, higher-growth firms to HKEX, causing the DID interaction to partly capture the relative improvement of Hong Kong firms. Third, our baseline window, with eight pre-event years (2014-2021) but only three post-event years, is unbalanced and raises the risk that confounding shocks contaminate the pre-period. Therefore, we narrow the sample to 2019-2024 (2019–2021 pre, 2022–2024 post), ensuring that both the trade war and HKEX IPO reforms span the full window and enabling cleaner identification of the HFCAA's effects.

⟨ Table 8 is about here ⟩

Table 8 reports Heckman-corrected regression outcomes. Tobin's q declines by 0.64, exceeding the baseline estimate. The growth rate of total assets decreases by 6.39 percentage points, again exceeding the baseline in both magnitude and statistical significance. However, the effect on sales growth becomes statistically insignificant over this period. On the input side, patterns are broadly consistent, although somewhat statistically weaker. While employment and tangible investment continue to display no differential trends, delisting risk is associated with 3.81 and 9.83 percentage-point declines in the growth rates of K&O intangible assets and R&D expenditure, respectively.

4.3.2 Placebo Test

Existing studies document that export control policies following the U.S.-China trade war, such as the Entity List, affect the inputs and outputs of both U.S. and Chinese firms (Cao, De Nicola, Mattoo and Timmis, 2024; Han, Jiang and Mei, 2024; Crosignani, Han, Macchiavelli and Silva, 2026). A concern is that the operational retrenchment and investment cutbacks observed after 2022 may reflect these earlier policy shocks rather than the HFCAA. We perform a placebo test over 2014-2021, treating 2019 onward as the post period, using firms listed in 2009-2018 to assess whether U.S.-listed CCS show similar contractions.

⟨ Table 9 is about here ⟩

Nearly all interaction terms are insignificant, indicating that pre-2019 U.S.-China decoupling policies do not not exert statistically detectable adverse effects on Chinese firms listed on U.S. stock markets. The only notable change is an 11.68 percentage-point decline in gross profit growth, marginally significant at the 10% level. With sales growth remaining relatively stable, the result is consistent with trade decoupling modestly increasing firms' cost of goods sold (COGS) and SG&A expenses, thereby compressing profit margins. Importantly, trade decoupling policies primarily target Chinese firms with direct trade exposure and technology ties to U.S. firms, a population that does not necessarily overlap with Chinese firms listed on U.S. exchanges.

4.3.3 Sensitivity Analysis

In an alternative specification, we take December 18, 2020, when President Trump signed the HFCAA into law, as the event date and define 2021 onward as the post-shock period, conducting a sensitivity analysis on the full 2014-2024 sample.

⟨ Table 10 is about here ⟩

Results are consistent with the baseline in both direction and statistical significance. The growth slowdown in K&O intangible assets and R&D expenditure becomes more pronounced, while the effects on total asset growth and Tobin's q are somewhat attenuated. This pattern is consistent with firms scaling back investment in anticipation of potential delisting risk, although the absence of a clearly defined list of affected firms and the policy uncertainty surrounding the transition to the Biden administration in early 2021 likely muted the perceived threat, producing a more gradual valuation response.

4.4 Heterogeneity Analysis: Multi-dose DID

4.4.1 The HFCAA List

Our baseline treats all U.S.-listed Chinese firms are treated as exposed to HFCAA risk relative to HK peers. However, the HFCAA directly targets PCAOB-identified firms, which face immediate delisting pressure, while others are affected mainly through spillovers. We therefore split U.S.-listed firms into on-list and off-list groups to examine heterogeneous responses in valuation, operations, and investment. We extend the DID model (1) by replacing Treat_i with OnList_i and OffList_i along with the associated interaction terms, as follows,

$$Y_{it} = \beta_0 + \beta_1 OnList_i + \beta_2 OffList_i + \beta_3 Post_t + \beta_4 OnList_i \times Post_t + \beta_5 OffList_i \times Post_t + X'_{i,t-1}\boldsymbol{\alpha} + Ind_j + Year_t + Ind_j \times Year_t + u_{it}. \tag{5}$$

We employ the multi-dose DID model (5) to estimate the differential impacts of direct and indirect delisting threats. Table 11 reports the results.

⟨ Table 11 is about here ⟩

Column (1) indicates that U.S. CCS have higher pre-treatment Tobin's q than HK peers, particularly among on-list firms. As expected, on-list firms experience a larger decline in Tobin's q (-0.81, 1% significance), while off-list firms show a smaller and insignificant decline (-0.20). Column (2) shows that on-list firms experience a 5.30 percentage point contraction in assets growth, while off-list firms are not significantly affected. Columns (3) and (4) indicate a sharper slowdown in sales growth for on-list firms, while gross profit effects are still statistically insignificant. Treatment intensity matters even more for input decisions. Consistent with the baseline results, neither employment nor fixed investment responds significantly to direct or spillover risk, while intangible investment declines markedly. On-list firms experience a 5.79 percentage point reduction in K&O intangible investment growth (Column 7), exceeding the aggregate effect of 3.75 percentage points. R&D growth declines even more sharply, by 17.12 percentage points among on-list firms, compared to 11.64 percentage points for the full sample of U.S. CCS. The concentration of adverse effects among firms officially identified under the HFCAA reinforces our causal interpretation.

4.4.2 Pre-shock Dual-listing Status

Chen, Hu, Xi and Zhu (2022) document that HKEX serves as a "safe harbor" for dual-listed U.S. CCS facing delisting risk, allowing these firms to outperform their U.S.-listed-only peers in stock returns during the three months following the SEC's release of the HFCAA Final Rule on December 2, 2021. We extend this analysis by investigating whether HKEX can effectively substitute for U.S. listing venues, enabling dual-listed firms to maintain their investment and operational scale while sustaining higher long-term market valuations.

Thus, we estimate Model (5), but divide the treatment group into firms that obtained a dual listing before 2022 (DualList_i) and firms without a dual-listing status during the entire sample period (Non DualList_i). To ensure clear identification, we exclude firms that became dual-listed after 2022 as well as firms that were initially listed in Hong Kong and subsequently dual-listed in the U.S.[21]

[21] In April 2018, HKEX introduced a dual-listing route for overseas-listed Chinese firms. Since then, 33 U.S.-listed Chinese firms have obtained dual primary or secondary listings on HKEX, of which 20 occurred before 2022, when delisting risk intensified. Based on our selection criteria and data availability, 13 firms are included in our sample (see Table A2).

⟨ Tables A2 and 12 are about here ⟩

The empirical results are shown in Table 12. Over the three-year horizon, the most salient difference arises in Tobin's q. Compared with HK-listed-only CCS, all U.S. CCS experience a decline in market valuations. The decline is more pronounced among pre-shock dual-listed firms, whose Tobin's q falls by 1.56, whereas U.S.-listed-only CCS experience a smaller decrease of 0.43. Two considerations help explain this pattern. First, unlike inclusion on the HFCAA official list, dual listing is an endogenous choice. Firms more reliant on equity financing are thus more likely to dual list and suffer larger valuation declines once delisting risk becomes salient. Second, all 20 firms that dual-listed between April 2018 and December 2021 were subsequently identified on the HFCAA list, suggesting that direct delisting threats dominate the benefits of dual listing on HKEX.

Intangible investment growth declines by a similar magnitude in the two groups, approximately 3 to 4 percentage points, with minor differences in statistical significance. Likewise, dual-listed and non-dual-listed U.S. CCS also show comparable declines in R&D investment, amounting to 12.04 and 11.22 percentage points, respectively. The relatively small gap between the effects on intangible and R&D investment provides further evidence that access to stock markets is crucial for innovation investment. Despite diminished valuations on U.S. exchanges, dual-listed firms benefit from their HKEX listing as a buffer for equity financing.

4.4.3 Perceived Risk

Firm-level perceptions of political risk account for the majority of variation in stock return volatility, eclipsing aggregate and sectoral shocks (Hassan, Hollander, Van Lent and Tahoun, 2019). Given that corporate insiders have a clearer view of firm-specific risk exposures, we assess how perceived risk disclosed in annual reports following the SEC's final adoption of the HFCAA affects firms' investment and valuation.

In our sample, more than 94% of U.S. CCS mention the HFCAA at least once in their 2021 annual reports, suggesting broad awareness of the delisting risk. Yet firms differ markedly in how they discuss this risk. While some firms describe the adoption and enforcement of the Act in neutral terms, others explicitly emphasize concerns about its implications for capital raising, technology and service provision, employment, disclosure costs, as well as

trade frictions and exchange rate fluctuations. Following Hassan, Hollander, Van Lent and Tahoun (2019), we apply the sentiment word lists developed by Loughran and McDonald (2011) to construct an NLP-based proxy for firm-level perceived HFCAA risk and sort U.S. CCS into high- and low-negative-perception groups. Details are provided in Appendix A2. We then perform a corresponding analysis based on the multi-dose DID model.

⟨ Table 13 is about here ⟩

The empirical results in Table 13 suggest that, consistent with firms facing direct delisting risk, firms with higher perceived risk also experience stronger declines in market value and output. Innovation investment also contracts markedly among firms with high perceived risk, with declines of 5 percentage points in intangible investment growth and 12 percentage points in R&D investment growth. However, the heterogeneity across risk-perception groups is less pronounced, as the low-perceived group also shows a 2 p.p. decline in intangible investment, albeit insignificant, and a 10 p.p. decline in R&D investment. Two factors may explain the more limited heterogeneity. First, perceived risk is inherently a noisier and less direct proxy than regulatory exposure. Second, corporate disclosure may not fully reflect managers' private assessments, as firms may strategically understate risk in public filings to avoid excessive market reactions.

4.5 Mechanism

As discussed above, R&D investment is less amenable to debt financing. We therefore examine whether firms' reliance on equity markets differentially affects their R&D investment under delisting risk. A firm's alternative financing capacity depends on financial constraints, the pledgeable value of assets, and the stability of sales growth, while the cash ratio captures available financial slack. Together, these dimensions may reshape corporate R&D.

4.5.1 Financial Constraints

Financial constraints capture a firm's ability to raise external funds. Once a firm loses access to the stock market, it must rely predominantly on debt to support long-term investment. From this perspective, lower financial constraints provide firms with superior access

to debt markets, attenuating the impact of delisting pressures on investment. We use firm age as a proxy for financial constraints, classifying U.S. firms into "young" and "old" groups based on the median U.S. firm age in 2021 and estimating separate DID models for each group using all HK CCS as the control sample. Firms with longer operating histories are assumed to face weaker financial constraints.

⟨ Table 14 is about here ⟩

As reported in Columns (1) and (2) of Table 14, young firms experience a 19.10 percentage-point contraction in R&D growth after the shock, whereas mature firms exhibit no statistically significant change. We further report the Wald test p-values for all coefficients. The Wald test (p-value = 0.007) rejects the null of equal coefficients, indicating a significantly stronger R&D reduction among young firms.

4.5.2 Asset Characteristics

When equity financing is constrained, asset pledgeability becomes more critical because debt serves as the primary substitute. Accordingly, we investigate whether asset liquidation value and intangible intensity influence firms' investment responses under delisting risk.

Asset Reversibility Asset reversibility captures the liquidation value of long-term assets that can serve as collateral and thus proxies for firms' ability to access debt financing. Firms with greater asset liquidation values are therefore less vulnerable to the loss of equity financing. Following Kermani and Ma (2023), we measure asset reversibility using industry- and asset-specific average liquidation recovery rates and scale the resulting liquidation value by total assets. Details are provided in Appendix A3. For industries not covered in that study, we use the aggregate recovery rates by asset type. Analogous to the age split, we divide the sample based on the median asset recovery rate of U.S. CCS and estimate separate DID specifications using HK CCS as the control group. Columns (3) and (4) of Table 14 report the results for firms with low and high recovery rates, respectively. As expected, firms with less reversible assets reduce R&D investment by 13.07 percentage points, a substantially larger contraction than high-recovery firms.

Intangible Intensity Following Peters and Taylor (2017), we recover the firms' intangible capital and scale it by total assets to obtain the intangible asset ratio. Debt investors value pledgeable assets, whereas equity holders claim residual value, making intangible assets more suited to equity financing. Firms with higher pre-existing intangible intensity are therefore more sensitive to delisting risk and may respond by reducing intangible investment or reallocating investment toward tangible assets. Columns (5) and (6) of Table 14 show that U.S. CCS reduce R&D by 11.74 percentage points in the high-intangible group and 10.12 percentage points in the low-intangible group, with no statistically significant difference.

4.5.3 Sales Growth Volatility

Higher sales growth volatility typically signals greater operational uncertainty and weaker access to debt financing. Columns (7) and (8) of Table 14 show that firms in the high-volatility group reduce R&D by 18.40 percentage points, whereas low-volatility firms exhibit no significant response. The difference between the two groups is statistically significant at the 5% level based on the Wald test.

4.5.4 Cash-to-Asset Ratio

Among the foundational studies on delisting, Jensen (1986) argues that firms with excess cash and limited investment opportunities are more likely to delist, mitigating agency problems. By extension, cash-rich firms rely less on capital markets and should be less sensitive to delisting risk. Columns (9) and (10) of Table 14, splitting U.S. CCS at the median cash-to-asset ratio, provide evidence that cash-constrained firms reduce R&D by 14.98 percentage points, whereas cash-rich firms show little sensitivity.

5 Missing IPO

We now extend our analysis to the extensive margin, examining whether delisting risk further influences Chinese firms' IPO decisions. Prior studies identify three forms of missing IPO. The first refers to a decline in the absolute number of IPOs, possibly due to stricter regulatory requirements or other structural changes. For example, Gao, Ritter and Zhu (2013)

observe that the average number of firms going public annually in the United States fell from 310 during 1980-2000 to 99 thereafter. The second involves changes in the characteristics of newly listed firms. Doidge, Karolyi and Stulz (2009) provide evidence that post-SOX U.S. cross-listed firms are slightly smaller, with little change in sales growth, leverage, or ownership concentration. We extend this analysis by examining how profitability, intangible intensity, WVR structures, VC representation, and related variables evolve after the HFCAA. The third form, also proposed by Doidge, Karolyi and Stulz (2009), refers to a decline in the relative attractiveness of a stock market: firms that would previously have pursued a U.S. cross-listing no longer do so, reflecting a relative form of missing IPO rather than a decline in aggregate issuance. In our setting, Chinese firms that would have listed in the U.S. but instead chose Hong Kong post-HFCAA constitute missing IPO for U.S. exchanges relative to the HKEX.

5.1 Missing IPO Quantity

We begin by investigating whether the post-HFCAA period is associated with a decline in the absolute number of IPOs. Figure 4 plots the IPO counts and total proceeds raised by Chinese firms listed in the U.S. and Hong Kong over 2014-2024.

⟨ Figure 4 is about here ⟩

The number of Chinese firms listed in Hong Kong fluctuates between 2014 and 2024, trending upward before 2020 and gradually declining after 2021, without a sharp contraction. U.S. listings follow a similar pattern prior to 2021, then they reach a five-year low in 2022, but rebound markedly in subsequent years. IPO counts alone do not suggest a decline in U.S. listings post-HFCAA. However, IPO proceeds fall dramatically. Chinese firms raised USD 34.3 billion on HKEX in 2021, declining to USD 12.2 billion in 2022, roughly one-third of the previous year's level. The decline is even steeper in the U.S. market, where proceeds fell from USD 16.6 billion in 2021 to USD 0.7 billion in 2022, less than 5% of the previous year's total. Proceeds show little recovery in 2023-2024. This divergence between IPO counts and proceeds signals a deterioration in the average quality of U.S.-listed Chinese IPOs.

5.2 Missing IPO Quality

5.2.1 Firm Characteristic Shifts

We therefore examine whether Chinese firms listed on U.S. exchanges display changes in quality. While the HFCAA may influence IPO decisions as early as its enactment in December 2020, the lengthy IPO process implies that firms going public in 2021 likely made their listing decisions in 2020. To ensure clean identification, we exclude 2021 observations and define 2022 onward as the post period. Table 4, which examines listing choices during 2009-2020, shows that firm size, asymmetric voting rights, public float at listing, and the U.S. VC dummy have the strongest explanatory power based on the estimated coefficients and marginal effects. To illustrate their evolution, Figure 5 presents the time trends of these firm-level characteristics used in the first-stage Heckman selection model.

⟨ Figure 5 is about here ⟩

Overall, Chinese firms listed in the U.S. after 2022 are smaller, display slower sales growth, and derive a higher share of revenue from overseas markets. They also sell a larger fraction of shares at IPO and are less likely to have U.S. VC board representation, findings that collectively indicate a decline in issuer quality. The notable exception is ROA, which rises from negative to positive on average. Post-2022 U.S.-listed CCS show no pronounced shifts in leverage, ownership concentration, or intangible intensity, whereas HK-listed CCS exhibit noticeable adjustments. The increase in leverage and ownership dispersion likely reflects multiple rounds of equity and debt financing prior to IPO by Chinese firms listing in Hong Kong after 2022. The rise in intangible asset intensity begins around 2020, following the 2018 HKEX reform under Chapters 18A and 18C, which allows biotechnology and specialist technology firms with high intangible assets but without traditional financial eligibility to list. Consistent patterns appear in the summary statistics for 2022-2024 in Panel B of Table 2. To quantify these shifts, we estimate a DID model.

⟨ Table 15 is about here ⟩

As shown in Table 15, the regression evidence is broadly consistent with the summary statistics. Controlling for year, industry, and industry-by-year fixed effects leaves the age

gap essentially intact, with U.S. CCS consistently appearing younger. Because the log-level coefficient on firm size is large, we convert it to exact percentage changes: the interaction coefficient in Column (2) is -1.304, implying $e^{-1.304} \approx 0.271$, meaning that average total assets fall to about 27.1% of their pre-shock level, ceteris paribus. Pre-IPO sales growth of U.S.-listed CCS in the post-HFCAA period declines by 103.85 percentage points, falling below that of HK-listed CCS, while the overseas revenue share increases by 23 percentage points. When HK CCS maintain a public float of around 25%, in line with statutory requirements, U.S. CCS consistently issue a smaller fraction of shares, which declines by a further 5.67% after 2022. Correspondingly, the share of U.S. CCS with well-known U.S. VC board representation falls by 31.4%. Despite smaller size, weaker growth, and greater export reliance, post-HFCAA U.S.-listed Chinese firms appear financially more robust and better governed, with ROA increasing by 20.64 percentage points and WVR adoption falling by 14.6 percentage points.

We also observe significant divergences in leverage, ownership concentration, and intangible asset intensity, which appear to be driven primarily by Chinese issuers listing in Hong Kong rather than those listing in the United States, as illustrated in Panels (c), (i), and (g) of Figure 5, respectively. It is reasonable to attribute the increase in intangible asset intensity among Hong Kong-listed Chinese issuers to the 2018 HKEX IPO reform, as the upward trend begins around 2019 rather than emerging abruptly after 2022. However, the reform itself may partly respond to U.S.-China financial decoupling. While dual-primary and secondary listings provide a safe harbor for already listed firms from potential negative shocks (Chen, Hu, Xi and Zhu, 2022), permitting unprofitable biotech and innovative firms with WVR to list offers an alternative venue for high-growth, pre-profit Chinese firms seeking overseas listings. Therefore, we cannot rule out that the increase in intangible asset intensity among HK CCS is related to the HFCAA-introduced delisting risk.

5.2.2 Financing Performance and Valuation Premium

Furthermore, we investigate whether the deterioration in firm quality is priced into IPO proceeds and market valuations. Table 16 reports regressions of the natural logarithm of IPO proceeds (Columns (1)-(2)), Tobin's q at listing (Columns (3)-(4)), and year-end Tobin's q (Columns (5)-(6)), with year, industry, and industry-by-year fixed effects. Odd columns

present baseline DID estimates, while even columns additionally account for observable and unobservable listing-venue selection bias.

⟨ Table 16 is about here ⟩

Conditional on firm size and public float, the decline in proceeds is economically substantial but statistically less precise: 21.2% without selection correction and 18.6% after accounting for negative selection, significant at the 5% and 10% levels, respectively. From a valuation perspective, U.S. capital markets retain a clear advantage. During 2009-2020, U.S.-listed Chinese firms enjoy a valuation premium of 4.41 in terms of Tobin's q relative to Hong Kong peers. After accounting for negative selection, the estimated premium rises to 5.90. Based on the definition of Tobin's q, we can recover the implied gap in market valuation for U.S.-listed Chinese firms relative to a counterfactual HKEX listing as:

$$\text{Market Cap}_{U.S.} - \text{Market Cap}_{HK} = (q_{U.S.} - q_{HK}) \times \text{Total Assets}.$$

Although the interaction term is statistically insignificant, it remains positive, indicating that the premium persists post-HFCAA. Using the post-2022 average firm size (USD 0.104 billion in assets), the 4.41-5.90 higher Tobin's q implies a capitalization premium of USD 0.46-0.61 billion. This corresponds to 41.1%-54.5% of the average listing market capitalization of USD 1.12 billion relative to a counterfactual Hong Kong listing. This helps rationalize why Chinese firms continue to seek listings in the U.S. despite increased delisting risk. Higher valuations at listing enable these firms to raise greater proceeds in the IPO and facilitate subsequent capital raising activities, such as seasoned equity offerings.

IPO pricing, however, is volatile and subject to confounding factors. Following Doidge, Karolyi and Stulz (2009), we examine whether the valuation advantage persists using Tobin's q at listing year-end. While the 0.582 decline in the interaction term in Column (5) of Table 5 captures the effect on incumbent U.S.-listed Chinese firms, the larger 1.18 decline in Column (6) of Table 16 for newly listed firms reflects both adverse market expectations and lower perceived issuer quality. Summing the interaction term and the Treat coefficient, the valuation premium for U.S.-listed Chinese firms remains positive but is considerably weaker than before the shock.

5.3 Listing Propensity and Relative Attractiveness

The foregoing analysis shows that while delisting risk does not reduce the number of Chinese firms listing in the U.S., it significantly alters their composition. Post-HFCAA U.S.-listed Chinese firms are smaller, display weaker growth prospects, and are more export-oriented. Although these firms continue to enjoy a listing premium, their long-term valuations are adversely affected. These findings raise a natural question: do pre-shock U.S.-type Chinese firms still list in the United States? We investigate this by examining whether our pre-HFCAA listing-location selection model accurately predicts post-HFCAA venue choices. As year fixed effects are not identified in the prediction window, we replace Model (2a) with Model (2b), incorporating time-varying macroeconomic variables to capture time trends.

⟨ Table 17 is about here ⟩

Model (2b) in Column (3) of Table 17 delivers a fit similar to Model (2a) in Column (1) during the pre-HFCAA period, with little change in the pseudo R-square. The estimated coefficients and marginal effects for almost all firm-level covariates are also highly stable. Although the macroeconomic controls are individually insignificant, they help absorb common time trends. Thus, we apply the specification in Column (3) of Table 17, estimated over 2009-2020, to firm characteristics in both the estimation window and the 2022-2024 prediction window, assigning listing venues using a 0.5 threshold.

⟨ Table 18 is about here ⟩

Hong Kong and the U.S. account for over 96% of Chinese overseas listings between 2009 and 2020, so most firms seeking to list abroad effectively choose between the two. Following Doidge, Karolyi and Stulz (2009), we assess whether the HFCAA adversely affects the competitiveness of U.S. exchanges relative to the HKEX Main Board, using pre-HFCAA behavior to construct a counterfactual benchmark for post-HFCAA listing choices. Table 18 reports the corresponding actual and expected numbers and shares of Chinese firms listed in the U.S. To ensure clear identification, we exclude firms listed in 2021. The proportion of Chinese firms listing in the U.S., measured as U.S. listings over total U.S. and HK listings, ranges between 6.06% and 32.69% during 2009-2020, and between 18.75% and 55.45% after

2022. Overall, the selection model demonstrates strong predictive performance, as the in-sample expected U.S. listing share deviates from the actual share by only 1.60 percentage points, which corresponds to approximately 7% of the average U.S. listing share (22.43%) among overseas-listed Chinese firms. However, the gap between the actual and expected U.S. listing share becomes negative after 2022, at -5.61 percentage points. Relative to the pre-HFCAA benchmark, this implies a reallocation of up to 7.21% of pre-shock U.S.-type Chinese firms toward Hong Kong listings. Although economically modest, the result indicates a decline in the relative attractiveness of major U.S. exchanges for Chinese firms.

Aggregate prediction gaps, however, may mask offsetting misclassifications at the firm level, as they summarize only the total number and proportion of U.S.-listed Chinese firms in a given year, without accounting for false positives and false negatives. Predicted and actual shares may appear similar even if many firms predicted to list in the U.S. instead list in Hong Kong (and vice versa). We therefore report confusion matrices and standard classification performance metrics for both in-sample and out-of-sample predictions.

⟨ Table 19 is about here ⟩

As shown in the Example Panel of Table 19, CCS that are both predicted and observed to list in the U.S. are classified as true positives (TP), those both predicted and observed to list in HK as true negatives (TN), those predicted to list in the U.S. but actually listed in Hong Kong as false positives (FP), and those predicted to list in Hong Kong but actually listed in the U.S. as false negatives (FN). We report four standard performance metrics. "Accuracy" measures the share of all observations correctly classified, including both positives and negatives. "Precision", or positive predictive value, is the fraction of predicted positives that are actually positive. "Recall" is the fraction of observations correctly classified as positive among those that are actually positive. "F1" is the harmonic mean of precision and recall, which is high only when the model is simultaneously good at correctly identifying positives (high recall) and avoiding false alarms (high precision), and is mainly used to compare models or specifications when both types of errors (FP and FN) matter. In the estimation window, accuracy reaches 94.1% and F1 reaches 87.34%, indicating a strong in-sample fit for pre-shock venue choices.

In the prediction window, despite shifts in firms' financial characteristics, including ROA, sales growth, intangible asset intensity, and overseas sales ratio, the model continues to perform well, with accuracy at 90.36% and F1 rising to 88%. However, precision and recall move in opposite directions, driven by more false positives and fewer false negatives. Among Chinese firms predicted to list in the United States, the share that actually does so decreases by 8.13%, as observed by the precision decline. Meanwhile, among firms predicted to list in Hong Kong, the share that actually does so increases by 10.12%, based on the recall increase. These results are broadly consistent with reduced competitiveness of U.S. exchanges as implied by the listing propensity analysis in Table 18. In addition, the effect is more pronounced once accounting for offsetting misclassifications.

Despite weaker issuer quality and reduced attractiveness, U.S. exchanges retain a unique appeal for certain firms. Column (2) of Table 4 shows that the marginal effects at the threshold are concentrated in age, size, voting rights, ownership concentration, and U.S. VC board representation. Post- versus pre-HFCAA differences are most pronounced in ROA, overseas sales share, sales growth, and intangible intensity, characteristics that have little overlap with the key switching determinants except for U.S. VC representation. Given that VC backing is closely tied to firm quality, while other characteristics are statistically significant but not decisive at the switching margin, it is not surprising that the pre-HFCAA model continues to perform well in the post-HFCAA period. Consistent with this, Column (6), which estimates the selection model using post-HFCAA listed firms, shows that the key determinants remain largely unchanged, with only export dependence gaining significance and U.S. VC support losing explanatory power.

Collectively, the post-HFCAA period is associated with a deterioration in the quality of Chinese IPOs on U.S. exchanges: issuers are smaller, less growth-oriented, more export-dependent, and characterized by weaker governance structures, leading to lower IPO proceeds and weaker long-term valuation premiums. Although the absolute number of IPOs does not decline, the relative attractiveness of major U.S. exchanges diminishes relative to the HKEX Main Board. Nevertheless, the unique advantages of U.S. exchanges are not fully replicable in Hong Kong for China concept stocks.

5.4 Robustness Checks: Shock in 2021

Although pre-IPO firm characteristics adjust more visibly after 2022 (Figure 5), market valuations of incumbent firms decline sharply by the end of 2021 relative to 2020, as illustrated in Figure A1. Unlisted firms, being more flexible than incumbents that reduce investment only when delisting risk becomes binding, may respond earlier by adjusting listing choices. Accordingly, we perform robustness tests using the enactment of the HFCAA on December 18, 2020 as the shock, treating 2021 onward as the post period.

5.4.1 Financing Performance and Valuation Premium

Table A4 shows that financing and valuation outcomes are broadly consistent across the 2021-2024 and 2022-2024 samples. IPO proceeds decline by 14.2%-16.0% in the robustness sample, smaller than the 18.6%-21.2% baseline estimates, and lose statistical significance. Tobin's q at listing shows no significant change after 2021, consistent with a persistent U.S.-listing premium. These results indicate that the deterioration in U.S. financing performance is predominantly a post-2022 phenomenon.

Evidence from year-end Tobin's q indicates that the premium dissipates but is not fully offset, as reflected in the coefficients on treatment status and the interaction term. The magnitudes and statistical significance are most comparable at the listing year-end between the robustness and baseline samples, likely because the HFCAA Final Rule was adopted on December 2, 2021, affecting firms listed in 2021 through their year-end valuations. This pattern reinforces our interpretation that delisting risk adversely affects firm valuations.

5.4.2 Listing Propensity and Relative Attractiveness

Similarly, to examine whether the enactment of the HFCAA constitutes a credible threat to firms' listing decisions, we evaluate the predictive performance of the 2009-2020 model for listing choices in the 2021 onward sample. Listing propensity, confusion matrices, and performance metrics are reported in Tables A5 and A6, respectively.

⟨ Tables A5 and A6 are about here ⟩

Results are broadly consistent with the baseline. The gap between actual and predicted U.S. listing shares is -4.90% in 2021, close to the baseline average of -5.61%. Accuracy and F1 remain stable, while precision declines by 8.86% and recall increases by 9.20%. This pattern suggests that more firms predicted to list in the U.S. opt for Hong Kong, with fewer firms predicted to list in Hong Kong choosing the U.S. These magnitudes are close to the 8.13% and 10.12% observed in the 2022-2024 sample, indicating that the decline in relative U.S. attractiveness emerges as early as 2021.

6 Conclusion

This paper studies the HFCAA as a financial restriction on equity-market access and quantifies how delisting risk transmits geopolitical tensions to corporate decisions. At the intensive margin, U.S.-listed Chinese firms experience a 0.58 decline in Tobin's q and 4.85 and 7.74 percentage-point declines in total-asset and sales growth relative to Hong Kong-listed peers. These output contractions are accompanied by asymmetric disinvestment. Employment and tangible capital show no additional decline, whereas delisting risk primarily reduces intangible investment, lowering K&O intangible growth by 3.84 percentage points and R&D expenditure by 11.65 percentage points. These findings hold in a balanced panel and across robustness analyses, with the placebo test further alleviating concerns that the U.S.-China trade war or the HKEX IPO reform drives the results.

A validity test distinguishes the direct and spillover effects of the HFCAA by dividing U.S. CCS into on-list and off-list groups. The contraction is primarily driven by on-list firms, with Tobin's q declining by 0.81 versus an insignificant 0.22 for off-list peers. Real outcomes exhibit a similar gradient, with reductions in operational scale, intangible investment, and R&D concentrated among on-list firms. Heterogeneity by dual-listing status and perceived risk is less definitive, but the patterns suggest greater sensitivity among dual-listed firms and firms with more negative risk disclosures. Consistent with R&D being highly sensitive to stock market access, the decline is larger among firms more dependent on equity financing.

The first stage Heckman selection model indicates that U.S. listing propensity is higher for younger, smaller, less profitable, and more growth-oriented Chinese firms. It is also asso-

ciated with dispersed ownership, weighted voting rights, lower public float, higher secondary issuance, and U.S. VC board representation.

At the extensive margin, we examine the impact of HFCAA-induced delisting risk on Chinese firms pursuing overseas listings. Although IPO counts do not fall, delisting risk is associated with a shift toward lower-quality issuers and a sharp contraction in IPO proceeds. Post-2022, U.S.-listed Chinese IPO firms are smaller, less growth-oriented, more export-intensive, and offer a substantially lower public float. Conditional on firm size and offering proportion, these changes translate into an approximately 20% decline in IPO proceeds. Valuations at issuance, however, are not significantly affected, helping rationalize continued U.S. listings. Yet this advantage erodes quickly, with year-end Tobin's q falling by 1.18, offsetting a substantial portion of the 1.82 pre-shock premium.

Finally, using the pre-HFCAA listing location selection model, we assess listing propensity for post-2022 firms. Beyond quality deterioration, U.S. exchanges have become less attractive relative to the HKEX, with approximately 7-10% of Chinese firms that would have chosen U.S. listings pre-shock instead opting for Hong Kong.

The HFCAA is a concrete example of restrictions on equity-market access through which geopolitical tensions are transmitted to firms' real decisions. In contrast to studies of general political uncertainty, our setting isolates a specific geoeconomic instrument and traces its implications for corporate finance. The HFCAA extends SOX enforcement by closing gaps in PCAOB oversight of foreign issuers' audits, and constitutes a regulatory shock that restricts noncompliant firms' access to U.S. equity markets. In this respect, it shares conceptual parallels with the listing-related policy uncertainty studied by Cong and Howell (2021), who document a similarly chilling effect on innovation.

Our findings underscore the geoeconomics importance of U.S. financial infrastructure, which enables it to project power through access to its capital markets. Even after the temporary U.S.-China compromise, the threat of delisting inflicted meaningful growth losses among the most dynamic Chinese firms. These costs, however, extend beyond targeted firms, as policy risk may deter high-growth foreign issuers and weaken U.S. market competitiveness.

Tables and Figures

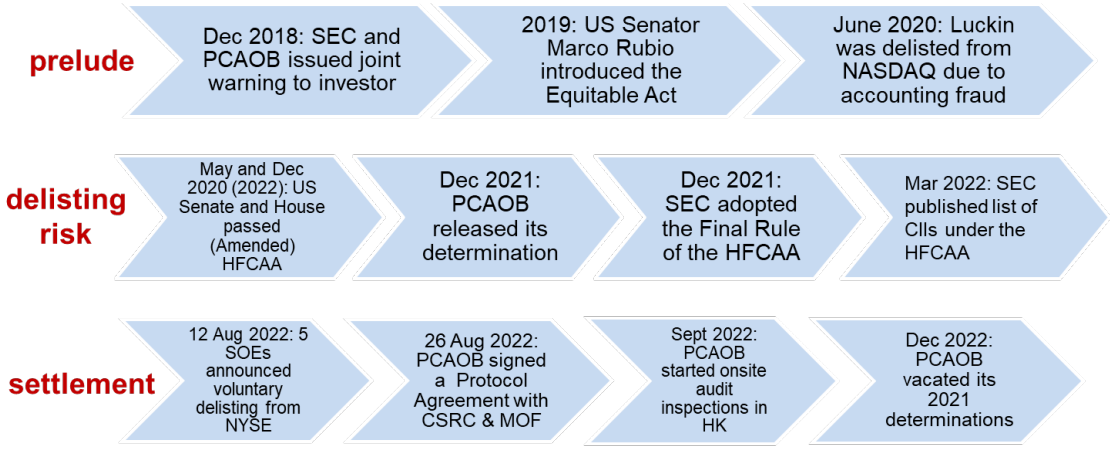


Figure 1: Timeline of U.S. Regulations under the HFCAA

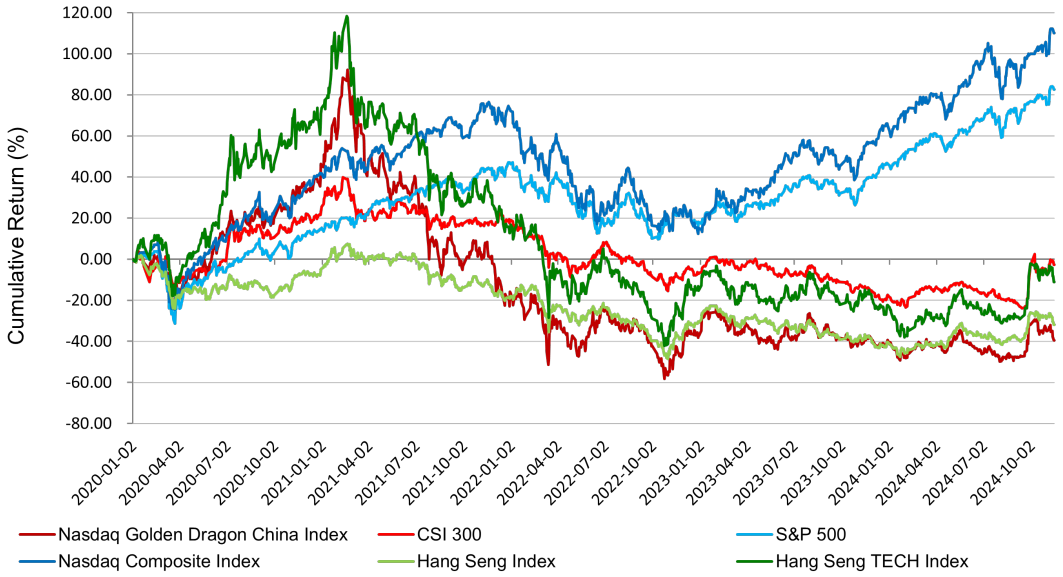


Figure 2: Cumulative Return for Relative Stock Market Indices, 2020-2024

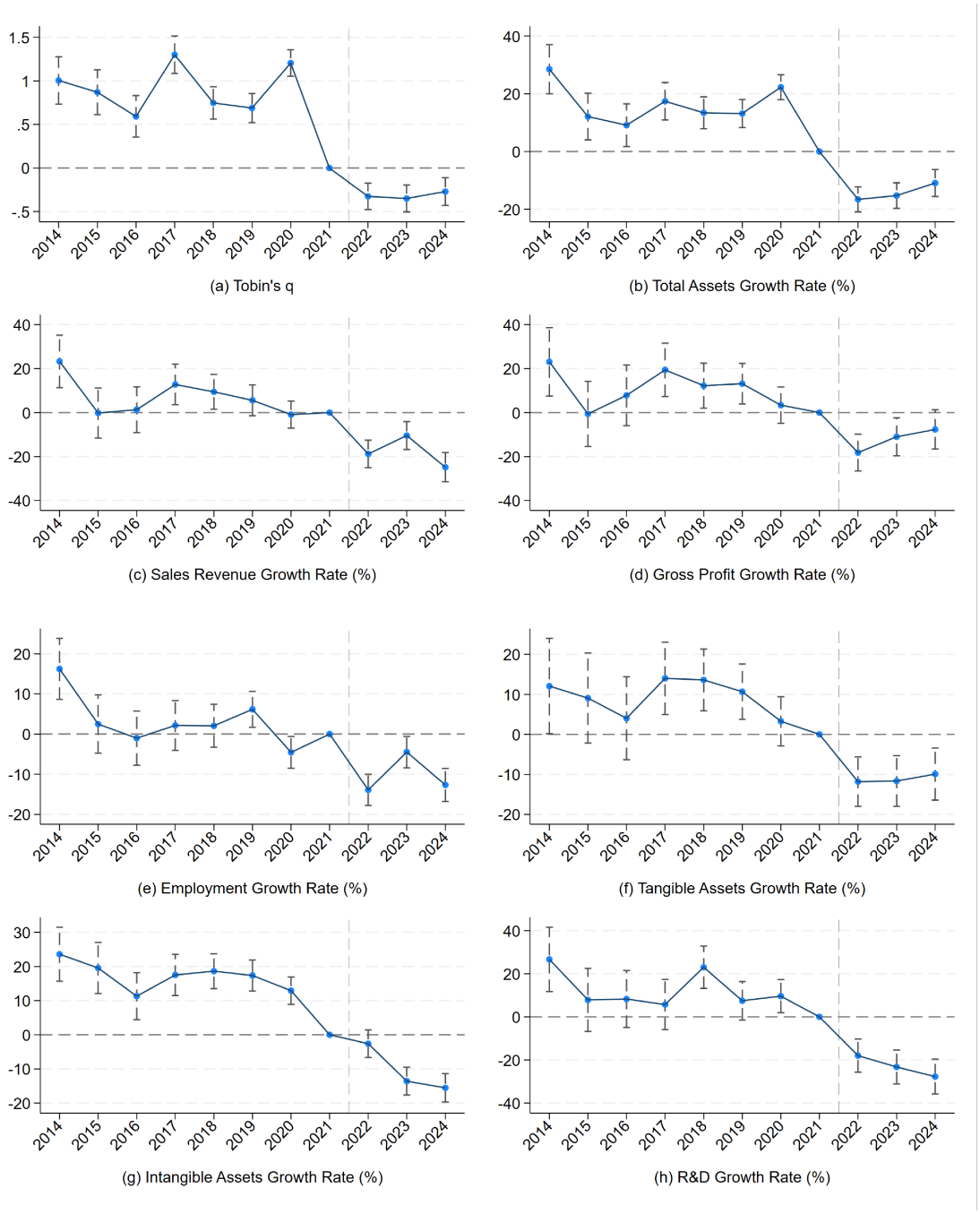


Figure 3: Parallel Trend Tests for CCS Performance, 2014-2024

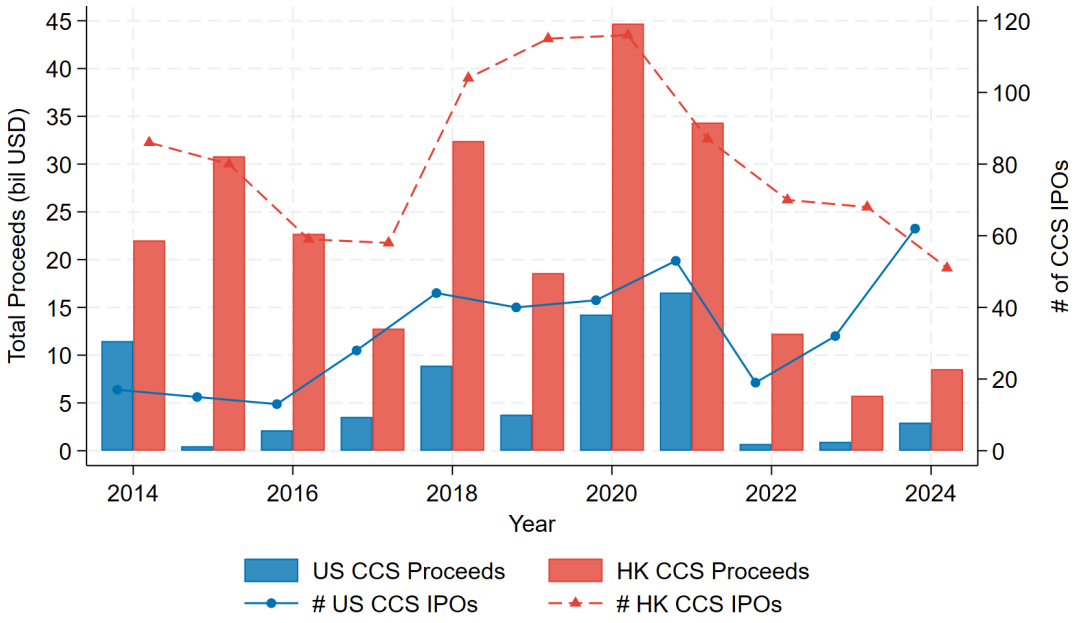


Figure 4: IPO Number and Total Proceeds for CCS in the U.S. and HK, 2014-2024

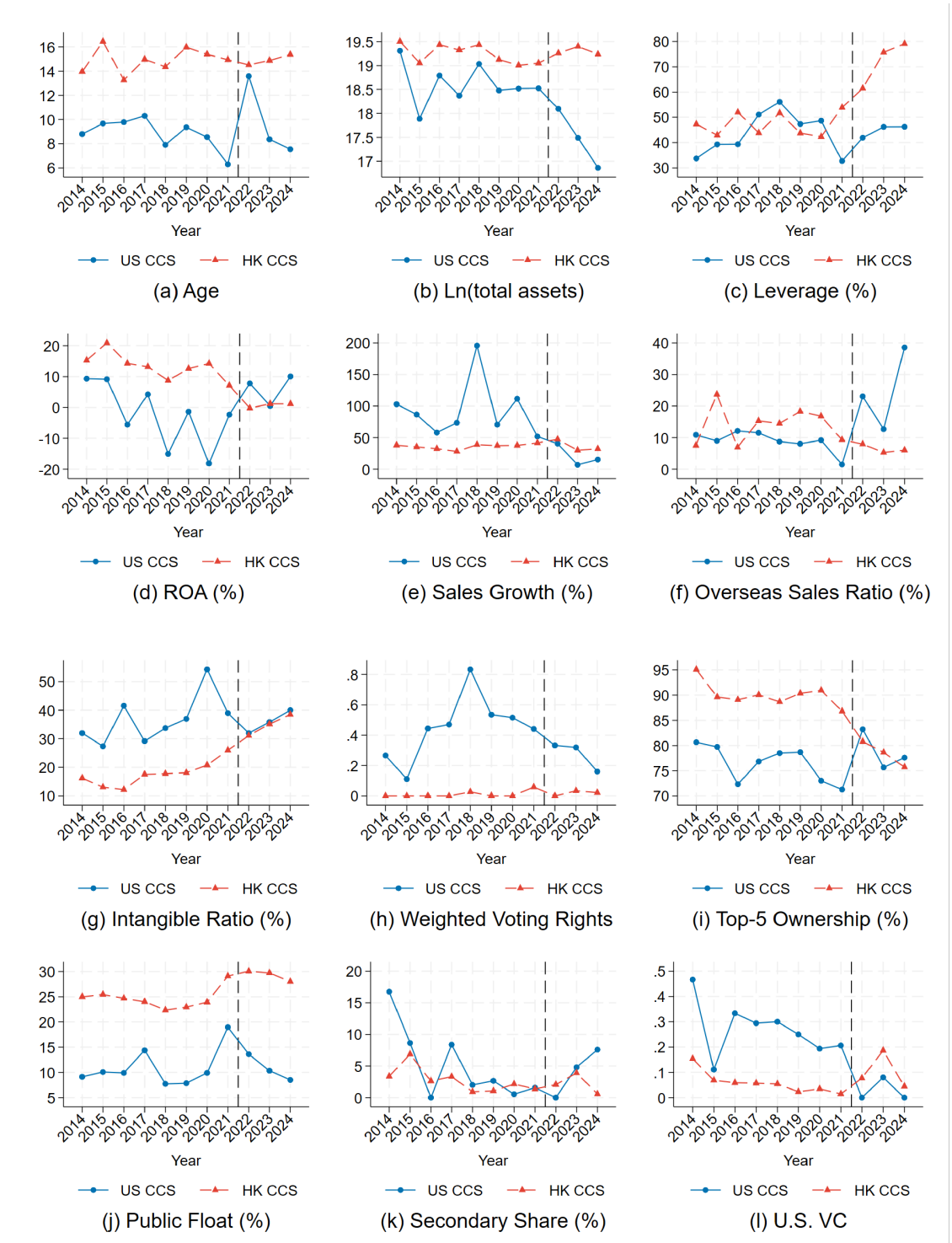


Figure 5: Pre-IPO Firm Characteristics, 2014-2024

Table 1: Summary Statistics for Outcomes and Controls

		U.S.						Hong Kong							
Variable	**Period**	Mean	SD	P25	Med	P75	N	Mean	SD	P25	Med	P75	N	Diff.	t-value
Panel A: Outcome Variables															
Tobin's q	Post = 0	2.19	1.68	0.92	1.57	2.94	603	1.40	0.85	0.85	1.07	1.66	3038	0.79	17.22***
	Post = 1	1.25	1.17	0.61	0.89	1.33	368	1.17	0.78	0.70	0.91	1.31	1596	0.07	1.49
Total assets growth rate (%)	Post = 0	21.43	42.91	-5.45	16.59	43.90	626	11.50	21.62	-1.68	9.98	23.43	3038	9.94	8.55***
	Post = 1	-6.49	31.62	-24.52	-5.00	7.49	377	-3.23	16.46	-12.98	-2.71	5.97	1594	-3.26	-2.81***
Sales growth rate (%)	Post = 0	11.24	49.45	-8.38	18.42	39.12	579	7.27	29.94	-8.05	9.41	26.02	2832	3.97	2.56**
	Post = 1	-12.91	50.18	-36.15	-5.68	11.96	344	-3.85	29.68	-20.06	-1.52	12.89	1500	-9.07	-4.40***
Gross profit growth rate (%)	Post = 0	12.33	55.61	-12.71	17.32	44.87	508	4.99	37.84	-13.21	8.63	27.32	2635	7.33	3.67***
	Post = 1	-10.47	59.29	-39.53	-3.21	18.88	290	-7.56	40.09	-27.34	-4.75	13.74	1373	-2.91	-1.02
Employment growth rate (%)	Post = 0	2.19	33.86	-14.09	4.02	24.53	591	2.45	20.06	-6.90	2.46	13.88	2857	-0.26	-0.25
	Post = 1	-9.57	31.22	-22.07	-5.65	7.35	386	-3.33	18.68	-12.32	-1.48	6.27	1647	-6.23	-5.10***
Tangible assets growth rate (%)	Post = 0	14.83	53.68	-11.97	10.10	40.77	615	9.92	30.13	-6.68	5.42	24.79	3021	4.91	3.15***
	Post = 1	-3.95	53.95	-32.60	-6.99	16.23	367	-3.00	27.10	-16.04	-5.02	8.30	1597	-0.95	-0.48
K&O intangibles growth rate (%)	Post = 0	28.44	22.83	11.70	26.06	43.09	626	18.59	15.10	7.82	17.55	28.32	3038	9.85	13.46***
	Post = 1	7.75	17.69	-5.14	4.71	16.16	390	6.29	11.78	-2.19	5.51	12.51	1650	1.46	1.98**
Intangible assets growth rate (%)	Post = 0	28.85	31.06	6.35	24.28	47.49	626	20.08	22.92	5.11	16.43	31.67	3038	8.77	8.15***
	Post = 1	5.40	25.05	-9.79	0.11	14.34	390	2.77	15.40	-6.38	1.39	9.02	1650	2.64	2.65***
R&D growth rate (%)	Post = 0	19.80	40.81	-4.48	22.39	48.83	382	14.24	33.71	-4.72	14.32	36.12	1105	5.56	2.63***
	Post = 1	-13.34	36.27	-35.64	-9.50	7.88	239	-2.03	29.88	-18.55	-2.11	12.98	725	-11.31	-4.80***
Panel B: Control Variables															
Age		12.43	5.62	8.00	12.00	17.00	1016	18.35	6.66	13.00	18.00	23.00	4688	-5.93	-26.42***
Ln(total assets)		19.65	1.86	18.21	19.65	20.95	1016	20.11	1.77	18.77	19.74	21.12	4676	-0.46	-7.41***
Leverage (%)		36.08	25.45	15.91	29.47	50.60	1016	35.37	23.21	16.82	31.63	48.56	4676	0.71	0.87
Sales growth rate (%)		10.47	50.22	-13.67	14.85	38.49	934	6.47	30.05	-9.42	8.07	24.47	4373	3.99	3.21***
Intangible asset ratio (%)		49.84	45.38	17.92	34.71	64.24	1016	23.61	22.04	6.41	16.36	33.80	4676	26.23	27.38***
Turnover		1.46	1.78	0.29	0.77	1.75	901	0.24	0.27	0.05	0.13	0.32	4208	1.22	42.20***
Tobin's q		1.94	1.67	0.79	1.28	2.57	874	1.35	0.84	0.82	1.02	1.59	4299	0.59	15.58***

This table presents summary statistics for Chinese firms listed on U.S. and Hong Kong exchanges. Panel A reports the outcome variables measuring firms' operating and investment activities. $Post = 0$ corresponds to the pre-HFCAA period (2014-2021), and $Post = 1$ to the post-HFCAA period (2022-2024). Panel B reports one-year lagged control variables over the full sample period. All continuous variables are winsorized at the 5th and 95th percentiles. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 2: Summary Statistics for Pre-IPO Firm Characteristics

	U.S.						Hong Kong						Diff.	t-value	Norm.	Wilcoxon
Variable	Mean	SD	P25	Med	P75	N	Mean	SD	P25	Med	P75	N			Diff.	p
Panel A: Pre-HFCAA 2009-2020																
Age	8.76	4.88	5.00	8.00	11.50	200	14.41	6.50	10.00	14.00	18.00	630	-5.65	-11.33***	-0.98	0.00
Ln(total assets)	18.52	1.38	17.63	18.30	19.34	200	19.24	1.48	18.14	18.93	20.12	630	-0.73	-6.14***	-0.50	0.00
Leverage (%)	44.48	33.04	18.65	36.47	59.77	200	43.36	23.39	25.59	40.32	57.44	630	1.12	0.53	0.04	0.18
ROA (%)	0.26	34.83	-17.61	9.71	24.10	200	17.10	11.64	8.30	15.20	23.22	630	-16.84	-10.45***	-0.65	0.00
Sales growth rate (%)	120.17	176.44	25.56	63.99	116.15	200	38.88	39.18	12.08	27.23	53.04	630	81.29	10.77***	0.64	0.00
Overseas sales ratio (%)	8.47	20.25	0.00	0.00	6.79	200	13.93	26.99	0.00	0.00	10.30	630	-5.46	-2.64***	-0.23	0.69
Intangible ratio (%)	35.11	34.94	9.41	22.78	51.78	200	14.67	15.47	3.19	9.14	20.80	630	20.44	11.55***	0.76	0.00
Weighted voting rights	0.38	0.49	0	0	1	200	0.00	0.06	0	0	0	630	0.38	19.06***	1.10	0.00
Top-5 ownership (%)	77.61	15.91	68.47	78.90	90.75	200	92.05	13.71	89.65	100.00	100.00	630	-14.44	-12.47***	-0.97	0.00
Public float (%)	10.56	10.12	3.38	7.48	14.44	200	24.46	4.91	22.91	25.00	27.40	630	-13.89	-26.13***	-1.75	0.00
Secondary share (%)	9.84	25.10	0.00	0.00	0.00	200	3.91	10.21	0.00	0.00	0.00	630	5.93	4.81***	0.31	0.26
U.S. VC	0.30	0.46	0	0	1	200	0.06	0.24	0	0	0	630	0.25	9.94***	0.65	0.00
Direct flight	0.65	0.48	0	1	1	200	0.39	0.49	0	0	1	630	0.26	6.67***	0.54	0.00
Panel B: Post-HFCAA 2022-2024																
Age	8.54	8.59	2.00	6.00	11.00	93	14.90	6.49	9.00	13.00	19.50	156	-6.37	-6.62***	-0.84	0.00
Ln(total assets)	17.19	1.60	16.05	17.03	18.31	93	19.30	1.24	18.28	19.16	19.96	156	-2.11	-11.64***	-1.47	0.00
Leverage (%)	45.67	41.58	15.75	34.16	58.13	93	71.91	93.25	19.96	34.74	65.99	156	-26.24	-2.56**	-0.36	0.16
ROA (%)	7.21	24.08	-2.66	8.80	19.82	93	0.71	27.44	-8.28	7.51	17.15	156	6.50	1.89*	0.25	0.22
Sales growth rate (%)	16.36	34.50	-5.66	9.02	36.12	93	36.52	40.72	12.16	24.60	49.97	156	-20.16	-3.99***	-0.53	0.00
Overseas sales ratio (%)	29.61	42.56	0.00	0.00	80.80	93	6.41	15.62	0.00	0.00	0.92	156	23.20	6.15***	0.72	0.00
Intangible ratio (%)	37.84	29.31	17.18	27.33	49.15	93	34.75	28.58	13.48	25.61	48.26	156	3.08	0.82	0.11	0.31
Weighted voting rights	0.23	0.42	0	0	0	93	0.02	0.14	0	0	0	156	0.21	5.66***	0.66	0.00
Top-5 ownership (%)	77.80	17.22	66.80	80.00	92.70	93	78.51	19.56	62.72	82.75	98.06	156	-0.71	-0.29	-0.04	0.50
Disclosure burden	1.91	1.16	1	2	3	93	2.17	1.04	1	2	3	156	-0.26	-1.83*	-0.24	0.02
Public float (%)	9.65	7.22	4.13	8.15	13.90	93	29.34	12.65	21.97	25.93	34.25	156	-19.69	-13.72***	-1.91	0.00
Secondary share (%)	5.85	17.69	0.00	0.00	0.00	93	2.32	9.83	0.00	0.00	0.00	156	3.53	2.03**	0.25	0.07
U.S. VC	0.02	0.15	0	0	0	93	0.11	0.31	0	0	0	156	-0.09	-2.54**	-0.37	0.01
Direct flight	0.60	0.49	0	1	1	93	0.28	0.45	0	0	1	156	0.32	5.23***	0.68	0.00

Note: This table reports summary statistics for Chinese firms listed on U.S. and Hong Kong exchanges. Firm age, size, leverage, profitability, growth potential, overseas sales ratio, and corporate structure are measured one year before IPO. Public float is measured at listing. Secondary share denotes the proportion of shares sold by existing shareholders relative to total shares offered. U.S. VC equals one if the firm received pre-IPO investment from at least one prominent U.S. venture capital firm with board representation. Direct flight equals one if a direct flight connects the firm's headquarters (or principal place of business) and New York in the year before IPO. Panel A reports firms listed during 2009-2020, and Panel B reports firms listed during 2022-2024. All continuous variables are winsorized at the 5th and 95th percentiles. *, **, and *** denote statistical significance of the t-test for differences in means between groups at the 10%, 5%, and 1% levels, respectively. Norm. Diff. is the standardized difference in means. Wilcoxon p is the p-value from the Wilcoxon rank-sum test of the null hypothesis that the two samples are drawn from the same distribution.

Table 3: Comparison of Listing Standards: HKEX vs Nasdaq GM

Criteria / Exchange	**HKEX (Profit Test)**	**Nasdaq GM (Profit Test)**	**HKEX (Market Cap/Rev)**	**Nasdaq GM (Market Cap/Rev)**
Profit	Net Profit > US$6.4 mil in past 3 years, and > US$2.6 mil the most recent year	Pre-Tax Profit > US$1 mil in the most recent year, or two of the last three years	–	–
Market Cap	> US$26 mil	–	> US$513 mil	> US$75 mil
Shareholders' Equity	–	> US$15 mil	–	–
Total Revenue	–	–	> US$64 mil in the most recent year	TA > US$75 mil and TR > US$75 mil
Operating History	$\geq$ 3 years	–	$\geq$ 3 years	–
Public Float	$\geq$ 25%	–	$\geq$ 25%	–

Table 4: Selection Model for Listing Choice

	Pre-HFCAA 2009-2020		**Post-HFCAA 2021-2024**		**Post-HFCAA 2022-2024**	
	Coef.	**Marg. Eff.**	**Coef.**	**Marg. Eff.**	**Coef.**	**Marg. Eff.**
	(1)	(2)	(3)	(4)	(5)	(6)
Treat: Listed in the U.S.						
Age	-0.044**	-0.003**	-0.101***	-0.005***	-0.055	-0.002
	(0.018)	(0.001)	(0.032)	(0.001)	(0.047)	(0.002)
Ln(total assets)	-0.699***	-0.054***	-1.413***	-0.064***	-1.538***	-0.055***
	(0.098)	(0.007)	(0.383)	(0.015)	(0.505)	(0.016)
Leverage (%)	-0.005	-0.000	-0.008*	-0.000*	-0.005	-0.000
	(0.004)	(0.000)	(0.005)	(0.000)	(0.005)	(0.000)
ROA (%)	-0.025***	-0.002***	0.008	0.000	0.023	0.001
	(0.007)	(0.001)	(0.010)	(0.000)	(0.015)	(0.001)
Sales growth rate (%)	0.003**	0.000**	-0.020**	-0.001***	-0.021*	-0.001*
	(0.002)	(0.000)	(0.008)	(0.000)	(0.012)	(0.000)
Overseas sales ratio (%)	-0.003	-0.000	0.026***	0.001***	0.048***	0.002***
	(0.004)	(0.000)	(0.010)	(0.000)	(0.018)	(0.001)
Intangible ratio (%)	0.013**	0.001**	0.002	0.000	-0.004	-0.000
	(0.005)	(0.000)	(0.009)	(0.000)	(0.011)	(0.000)
Weighted voting rights	3.162***	0.246***	4.087***	0.186***	3.144**	0.112**
	(0.649)	(0.048)	(1.196)	(0.046)	(1.468)	(0.049)
Top-5 ownership (%)	-0.019***	-0.002***	-0.055***	-0.003***	-0.066**	-0.002**
	(0.006)	(0.000)	(0.019)	(0.001)	(0.028)	(0.001)
Public float (%)	-0.120***	-0.009***	-0.219***	-0.010***	-0.281***	-0.010***
	(0.012)	(0.001)	(0.043)	(0.001)	(0.071)	(0.002)
Secondary share (%)	0.020***	0.002***	-0.012	-0.001	-0.019	-0.001
	(0.007)	(0.000)	(0.018)	(0.001)	(0.031)	(0.001)
U.S. VC	0.658**	0.051**	-0.437	-0.020	-1.547	-0.055
	(0.299)	(0.023)	(1.007)	(0.046)	(1.906)	(0.067)
Direct flight	0.131	0.010	0.346	0.016	0.626	0.022
	(0.198)	(0.015)	(0.470)	(0.021)	(0.644)	(0.023)
First-day return (%)	0.181***	0.014***	0.011	0.001	-0.148	-0.005
	(0.058)	(0.004)	(0.025)	(0.001)	(0.120)	(0.004)
Constant	13.862***		36.324***		41.893**	
	(2.312)		(9.795)		(16.556)	
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
N	830	830	332	332	243	243
Pseudo R^2	0.748		0.875		0.901	

Note: This table reports probit estimates of Chinese firms' choice of overseas listing location. Odd-numbered columns present coefficient estimates, and even-numbered columns report the corresponding marginal effects. $Treat = 1$ for U.S.-listed firms and $Treat = 0$ for Hong Kong-listed firms. Columns (1) and (2) are estimated on Chinese firms listed overseas during 2009-2020 (pre-HFCAA period). Columns (3)-(6) are estimated on firms listed post-HFCAA, defined as 2021-2024 and 2022-2024, respectively. Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 5: Tobin's q with and without Selection

	(1)	(2)	(3)	(4)	(5)
Treat	0.346**	0.342**	0.307**	0.307**	0.295**
	(0.142)	(0.143)	(0.146)	(0.146)	(0.150)
Post	-0.117	-0.161***	0.093	0.261***	0.262***
	(0.075)	(0.035)	(0.151)	(0.080)	(0.080)
Treat×Post	-0.675***	-0.653***	-0.581***	-0.581***	-0.582***
	(0.128)	(0.127)	(0.130)	(0.130)	(0.131)
Age	-0.013***	-0.013***	-0.014***	-0.014***	-0.014***
	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)
Ln(total assets)	-0.021	-0.014	-0.012	-0.012	-0.012
	(0.018)	(0.020)	(0.020)	(0.020)	(0.020)
Leverage (%)	0.004***	0.005***	0.006***	0.006***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Log sales growth (%)	0.004***	0.004***	0.004***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Intangible asset ratio (%)	0.007***	0.006***	0.006***	0.006***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Turnover	0.054*	0.050*	0.053*	0.053*	0.052*
	(0.031)	(0.030)	(0.031)	(0.031)	(0.031)
IMR					0.026
					(0.111)
Constant	1.583***	1.294***	1.089**	1.089**	1.087**
	(0.358)	(0.423)	(0.435)	(0.435)	(0.436)
Year FE	Yes	No	No	Yes	Yes
Industry FE	No	Yes	No	Yes	Yes
Ind×Year FE	No	No	Yes	Yes	Yes
N	4672	4672	4672	4672	4672
R^2	0.135	0.151	0.170	0.170	0.170

Note: Columns (1) to (4) report DID estimates under alternative fixed effects. Column (5) reports Heckman-corrected DID estimates accounting for selection into listing location on observable and unobservable dimensions. First-stage selection results are reported in Table 4. All covariates are one-year lagged. Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 6: Outputs with and without Selection

	Total assets growth rate (%)		**Sales growth rate (%)**		**Gross profit growth rate (%)**	
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	0.633	-1.300	-3.709	-4.197	-3.294	-2.177
	(1.905)	(2.042)	(2.564)	(2.796)	(3.008)	(3.273)
Post	-34.684***	-34.436***	-17.494**	-17.427**	-9.589	-9.758
	(3.535)	(3.543)	(7.196)	(7.196)	(10.188)	(10.175)
Treat×Post	-4.735**	-4.852**	-7.712**	-7.741**	-3.534	-3.418
	(2.263)	(2.254)	(3.462)	(3.460)	(4.403)	(4.377)
Age	0.073	0.039	-0.121	-0.129	-0.023	-0.005
	(0.063)	(0.064)	(0.087)	(0.088)	(0.101)	(0.102)
Ln(total assets)	1.467***	1.444***	2.297***	2.298***	1.873***	1.868***
	(0.258)	(0.256)	(0.386)	(0.386)	(0.439)	(0.438)
Leverage (%)	-0.113***	-0.113***	-0.027	-0.027	0.073*	0.071*
	(0.021)	(0.021)	(0.034)	(0.034)	(0.039)	(0.039)
Tobin's q	6.640***	6.682***	6.515***	6.524***	8.337***	8.321***
	(0.434)	(0.436)	(0.659)	(0.659)	(0.790)	(0.789)
IMR		4.368**		1.103		-2.515
		(1.694)		(1.703)		(1.829)
Constant	-29.123***	-28.073***	-58.465***	-58.357***	-52.188**	-52.157**
	(8.012)	(8.031)	(14.683)	(14.603)	(22.578)	(23.039)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind×Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	5120	5120	4772	4772	4351	4351
R^2	0.221	0.224	0.152	0.152	0.130	0.130
Adj. R^2	0.202	0.205	0.130	0.129	0.105	0.105

Note: Columns (1), (3), and (5) report DID estimates with year, industry, and industry-by-year fixed effects. Columns (2), (4), and (6) report Heckman-corrected DID estimates accounting for selection into listing location along both observable and unobservable dimensions. First-stage selection results are reported in Table 4. All covariates are one-year lagged. Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 7: Inputs with Selection

	Growth Rate (%)				
	Employment	**Tangible assets**	**K&O intangibles**	**Intangible assets**	**R&D**
	(1)	(2)	(3)	(4)	(5)
Treat	-4.924***	-3.856	1.409	-1.015	-0.134
	(1.736)	(2.904)	(1.509)	(1.794)	(3.061)
Post	-24.016***	-35.633***	-29.515***	-36.923***	-5.384
	(4.622)	(6.949)	(2.441)	(3.447)	(9.715)
Treat×Post	-1.574	2.490	-3.848***	-1.039	-11.649***
	(2.289)	(4.283)	(1.471)	(1.943)	(3.570)
Age	-0.031	-0.073	-0.305***	-0.236***	-0.159
	(0.060)	(0.100)	(0.054)	(0.060)	(0.122)
Ln(total assets)	2.040***	2.772***	1.907***	1.604***	3.771***
	(0.259)	(0.383)	(0.203)	(0.248)	(0.432)
Leverage (%)	-0.115***	-0.242***	-0.118***	-0.162***	-0.120***
	(0.020)	(0.032)	(0.015)	(0.018)	(0.040)
Tobin's q	4.664***	7.040***	4.794***	6.494***	5.740***
	(0.449)	(0.646)	(0.351)	(0.420)	(0.797)
IMR	0.140	-0.050	3.435***	5.044***	1.718
	(1.464)	(2.880)	(1.323)	(1.700)	(2.546)
Constant	-45.443***	-39.323***	-18.716***	-15.443**	-56.420***
	(7.915)	(11.690)	(4.861)	(7.855)	(16.850)
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Ind×Year FE	Yes	Yes	Yes	Yes	Yes
N	5157	5084	5173	5173	2428
R^2	0.141	0.131	0.348	0.275	0.208
Adj. R^2	0.120	0.110	0.332	0.257	0.168

Note: All columns report Heckman-corrected DID estimates accounting for selection into listing location along both observable and unobservable dimensions. First-stage selection results are reported in Table 4, with the sample differing slightly due to an unbalanced panel. All regressions include year, industry, and industry-by-year fixed effects. Covariates are one-year lagged, except for R&D regressions, which use contemporaneous controls. Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 8: Robustness Analysis with a Balanced Panel (2019 - 2024)

		Growth Rate (%)							
	Tobin's q	**Total assets**	**Sales**	**Gross profit**	**Employment**	**Tangible assets**	**K&O intangibles**	**Intangible assets**	**R&D**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treat	0.369**	0.346	-6.215	-3.692	-6.481***	-2.832	1.771	-0.105	-1.691
	(0.145)	(2.789)	(3.994)	(4.911)	(2.344)	(3.841)	(1.804)	(2.120)	(4.018)
Post	-0.131	-27.474***	-26.080***	-16.996**	-16.055***	-19.993***	-18.283***	-31.754***	-31.008**
	(0.138)	(3.003)	(5.809)	(8.398)	(3.747)	(6.038)	(2.147)	(3.810)	(14.426)
Treat×Post	-0.644***	-6.286**	-5.730	-1.595	-0.114	2.002	-3.810**	-1.615	-9.825**
	(0.120)	(2.872)	(4.513)	(5.663)	(2.711)	(4.876)	(1.605)	(2.079)	(4.317)
Age	-0.017***	0.064	-0.103	0.011	-0.012	-0.065	-0.298***	-0.206***	-0.093
	(0.005)	(0.075)	(0.105)	(0.124)	(0.069)	(0.115)	(0.058)	(0.064)	(0.130)
Ln(total assets)	-0.003	1.036***	2.091***	1.476***	1.821***	2.579***	1.930***	1.440***	3.548***
	(0.020)	(0.315)	(0.439)	(0.515)	(0.297)	(0.399)	(0.217)	(0.258)	(0.477)
Leverage (%)	0.007***	-0.126***	-0.070*	0.009	-0.124***	-0.246***	-0.126***	-0.174***	-0.146***
	(0.001)	(0.024)	(0.039)	(0.046)	(0.021)	(0.035)	(0.017)	(0.020)	(0.051)
Log sales growth (%)	0.004***								
	(0.001)								
Intangible asset ratio (%)	0.006***								
	(0.001)								
Turnover	0.040								
	(0.033)								
Tobin's q		6.117***	5.888***	8.005***	4.422***	6.223***	4.507***	6.343***	5.668***
		(0.506)	(0.813)	(0.987)	(0.514)	(0.777)	(0.408)	(0.472)	(0.938)
IMR	-0.021	4.222**	2.156	-2.063	0.616	-1.046	2.746*	4.663**	2.335
	(0.098)	(1.958)	(2.012)	(2.390)	(1.558)	(3.064)	(1.453)	(1.857)	(2.969)
Constant	1.012**	-20.405***	-35.134***	-39.087**	-34.954***	-39.862***	-25.439***	-5.894	-67.040***
	(0.481)	(7.435)	(11.029)	(16.792)	(7.687)	(10.373)	(5.399)	(7.713)	(13.466)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	3375	3686	3437	3132	3732	3662	3739	3739	1861
R^2	0.176	0.210	0.143	0.115	0.133	0.118	0.337	0.278	0.201
Adj. R^2	0.157	0.194	0.125	0.094	0.116	0.100	0.324	0.264	0.169

Note: All columns report Heckman-corrected DID estimates accounting for selection into listing location along both observable and unobservable dimensions. First-stage selection results are reported in Table 4. All regressions include year, industry, and industry-by-year fixed effects. Covariates are one-year lagged, except for R&D regressions, which use contemporaneous controls. Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 9: Placebo Test with Alternative Shock Timing (2019)

		Growth Rate (%)							
	Tobin's q	**Total assets**	**Sales**	**Gross profit**	**Employment**	**Tangible assets**	**K&O intangibles**	**Intangible assets**	**R&D**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treat	0.215	0.429	3.033	0.364	-1.125	-2.632	1.356	-2.423	1.819
	(0.217)	(2.267)	(3.152)	(3.986)	(2.317)	(3.213)	(1.961)	(2.213)	(4.175)
Post	0.094	-20.090***	3.757	-10.817	-17.716***	-15.900**	-17.397***	-25.099***	62.056**
	(0.070)	(3.568)	(7.452)	(10.246)	(5.428)	(7.980)	(2.936)	(4.327)	(25.039)
Treat×Post	0.054	-0.337	-6.614	-11.675*	-3.976	-3.842	-2.168	3.166	-8.877
	(0.146)	(3.229)	(4.743)	(6.544)	(3.282)	(3.848)	(2.042)	(2.395)	(5.756)
Age	0.001	-0.028	-0.163	-0.118	-0.046	-0.056	-0.319***	-0.276***	-0.137
	(0.006)	(0.084)	(0.109)	(0.137)	(0.089)	(0.122)	(0.079)	(0.097)	(0.186)
Ln(total assets)	-0.031	2.780***	2.818***	2.907***	2.903***	3.137***	2.476***	2.850***	3.799***
	(0.027)	(0.373)	(0.486)	(0.587)	(0.382)	(0.497)	(0.324)	(0.434)	(0.727)
Leverage (%)	0.003*	-0.129***	-0.025	0.121**	-0.121***	-0.236***	-0.125***	-0.183***	-0.109*
	(0.002)	(0.026)	(0.045)	(0.051)	(0.028)	(0.036)	(0.020)	(0.028)	(0.064)
Sales growth rate (%)	0.006***								
	(0.001)								
Intangible asset ratio (%)	0.004**								
	(0.002)								
Turnover	0.171**								
	(0.083)								
Tobin's q		8.609***	8.312***	10.220***	5.536***	7.901***	4.850***	6.726***	5.319***
		(0.660)	(0.773)	(0.930)	(0.613)	(0.873)	(0.486)	(0.689)	(1.287)
IMR	0.157	4.576**	-1.690	-3.522	1.893	5.015	5.293***	6.093***	4.502
	(0.194)	(2.006)	(2.343)	(2.760)	(2.526)	(3.820)	(1.428)	(1.904)	(3.145)
Constant	1.403**	-57.163***	-72.092***	-76.259***	-64.287***	-49.104***	-29.972***	-39.772***	-59.235***
	(0.584)	(9.746)	(15.973)	(23.970)	(9.561)	(12.970)	(6.957)	(10.387)	(21.032)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2580	2834	2635	2413	2840	2806	2852	2852	1109
R^2	0.193	0.244	0.174	0.151	0.144	0.143	0.316	0.222	0.172
Adj. R^2	0.162	0.218	0.144	0.118	0.115	0.114	0.293	0.196	0.104

Note: All columns report Heckman-corrected DID estimates accounting for selection into listing location along both observable and unobservable dimensions. First-stage selection results are reported in Table 4, with the sample differing slightly due to an unbalanced panel. All regressions include year, industry, and industry-by-year fixed effects. Covariates are one-year lagged, except for R&D regressions, which use contemporaneous controls. Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 10: Sensitivity Test with Alternative Shock Timing (2021)

		Growth Rate (%)							
	Tobin's q	**Total assets**	**Sales**	**Gross profit**	**Employment**	**Tangible assets**	**K&O intangibles**	**Intangible assets**	**R&D**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treat	0.375**	-0.942	-1.158	0.470	-3.716*	-2.339	2.410	-0.515	1.986
	(0.171)	(2.199)	(3.043)	(3.297)	(1.895)	(3.198)	(1.588)	(1.999)	(3.248)
Post	0.245***	-36.004***	-19.209**	-8.440	-25.613***	-37.832***	-31.304***	-37.608***	-5.766
	(0.083)	(3.717)	(7.826)	(11.440)	(4.817)	(6.767)	(2.429)	(3.552)	(10.517)
Treat×Post	-0.496***	-4.554*	-9.673***	-7.058	-4.446*	1.182	-4.431***	-1.026	-12.054***
	(0.152)	(2.375)	(3.642)	(4.334)	(2.325)	(4.131)	(1.517)	(2.104)	(3.707)
Age	-0.008*	0.028	-0.155*	-0.018	-0.008	-0.081	-0.298***	-0.228***	-0.157
	(0.005)	(0.066)	(0.090)	(0.101)	(0.063)	(0.102)	(0.059)	(0.064)	(0.132)
Ln(total assets)	-0.015	1.772***	2.117***	1.472***	2.207***	2.779***	1.927***	1.705***	3.539***
	(0.021)	(0.258)	(0.395)	(0.438)	(0.276)	(0.393)	(0.221)	(0.267)	(0.469)
Leverage (%)	0.006***	-0.135***	-0.039	0.078**	-0.120***	-0.231***	-0.108***	-0.145***	-0.110***
	(0.001)	(0.021)	(0.035)	(0.039)	(0.021)	(0.032)	(0.016)	(0.019)	(0.042)
Sales growth rate (%)	0.005***								
	(0.001)								
Intangible asset ratio (%)	0.006***								
	(0.001)								
Turnover	0.051								
	(0.032)								
Tobin's q		7.609***	7.405***	9.572***	5.213***	7.456***	5.289***	6.992***	6.621***
		(0.485)	(0.689)	(0.790)	(0.487)	(0.734)	(0.388)	(0.484)	(0.906)
IMR	0.007	4.185**	1.770	-2.132	0.688	-0.194	3.637**	5.614***	0.607
	(0.115)	(1.839)	(1.695)	(1.798)	(1.519)	(3.110)	(1.450)	(1.864)	(2.478)
Constant	1.082**	-35.316***	-55.667***	-46.018**	-49.869***	-40.822***	-20.412***	-19.330**	-53.328***
	(0.453)	(7.935)	(14.420)	(22.777)	(8.050)	(11.622)	(5.164)	(7.998)	(17.408)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	4271	4705	4366	3985	4741	4674	4755	4755	2170
R^2	0.181	0.246	0.158	0.136	0.147	0.132	0.362	0.287	0.198
Adj. R^2	0.156	0.226	0.133	0.109	0.124	0.109	0.345	0.268	0.152

Note: All columns report Heckman-corrected DID estimates accounting for selection into listing location along both observable and unobservable dimensions. First-stage selection results are reported in Table 4, with the sample differing slightly due to an unbalanced panel. All regressions include year, industry, and industry-by-year fixed effects. Covariates are one-year lagged, except for R&D regressions, which use contemporaneous controls. Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 11: Multi-Dose Analysis of HFCAA Treatment Intensity

		Growth Rate (%)							
	Tobin's q	**Total assets**	**Sales**	**Gross profit**	**Employment**	**Tangible assets**	**K&O intangibles**	**Intangible assets**	**R&D**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OnList	0.590***	1.407	2.593	1.917	-0.740	0.855	3.074*	0.257	4.185
	(0.193)	(2.327)	(3.085)	(3.764)	(2.025)	(3.056)	(1.579)	(1.970)	(3.183)
OffList	-0.150	-0.540	-12.916***	-11.376**	-11.085***	-11.037**	2.660	2.622	-7.340
	(0.164)	(3.082)	(4.289)	(5.256)	(2.212)	(4.556)	(2.423)	(2.651)	(5.044)
Post	0.230***	-34.735***	-18.124**	-10.482	-24.349***	-35.937***	-29.656***	-37.077***	-5.831
	(0.079)	(3.529)	(7.129)	(10.137)	(4.611)	(6.928)	(2.448)	(3.451)	(9.784)
OnList×Post	-0.810***	-5.296**	-7.619*	-2.037	-3.129	-1.087	-5.792***	-2.255	-17.121***
	(0.168)	(2.676)	(3.938)	(4.675)	(2.793)	(4.940)	(1.635)	(2.073)	(3.705)
OffList×Post	-0.202	-3.887	-8.170	-6.748	0.485	7.808	-0.257	1.594	2.027
	(0.183)	(3.951)	(5.868)	(8.572)	(3.527)	(7.698)	(2.792)	(3.719)	(7.447)
Age	-0.012***	0.076	-0.086	0.007	-0.009	-0.054	-0.282***	-0.206***	-0.132
	(0.005)	(0.063)	(0.084)	(0.101)	(0.058)	(0.098)	(0.052)	(0.058)	(0.115)
Ln(total assets)	-0.030	1.419***	1.696***	1.362***	1.729***	2.493***	1.997***	1.776***	3.588***
	(0.021)	(0.265)	(0.363)	(0.446)	(0.255)	(0.383)	(0.217)	(0.258)	(0.484)
Leverage (%)	0.006***	-0.113***	-0.031	0.067*	-0.115***	-0.242***	-0.118***	-0.162***	-0.127***
	(0.001)	(0.021)	(0.033)	(0.038)	(0.020)	(0.031)	(0.015)	(0.018)	(0.040)
Sales growth rate (%)	0.004***								
	(0.001)								
Intangible asset ratio (%)	0.006***								
	(0.001)								
Turnover	0.059*								
	(0.032)								
Tobin's q		6.599***	6.141***	7.909***	4.430***	6.778***	4.774***	6.518***	5.573***
		(0.430)	(0.645)	(0.809)	(0.439)	(0.640)	(0.356)	(0.418)	(0.782)
Constant	1.473***	-28.039***	-45.224***	-39.984*	-38.525***	-32.925***	-20.972***	-19.743**	-49.404***
	(0.440)	(8.069)	(14.770)	(23.292)	(7.850)	(11.781)	(5.132)	(7.992)	(16.997)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	4672	5120	4772	4351	5157	5084	5173	5173	2428
R^2	0.182	0.221	0.159	0.134	0.147	0.134	0.346	0.273	0.211
Adj. R^2	0.159	0.202	0.136	0.108	0.126	0.112	0.330	0.255	0.171

Note: All columns report the DID estimates controlling for year, industry, and industry-by-year fixed effects. The treatment group is split into $OnList$ and $OffList$: $OnList$ comprises U.S. CCS directly identified by the PCAOB and therefore subject to explicit delisting pressure, while $OffList$ comprises U.S. CCS affected only through spillover effects. Covariates are one-year lagged, except for R&D regressions, which use contemporaneous controls. Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 12: Multi-Dose Analysis of Pre-Shock Dual-Listing Status

		Growth Rate (%)							
	Tobin's q	**Total assets**	**Sales**	**Gross profit**	**Employment**	**Tangible assets**	**K&O intangibles**	**Intangible assets**	**R&D**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
DualList	1.685***	13.850***	8.248*	5.540	8.373**	3.257	5.060	2.065	2.682
	(0.302)	(4.245)	(4.785)	(5.383)	(3.590)	(5.580)	(3.887)	(5.542)	(5.700)
Non DualList	0.065	-1.075	-5.526*	-4.551	-6.854***	-4.847*	2.728*	1.455	0.358
	(0.136)	(2.052)	(2.843)	(3.296)	(1.724)	(2.921)	(1.457)	(1.675)	(2.908)
Post	0.235***	-34.945***	-17.994**	-9.935	-24.388***	-35.846***	-29.796***	-37.407***	-5.541
	(0.079)	(3.527)	(7.183)	(10.211)	(4.629)	(6.952)	(2.443)	(3.454)	(9.719)
DL×Post	-1.564***	-18.554***	-7.292	-0.014	-10.790***	-3.550	-3.944	-5.095	-12.043**
	(0.269)	(4.469)	(4.952)	(7.208)	(3.677)	(8.835)	(2.968)	(4.694)	(5.047)
NonDL×Post	-0.429***	-2.869	-7.402*	-5.011	0.023	3.694	-3.402**	-0.311	-11.216***
	(0.131)	(2.473)	(3.845)	(4.835)	(2.502)	(4.751)	(1.642)	(2.097)	(3.961)
Age	-0.014***	0.066	-0.132	-0.035	-0.036	-0.083	-0.278***	-0.194***	-0.147
	(0.005)	(0.063)	(0.087)	(0.102)	(0.059)	(0.097)	(0.052)	(0.058)	(0.118)
Ln(total assets)	-0.038*	1.307***	1.989***	1.557***	1.803***	2.689***	1.912***	1.719***	3.711***
	(0.020)	(0.270)	(0.386)	(0.450)	(0.261)	(0.403)	(0.210)	(0.250)	(0.455)
Leverage (%)	0.006***	-0.109***	-0.022	0.077**	-0.109***	-0.236***	-0.119***	-0.165***	-0.123***
	(0.001)	(0.022)	(0.034)	(0.039)	(0.020)	(0.032)	(0.015)	(0.018)	(0.041)
Log sales growth (%)	0.004***								
	(0.001)								
Intangible asset ratio (%)	0.006***								
	(0.001)								
Turnover	0.063**								
	(0.030)								
Tobin's q		6.402***	6.210***	8.140***	4.358***	6.887***	4.725***	6.463***	5.648***
		(0.447)	(0.681)	(0.811)	(0.473)	(0.656)	(0.358)	(0.417)	(0.814)
Constant	1.624***	-25.440***	-51.632***	-45.300**	-40.177***	-37.442***	-19.207***	-18.455**	-54.509***
	(0.437)	(8.198)	(14.749)	(22.767)	(7.958)	(12.037)	(4.977)	(7.887)	(16.734)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	4642	5087	4742	4332	5123	5051	5139	5139	2412
R^2	0.200	0.225	0.154	0.132	0.145	0.132	0.342	0.271	0.205
Adj. R^2	0.177	0.205	0.131	0.106	0.124	0.110	0.326	0.253	0.164

Note: All columns report the DID estimates with year, industry, and industry-by-year fixed effects. By the end of 2024, 35 China Concept Stocks had been dual-listed on both U.S. and Hong Kong exchanges. Among these firms, 20 completed dual listings between May 2018 and December 2021, after the implementation of the 2018 Hong Kong IPO reforms but before delisting risks intensified. Based on our sample selection criteria and data availability, 13 of these 20 firms are included in our sample and classified as dual-listing firms. CCS that obtained dual-listing after 2022 are excluded to ensure clear identification. Covariates are one-year lagged, except for R&D regressions, which use contemporaneous controls. Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 13: Multi-Dose Analysis of Firm-Level Perceived Risk

		Growth Rate (%)							
	Tobin's q	**Total assets**	**Sales**	**Gross profit**	**Employment**	**Tangible assets**	**K&O intangibles**	**Intangible assets**	**R&D**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
HighNegative	0.436**	4.129	1.447	2.399	-0.906	2.280	4.780***	2.614	3.027
	(0.210)	(2.609)	(3.532)	(3.980)	(2.146)	(3.303)	(1.703)	(2.190)	(3.178)
LowNegative	0.203	-2.379	-7.983**	-8.292**	-8.277***	-9.231**	1.343	0.024	-2.196
	(0.183)	(2.488)	(3.415)	(3.923)	(2.090)	(3.767)	(1.881)	(2.152)	(3.900)
Post	0.255***	-34.773***	-17.657**	-9.863	-24.127***	-35.795***	-29.750***	-37.235***	-5.754
	(0.080)	(3.522)	(7.169)	(10.167)	(4.615)	(6.932)	(2.435)	(3.443)	(9.835)
High×Post	-0.783***	-6.429**	-8.145*	-4.500	-3.334	-0.602	-5.520***	-2.712	-12.290***
	(0.178)	(3.044)	(4.336)	(5.308)	(3.241)	(4.852)	(2.005)	(2.719)	(4.252)
Low×Post	-0.405**	-3.395	-7.521	-3.191	-0.220	4.773	-2.227	0.712	-10.670**
	(0.179)	(3.248)	(4.842)	(6.363)	(2.982)	(6.777)	(1.969)	(2.566)	(5.384)
Age	-0.014***	0.078	-0.115	-0.016	-0.024	-0.064	-0.276***	-0.196***	-0.133
	(0.005)	(0.063)	(0.086)	(0.101)	(0.058)	(0.096)	(0.052)	(0.058)	(0.114)
Ln(total assets)	-0.013	1.361***	2.102***	1.674***	1.917***	2.589***	1.886***	1.611***	3.657***
	(0.021)	(0.256)	(0.383)	(0.440)	(0.254)	(0.380)	(0.207)	(0.249)	(0.436)
Leverage (%)	0.006***	-0.112***	-0.027	0.075*	-0.114***	-0.241***	-0.118***	-0.163***	-0.122***
	(0.001)	(0.021)	(0.034)	(0.038)	(0.020)	(0.032)	(0.015)	(0.018)	(0.040)
Sales growth rate (%)	0.004***								
	(0.001)								
Intangible asset ratio (%)	0.006***								
	(0.001)								
Turnover	0.049								
	(0.032)								
Tobin's q		6.586***	6.438***	8.219***	4.602***	6.944***	4.730***	6.421***	5.782***
		(0.437)	(0.660)	(0.792)	(0.440)	(0.648)	(0.349)	(0.414)	(0.789)
Constant	1.113**	-26.741***	-54.121***	-47.294**	-42.723***	-35.173***	-18.606***	-16.136**	-52.889***
	(0.445)	(8.034)	(14.826)	(22.954)	(7.890)	(11.696)	(4.935)	(7.855)	(16.369)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind×Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	4672	5120	4772	4351	5157	5084	5173	5173	2428
R-sq	0.171	0.224	0.155	0.132	0.144	0.134	0.345	0.272	0.209
adj. R-sq	0.148	0.204	0.132	0.106	0.123	0.113	0.329	0.254	0.168

Note: All columns report the DID estimates with year, industry, and industry-by-year fixed effects. The treatment group is split by firm-specific perceived HFCAA risk. Covariates are one-year lagged, except for R&D regressions, which use contemporaneous controls. Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 14: Mechanism Analysis of Financing Constraints

Subgroup	R&D Growth Rate (%)														
	Age			**Asset Recovery**			**Intangible Ratio**			**Sales Growth Volatility**			**Cash-to-Asset Ratio**		
	Young	Old	p-value	Low	High	p-value	High	Low	p-value	High	Low	p-value	Low	High	p-value
	(1)	(2)		(3)	(4)		(5)	(6)		(7)	(8)		(9)	(10)	
Treat	5.605	-2.828	0.074	0.416	-0.717	0.823	-3.710	4.631	0.067	1.806	-2.768	0.364	1.366	-1.504	0.546
	(3.858)	(3.653)		(3.692)	(4.325)		(4.014)	(3.391)		(4.504)	(3.406)		(3.528)	(4.109)	
Post	-7.456	-7.151	0.809	-5.146	-6.907	0.190	-6.052	-6.367	0.821	-5.280	-6.586	0.419	-4.842	-7.143	0.083
	(9.480)	(10.433)		(10.274)	(9.797)		(10.673)	(9.781)		(9.428)	(10.609)		(9.823)	(10.226)	
Treat×Post	-19.098***	-3.157	0.007	-13.067***	-8.966*	0.510	-11.741**	-10.119**	0.779	-18.396***	-4.325	0.022	-14.984***	-7.280	0.195
	(4.800)	(4.551)		(4.621)	(5.082)		(5.129)	(3.926)		(5.483)	(4.042)		(4.798)	(4.579)	
Age				-0.197	-0.059	0.107	-0.165	-0.062	0.195	-0.185	-0.085	0.232	-0.193	-0.066	0.138
				(0.120)	(0.122)		(0.119)	(0.119)		(0.124)	(0.118)		(0.117)	(0.124)	
Ln(total assets)	3.711***	3.397***	0.387	3.542***	3.589***	0.895	3.308***	3.589***	0.433	3.920***	3.279***	0.069	3.757***	3.377***	0.296
	(0.455)	(0.468)		(0.452)	(0.483)		(0.469)	(0.472)		(0.476)	(0.442)		(0.439)	(0.484)	
Leverage (%)	-0.159***	-0.103**	0.040	-0.106**	-0.149***	0.108	-0.122***	-0.122***	0.999	-0.142***	-0.112**	0.270	-0.105**	-0.148***	0.121
	(0.044)	(0.043)		(0.042)	(0.046)		(0.044)	(0.044)		(0.043)	(0.046)		(0.042)	(0.046)	
Tobin's q	5.957***	6.182***	0.773	6.073***	5.994***	0.923	6.816***	5.325***	0.065	5.858***	6.305***	0.583	5.545***	6.445***	0.269
	(0.879)	(0.795)		(0.891)	(0.835)		(0.751)	(0.952)		(0.847)	(0.883)		(0.911)	(0.806)	
IMR	-0.564	1.433	0.489	0.928	0.699	0.944	-1.000	0.369	0.652	-0.225	1.621	0.556	1.595	-0.047	0.581
	(2.518)	(3.153)		(2.374)	(3.501)		(3.312)	(2.683)		(3.414)	(2.436)		(2.275)	(3.316)	
Constant	-47.156**	-50.748***		-44.766*	-51.973***		-40.005*	-54.267***		-50.466**	-47.405***		-48.790**	-47.572***	
	(21.976)	(16.799)		(22.864)	(17.127)		(22.670)	(17.244)		(22.755)	(16.537)		(22.907)	(16.664)	
Year FE	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Industry FE	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Ind×Year FE	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
N	2118	2140		2144	2114		2144	2114		2094	2147		2147	2094	
R^2	0.221	0.185		0.208	0.196		0.213	0.193		0.210	0.198		0.198	0.210	
Adj. R^2	0.175	0.138		0.161	0.149		0.167	0.145		0.163	0.151		0.151	0.163	

Note: All columns report DID estimates with year, industry, and industry-by-year fixed effects. The control group consists of all Hong Kong-listed CCS, while the treatment group comprises U.S.-listed CCS split by the median. Reported p-values are from Wald tests of null hypothesis that coefficients are equal across the two subsamples. Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 15: Missing IPO Quality: Firm Characteristics

	Age	**Ln(total assets)**	**Leverage (%)**	**ROA (%)**	**Sales growth rate (%)**	**Intangible ratio (%)**
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	-5.058***	-0.587***	2.239	-17.722***	80.452***	20.107***
	(0.566)	(0.122)	(4.009)	(2.017)	(8.032)	(2.043)
Post	8.518	0.548	110.111	-17.456	9.454	74.528**
	(9.722)	(2.087)	(68.827)	(34.637)	(137.909)	(35.086)
Treat×Post	-0.659	-1.304***	-31.278***	20.635***	-103.846***	-19.162***
	(1.080)	(0.232)	(7.648)	(3.849)	(15.325)	(3.899)
Constant	10.353***	18.005***	34.183	33.114***	-19.848	0.165
	(3.587)	(0.770)	(25.395)	(12.780)	(50.884)	(12.945)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind×Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	1079	1079	1079	1079	1079	1079
R^2	0.300	0.369	0.172	0.287	0.218	0.339
Adj. R^2	0.191	0.271	0.042	0.175	0.096	0.236
	Overseas sales ratio (%)	**WVR**	**Top-5 ownership (%)**	**Public float (%)**	**Secondary share (%)**	**U.S. VC**
	(7)	(8)	(9)	(10)	(11)	(12)
Treat	-7.123***	0.371***	-11.471***	-13.635***	5.330***	0.247***
	(2.366)	(0.022)	(1.318)	(0.699)	(1.314)	(0.027)
Post	74.888*	-0.225	-54.107**	1.310	-13.922	0.067
	(40.630)	(0.380)	(22.630)	(12.001)	(22.558)	(0.458)
Treat×Post	23.054***	-0.146***	10.352***	-5.665***	-1.684	-0.314***
	(4.515)	(0.042)	(2.515)	(1.334)	(2.507)	(0.051)
Constant	5.808	-0.124	103.824***	36.736***	-1.777	-0.082
	(14.991)	(0.140)	(8.350)	(4.428)	(8.323)	(0.169)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind×Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	1079	1079	1079	1079	1079	1079
R^2	0.211	0.406	0.367	0.534	0.200	0.236
Adj. R^2	0.087	0.313	0.268	0.461	0.074	0.116

Note: All continuous variables are winsorized at the 5th and 95th percentiles. Variables definitions follow Table 2. Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 16: Financing Performance and Valuations

	Ln(IPO proceeds)		**Tobin's q at listing**		**Tobin's q at lising year end**	
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	0.021	0.176	4.406***	5.896***	1.420***	1.820***
	(0.191)	(0.253)	(0.705)	(0.785)	(0.178)	(0.179)
Post	-0.568***	-0.586***	-0.633	-0.712	1.568***	1.539***
	(0.089)	(0.100)	(1.556)	(1.609)	(0.276)	(0.274)
Treat×Post	-0.212**	-0.186*	2.420*	2.102	-1.099**	-1.180***
	(0.086)	(0.089)	(1.104)	(1.204)	(0.381)	(0.371)
Ln(total assets)	0.626***	0.641***				
	(0.042)	(0.048)				
Public float (%)	0.001	0.006				
	(0.004)	(0.006)				
IMR		-0.179*		-3.053***		-0.812***
		(0.090)		(0.322)		(0.119)
Constant	6.059***	5.641***	1.308***	1.318***	2.115***	2.116***
	(0.784)	(0.972)	(0.235)	(0.217)	(0.059)	(0.053)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind×Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	1066	1066	1079	1079	1067	1067
R^2	0.683	0.684	0.331	0.362	0.288	0.309
Adj. R^2	0.632	0.633	0.226	0.261	0.175	0.198

Note: Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 17: Selection Model for Listing Choice with Macro Controls

	Coef. (1)	**Marg. Eff.** (2)	**Coef.** (3)	**Marg. Eff.** (4)
Treat: Listed in the U.S.				
Age	-0.044**	-0.003**	-0.044**	-0.004**
	(0.018)	(0.001)	(0.018)	(0.001)
Ln(total assets)	-0.699***	-0.054***	-0.658***	-0.054***
	(0.098)	(0.007)	(0.091)	(0.007)
Leverage (%)	-0.005	-0.000	-0.005	-0.000
	(0.004)	(0.000)	(0.004)	(0.000)
ROA (%)	-0.025***	-0.002***	-0.022***	-0.002***
	(0.007)	(0.001)	(0.007)	(0.001)
Sales growth rate (%)	0.003**	0.000**	0.003**	0.000**
	(0.002)	(0.000)	(0.001)	(0.000)
Overseas sales ratio (%)	-0.003	-0.000	-0.003	-0.000
	(0.004)	(0.000)	(0.004)	(0.000)
Intangible ratio (%)	0.013**	0.001**	0.011**	0.001**
	(0.005)	(0.000)	(0.005)	(0.000)
Weighted voting rights	3.162***	0.246***	2.915***	0.240***
	(0.649)	(0.048)	(0.557)	(0.043)
Top-5 ownership (%)	-0.019***	-0.002***	-0.020***	-0.002***
	(0.006)	(0.000)	(0.006)	(0.000)
Public float (%)	-0.120***	-0.009***	-0.116***	-0.010***
	(0.012)	(0.001)	(0.012)	(0.001)
Secondary Share (%)	0.020***	0.002***	0.023***	0.002***
	(0.007)	(0.000)	(0.007)	(0.001)
U.S. VC	0.658**	0.051**	0.759***	0.062***
	(0.299)	(0.023)	(0.291)	(0.023)
Direct Flight	0.131	0.010	0.093	0.008
	(0.198)	(0.015)	(0.190)	(0.016)
First-day return (%)	0.181***	0.014***	0.012	0.001
	(0.058)	(0.004)	(0.033)	(0.003)
VIX			0.068***	0.006***
			(0.024)	(0.002)
U.S. risk-free rate (%)			-0.018	-0.002
			(0.112)	(0.009)
China GDP Growth (%)			-0.031	-0.003
			(0.130)	(0.011)
Constant	13.862***		15.239***	
	(2.312)		(2.116)	
Year FE	Yes	Yes	No	No
Industry FE	Yes	Yes	Yes	Yes
N	830	830	830	830
Pseudo R^2	0.748		0.732	

Note: This table reports probit estimates of Chinese firms' choice of overseas listing venue, controlling for either year fixed effects or macro time trends. Odd (even) columns report coefficients (marginal effects). $Treat = 1$ for U.S.-listed firms and $Treat = 0$ for Hong Kong-listed firms. The sample covers firms listed between 2009 and 2020. Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 18: The Propensity to List in the U.S. Over Time

Year	N	U.S.	Expected U.S.	Actual percent	Expected percent	Act− exp	Avg. (act− exp)	t-value
2009	60	17	15	28.33	25.00	3.33		
2010	86	27	22	31.40	25.58	5.81		
2011	44	8	7	18.18	15.91	2.27		
2012	33	2	3	6.06	9.09	-3.03		
2013	55	7	8	12.73	14.55	-1.82		
2014	67	15	11	22.39	16.42	5.97		
2015	53	9	6	16.98	11.32	5.66		
2016	43	9	9	20.93	20.93	0.00		
2017	52	17	16	32.69	30.77	1.92		
2018	104	30	31	28.85	29.81	-0.96		
2019	115	28	28	24.35	24.35	0.00		
2020	118	31	31	26.27	26.27	0.00	1.60	
2022	64	12	13	18.75	20.31	-1.56		
2023	84	25	37	29.76	44.05	-14.29		
2024	101	56	57	55.45	56.44	-0.99	-5.61	-2.73**

Note: This table examines whether Chinese firms' propensity to list on a U.S. stock exchange (NYSE or Nasdaq) relative to the HKEX has declined after 2022. A Probit model is estimated on the 2009-2020 listing cohort, excluding 2021 listings for cleaner identification. "N" denotes the number of Chinese firms listed on U.S. main exchanges or the HKEX in a given year. "U.S." denotes the number listed on U.S. exchanges. "Expected U.S." is the predicted count based on the probit model in Table 17. "Actual percent" and "Expected percent" denote the actual and predicted shares of U.S. listings relative to combined U.S. and HK listings. The last three columns report the difference between actual and expected shares, the average difference across estimation and prediction periods, and the corresponding t-statistic.

Table 19: Confusion Matrices and Performance Metrics

Example

		Model Prediction	
		HK	U.S.
Actual	HK	True Negative (TN)	False Positive (FP)
Outcome	U.S.	False Negative (FN)	True Positive (TP)

Accuracy	$(TP+TN)/(TP+TN+FP+FN)$
Precision	$TP/(TP+FP)$
Recall (Sensitivity)	$TP/(TP+FN)$
F1	$\frac{2\times\text{Precision}\times\text{Recall}}{\text{Precision}+\text{Recall}} = \frac{2\times TP}{2\times TP+FP+FN}$

Estimation Window: 2009-2020

		Model Prediction	
		HK	U.S.
Actual	HK	612	18
Outcome	U.S.	31	169
			830

Accuracy	94.10%
Precision	90.37%
Recall	84.50%
F1	87.34%

Prediction Window: 2022-2024

		Model Prediction	
		HK	U.S.
Actual	HK	137	19
Outcome	U.S.	5	88
			249

Accuracy	90.36%
Precision	82.24%
Recall	94.62%
F1	88.00%

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Appendix

A1 Intangible Assets

The balance sheet item "goodwill and intangible assets" captures acquired goodwill and identifiable intangible assets, including patents, customer relationships, and licensing rights. However, other intangible assets, such as employee training and reputation, are neither identifiable nor directly measurable. Furthermore, under accounting conservatism, most R&D expenditures are expensed when future benefits are uncertain. Consequently, reported balance sheet values significantly understate firms' intangible capital. Following Peters and Taylor (2017), we construct knowledge and organizational (K&O) intangibles by capitalizing R&D expenditures and a fraction of SG&A expenses, and applying perpetual inventory methods with annual depreciation. The K&O intangible assets accumulate as follows:

$$K_{it} = (1 - \delta_{R\&D})K_{i,t-1} + R\&D_{it}, \tag{A.1}$$

$$S_{it} = (1 - \delta_{SG\&A})S_{i,t-1} + 30\% \times SG\&A_{it}, \tag{A.2}$$

where K_{it} and S_{it} denote the knowledgeable and the organizational intangible stocks of firm i at time t, respectively. The R&D depreciation rate follows industry-specific estimates in W. C. Y. Li and Hall (2020), with 15% assigned to uncovered industries. The depreciation rate for SG&A is 20%. We assume that 30% of SG&A expenditures are capitalized as organizational capital (e.g., employee training and advertising). We combine K&O capital with reported goodwill and intangible assets to measure firms' total intangible capital.

$$\text{K\&O Intangibles}_{it} = K_{it} + S_{it}, \tag{A.3}$$

$$\text{Intangibles}_{it} = \text{K\&O Intangibles}_{it} + \text{Reported Intangibles}_{it}. \tag{A.4}$$

Taking the first difference of log values yields the growth rate of intangible assets. Across all measures of intangible assets, U.S. firms accumulated at a much faster pace than their Hong Kong counterparts in the pre-treatment period. This rapid growth persists in the post-treatment period, though its magnitude diminishes.

A2 Perceived Risk

Under SEC filing requirements, foreign issuers listed on U.S. exchanges must submit their annual reports within four months of the fiscal year end. Meanwhile, the PCAOB-identified list of Chinese firms subject to direct delisting risk began to be updated on March 30, 2022, few firms knew, before the filing deadline for their 2021 annual reports, whether they would be included. Hence, the perceived delisting risk discussed in the 2021 annual reports should primarily capture firm-specific characteristics and does not necessarily correspond to actual direct delisting risk.

To measure firm-level perceived risk, we first extract from annual reports all sentences that refer to the HFCAA, including alternative expressions. Second, adapting the word lists in Loughran and McDonald (2011), we classify sentence tone using the financial negative word list and negated positive terms. We then define perceived HFCAA risk as the number of negative sentences about the Act scaled by the total number of sentences mentioning it:

$$\text{Perceived risk}_{i,2021} = \frac{\#\text{ HFCAA-related sentences with Negative Tone}_{i,2021}}{\#\text{ HFCAA-related sentences}_{i,2021}}. \tag{A.5}$$

A3 Asset Reversibility

Asset reversibility captures the liquidation value of assets, which varies by type: cash and cash equivalents are highly reversible, receivables are relatively liquid, inventories and PPE are moderately reversible, and intangible assets are the least reversible. Asset reversibility also varies across industries. For example, traditional industries (e.g., logging and food manufacturing) hold more generic PPE with higher liquidation value than high-technology firms. Conversely, their intangible assets, primarily goodwill and trademarks, often have lower realizable values relative to book value than those of high-tech firms.

Following Kermani and Ma (2023), we apply industry- and asset-specific recovery rates to compute firms' total reversible asset value:

$$\text{Liquidation value}_{it} = \sum_{j} \lambda_{ij} \text{Asset}_{ijt}, \tag{A.6}$$

where $\lambda_{i,j}$ denotes the liquidation recovery rate for asset type j for firm i in a certain industry, and $\text{Asset}_{i,j,t}$ represents the book value of asset j for firm i at period t. The asset types considered are cash and equivalents, PPE, inventories, receivables, goodwill, and intangible assets. Then, firm-level asset reversibility is calculated as follows:

$$\text{ARec}_{it} = \frac{\text{Liquidation value}_{it}}{\text{Total assets}_{it}} \times 100\%. \tag{A.7}$$

The denominator is the current book value of total assets. Table A3 reports the summary statistics for asset reversibility among Chinese firms listed overseas. In the baseline sample, the average firm-level liquidation recovery rates equal 43.55% for U.S. CCS and 42.60% for HK CCS, both closely aligned with the 43% average for Compustat firms calculated by Kermani and Ma (2023).

Appendix Figures and Tables

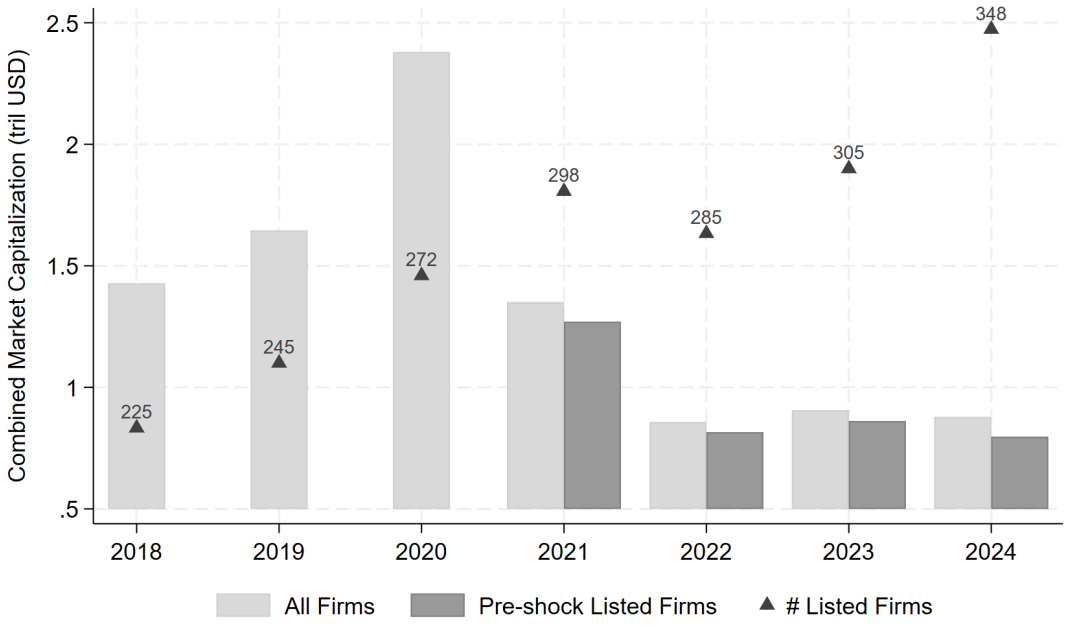


Figure A1: Market Capitalization of U.S.-listed Chinese Firms, 2018-2024

Table A1: Variable Definitions and Data Sources

Variable	Definition	Sources
Panel A: Outcome Variables for Baseline Model		
Tobin's q	(Market value of equity + book value of total debt) / book value of total assets	Wind
Total assets growth rate (%)	First-differenced ln(total assets) × 100 (%)	Wind
Sales growth rate (%)	First-differenced ln(sales revenue) × 100 (%)	Wind
Gross profit growth rate (%)	First-differenced ln(gross profit) × 100 (%)	Wind
Employment growth rate (%)	First-differenced ln(number of employment) × 100 (%)	Wind
Tangible assets growth rate (%)	First-differenced ln(net fixed asset) × 100 (%)	Wind
K&O intangibles growth rate (%)	First-differenced ln(knowledge and organization asset) × 100 (%)	Wind
Reported intangible asset growth rate (%)	First-differenced ln(reported intangible asset) × 100 (%)	Wind
Intangible asset growth rate (%)	First-differenced ln(total intangible asset) × 100 (%)	Wind
R&D growth rate (%)	First-differenced ln(R&D) if no missing R&D × 100 (%)	Wind
Panel B: Treatment and Control Variables for Baseline Model		
Treat	Dummy, = 1 if the firm is listed on U.S. exchanges, and 0 otherwise	Wind, CSMAR, S&P Capital IQ
Age	Firm's age	Prospectus
Ln(total assets)	ln(total assets)	Wind
Leverage (%)	Non-operating leverage	Wind
Intangible asset ratio (%)	Intangible assets / total assets × 100 (%)	Wind
Turnover	Annual stock turnover	Wind
Panel C: Variables for Selection Model		
Age	Firm's age from establishment	Prospectus
Ln(total assets)	ln(total assets) in the year prior to the IPO	Wind, Prospectus
Leverage (%)	Leverage, non-operating liabilities / total assets × 100 (%) in the year prior to the IPO	Wind
ROA (%)	Earnings before interest and tax ×2 / (total assets at the beginning of the year + total assets at the end of the year) × 100 (%) in the year prior to the IPO	Wind, Prospectus
Sales growth rate (%)	Sales revenue growth rate (%) in the year prior to the IPO	Wind, Prospectus
Overseas sales ratio (%)	Oversea sales revenue / sales revenue × 100 (%) in the year prior to the IPO	Prospectus
Intangible ratio (%)	Intangible asset / total asset × 100 (%) in the year prior to the IPO	Wind
Weighted voting rights	Dummy, = 1 if a firm has weighted voting rights	Wind, Prospectus
Top-5 ownership (%)	Total shares (%) owned by the top 5 shareholders prior to the IPO	Prospectus
Public float (%)	Number of offering shares / total shares × 100 (%)	Prospectus
Secondary Share (%)	Secondary share at IPO (%)	Wind, Prospectus
U.S. VC	Dummy, = 1 if any well-known U.S. VC holds shares and appoints a board representative in the firm before IPO	Prospectus
Direct flight	Dummy, = 1 when there is a direct flight from the firm's headquarters or principal business city to New York in the year prior to the IPO	Prospectus, Wiki, and official news
First-day return (%)	Proceeds-weighted mean first-day return of the U.S.-listed firms in the year prior to the IPO	Jay R. Ritter's IPO Data [a]
VIX	VIX index in the year prior to the IPO	Fred
U.S. risk-free rate (%)	Inflation-adjusted three-month Treasury bill rate in the U.S. in the year prior to the IPO	Fred
China GDP Growth (%)	Real GDP growth rate in China in the year prior to the IPO	CEIC, China Statistical Yearbook

Note: All continuous variables are winsorized at the 5th and 95th percentiles.

[a] Ritter, J. R. (2026). IPO data. https://site.warrington.ufl.edu/ritter/ipo-data/

Table A2: List of U.S. and Hong Kong dual-listed CCS

Company Name	U.S. Ticker	U.S. Listing Date	HK Ticker	HK Listing Date	HK Listing Type
New Oriental	MLCO	2006-12-19	6883.HK	2011-12-07	Primary
Graphex	GRFX	2022-08-17	6128.HK	2014-06-25	Primary
BeOne Medicines *	BGNE	2016-02-03	6160.HK	2018-08-08	Primary
Alibaba *	BABA	2014-09-19	9988.HK	2019-11-26	Secondary
NetEase	NTES	2000-06-30	9999.HK	2020-06-11	Secondary
JD.com *	JD	2014-05-22	9618.HK	2020-06-18	Secondary
Yum China	YUMC	2016-10-17	9987.HK	2020-09-10	Secondary
H World *	HTHT	2010-03-26	1179.HK	2020-09-22	Secondary
Zai Lab	ZLAB	2017-09-20	9688.HK	2020-09-28	Secondary
Baozun *	BZUN	2015-05-21	9991.HK	2020-09-29	Secondary
ZTO Express *	ZTO	2016-10-27	2057.HK	2020-09-29	Secondary
GDS *	GDS	2016-11-02	9698.HK	2020-11-02	Secondary
Melco	EDU	2006-09-07	9901.HK	2020-11-09	Secondary
Futu *	FUTU	2019-03-08	3588.HK	2020-12-30	Primary
Autohome *	ATHM	2013-12-11	2518.HK	2021-03-15	Secondary
Baidu	BIDU	2005-08-05	9888.HK	2021-03-23	Secondary
Bilibili *	BILI	2018-03-28	9626.HK	2021-03-29	Secondary
Trip.com	TCOM	2003-12-09	9961.HK	2021-04-19	Secondary
Hutchmed *	HCM	2016-03-17	0013.HK	2021-06-30	Primary
XPeng *	XPEV	2020-08-27	9868.HK	2021-07-07	Primary
Li Auto	LI	2020-07-30	2015.HK	2021-08-12	Primary
Weibo *	WB	2014-04-17	9898.HK	2021-12-08	Secondary
NIO	NIO	2018-09-12	9866.HK	2022-03-10	Secondary
Zhihu	ZH	2021-03-26	2390.HK	2022-04-22	Primary
KE Holdings	BEKE	2020-08-13	2423.HK	2022-05-11	Primary
OneConnect	OCFT	2019-12-13	6638.HK	2022-07-04	Primary
Tuya	TUYA	2021-03-18	2391.HK	2022-07-05	Primary
Noah	NOAH	2010-11-10	6686.HK	2022-07-13	Secondary
Miniso	MNSO	2020-10-15	9896.HK	2022-07-13	Primary
Tencent Music	TME	2018-12-12	1698.HK	2022-09-21	Secondary
Qifu	QFIN	2018-12-14	3660.HK	2022-11-29	Secondary
Kanzhun	BZ	2021-06-11	2076.HK	2022-12-22	Primary
Kingsoft Cloud	KC	2020-05-08	3896.HK	2022-12-30	Primary
Super Hi	HDL	2024-05-17	9658.HK	2022-12-30	Primary
Lufax	LU	2020-10-30	6623.HK	2023-04-14	Primary

Note: * denotes firms included in our dual-listed group. HK Listing Type denotes the form of a firm's first listing on the HKEX, and HK Listing Date is the corresponding listing date.

Table A3: Summary Statistics: Firm-level Liquidation Recovery Rate

Variable		**Mean**	**SD**	**P25**	**P50**	**P75**	**N**
Firm-level Liquidation Recovery Rate	U.S.	43.55	18.99	29.83	42.31	55.96	1003
	HK	42.60	17.01	31.73	42.80	53.54	4634

Table A4: Robustness Test for Valuations with Alternative Shock Timing (2021)

	Ln(IPO proceeds)		**Tobin's q at listing**		**Tobin's q at lising year end**	
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	0.009	0.223	5.273***	7.315***	1.420***	1.843***
	(0.200)	(0.251)	(0.963)	(0.973)	(0.177)	(0.180)
Post	-0.621***	-0.625***	-1.755	-1.745	1.662***	1.657***
	(0.077)	(0.076)	(1.916)	(1.856)	(0.156)	(0.150)
Treat×Post	-0.160	-0.142	2.677	2.239	-1.194***	-1.279***
	(0.104)	(0.102)	(1.690)	(1.685)	(0.239)	(0.238)
Ln(total assets)	0.628***	0.647***				
	(0.040)	(0.045)				
Public float (%)	0.000	0.006				
	(0.005)	(0.006)				
IMR		-0.252**		-4.084***		-0.841***
		(0.079)		(0.275)		(0.104)
Constant	6.061***	5.498***	1.019***	0.813**	2.115***	2.071***
	(0.786)	(0.951)	(0.321)	(0.304)	(0.059)	(0.054)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind×Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	1168	1168	1181	1181	1168	1168
R^2	0.680	0.682	0.302	0.331	0.275	0.298
Adj. R^2	0.631	0.633	0.197	0.230	0.165	0.191

Note: Standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table A5: Robustness Test for the Propensity to List in the U.S.

Year	N	U.S.	Expected U.S.	Actual percent	Expected percent	Act− exp	Avg. (act− exp)	t-value
2009	60	17	15	28.33	25.00	3.33		
2010	86	27	22	31.40	25.58	5.81		
2011	44	8	7	18.18	15.91	2.27		
2012	33	2	3	6.06	9.09	-3.03		
2013	55	7	8	12.73	14.55	-1.82		
2014	67	15	11	22.39	16.42	5.97		
2015	53	9	6	16.98	11.32	5.66		
2016	43	9	9	20.93	20.93	0.00		
2017	52	17	16	32.69	30.77	1.92		
2018	104	30	31	28.85	29.81	-0.96		
2019	115	28	28	24.35	24.35	0.00		
2020	118	31	31	26.27	26.27	0.00	1.60	
2021	102	34	39	33.33	38.24	-4.90		
2022	64	12	13	18.75	20.31	-1.56		
2023	84	25	37	29.76	44.05	-14.29		
2024	101	56	57	55.45	56.44	-0.99	-5.44	-3.09***

Note: "N" denotes the number of Chinese firms listed on U.S. main exchanges or the HKEX in a given year. "U.S." denotes the number listed on U.S. exchanges. "Expected U.S." is the predicted count based on the probit model in Table 17. "Actual percent" and "Expected percent" denote the actual and predicted shares of U.S. listings relative to combined U.S. and HK listings. The last three columns report the difference between actual and expected shares, the average difference across estimation and prediction periods, and the corresponding t-statistic.

Table A6: Confusion Matrices and Performance Metrics

Estimation Window: 2009-2020

		Model Prediction	
		HK	U.S.
Actual Outcome	HK	612	18
	U.S.	31	169
			830
Accuracy	94.10%		
Precision	90.37%		
Recall	84.50%		
F1	87.34%		

Prediction Window: 2021-2024

		Model Prediction	
		HK	U.S.
Actual Outcome	HK	197	27
	U.S.	7	119
			351
Accuracy	90.03%		
Precision	81.51%		
Recall	93.70%		
F1	87.18%		