

The Economic Benefits of Returned-Global Chinese IPOs

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ABSTRACT

On June 6, 2018, China has adopted a new policy that allows overseas-listed Chinese companies to launch secondary listings (hereafter, returned-global Chinese IPOs) in the domestic market. This study examines how the returned-global Chinese IPOs affect financial reporting quality, information environments, and IPO pricing in the domestic market. We find that these newly public companies in China exhibit lower discretionary accruals (and their components), lower stock price synchronicity, and lower first-day underpricing upon IPOs. Our difference-in-differences tests reveal that IFRS convergence in China mitigates overseas listing advantage of the returned-global firms. Overall, this study highlights the economic benefits of overseas listing of the returned-global Chinese IPOs and the impact of the change in financial accounting standards on the IPO market. Our evidence highlights the bright side of the recent regulatory change in China.

Keywords: Initial public offerings, globalization, earnings quality, stock price synchronicity, IPO underpricing, IFRS, an emerging market.

JEL classification: F6, L11, L15

1. Introduction

On June 6, 2018, the China Securities Regulatory Commission (hereafter, CSRC) announced the adoption of *The Administrative Measures for the Issuance and Trading of Depository Receipts (for Trial Implementation)*, which were effective immediately. The new regulation reflects the intension of Chinese government and regulator to encourage overseas-listed Chinese companies to launch secondary listings in the domestic market¹ through the issuance of China Depository Receipts (CDRs). The CSRC stated that this trial rule would support overseas-listed Chinese companies that comply with “national strategies” and have “mastered key technologies” and attract them to return to the country’s domestic market. This study is motivated by the recent listing policy change and the call for study on the impact of relisting (Reuters 2016) and aims to understand the unique phenomenon for returning-global Chinese IPOs and their unknown implications to the Chinese IPO market. As such, we examine their impacts on financial reporting quality, information environments, and IPO pricing in the domestic market. The convergence of IFRS in China since 2007 makes our research inquiry more interesting as it allows us to evaluate the incremental benefits of overseas listing of Chinese firms between periods before and after the change in financial accounting standards.

Historically, the Chinese government and regulators apply an annual “quota” system to restrict the number of companies going public in the domestic market and often suspend IPO issuance completely for a certain period. As a result, some Chinese companies chose to go overseas *first* before going public in the A-share market in mainland China. Prior studies find that Chinese companies that are politically connected are more likely to issue IPOs on foreign

¹ The domestic market is referring to as domestic A-share markets in mainland China. A-shares are shares issued by Chinese companies listed on the Shanghai and Shenzhen Stock Exchanges. A-shares are available only for domestic Chinese investors although foreign investors can invest in A-shares through the Qualified Foreign Institutional Investors (QFII).

stock exchanges (e.g., Hung et al. 2012). After being listed in overseas markets, some of them decide to return to the domestic market for the first time.

Prior studies on cross-border listing provide evidence that foreign firms gain benefits from listing in developed capital markets primarily due to stricter regulations to protect shareholders and extensive disclosure requirements (see, for example, Doidge et al. 2001; Lang et al. 2003). Unlike other domestic initial public offerings (IPOs), Chinese firms that have already listed in foreign markets could have less information asymmetry upon IPOs in the domestic market, because overseas listing is likely to improve the quality of their financial reporting and disclosure (Wu, 2014). However, politically connected or government-controlled Chinese companies are more likely to issue IPOs in foreign markets (Hung et al. 2012), which may have less incentives to make high quality of financial reporting to seek external capital. As such, it is not clear whether those information benefits resulting from overseas listings are expected for those Chinese companies. Utilizing a natural experimental setting of returned-global Chinese IPOs,² the first objective of our study is to investigate earnings quality, stock price synchronicity, and IPO underpricing upon their subsequent equity offerings in the domestic A-share market.³ This examination is important and timely to regulators and investors at the time of the implementation of the new regulation.

Prior studies find that mandatory adoption of IFRS improves the quality and the comparability of financial information in developed countries (e.g., Barth et al. 2008; Daske et

² We refer those overseas listed Chinese companies (i.e., global Chinese IPOs) that sequentially issue IPOs in the domestic A-share market in mainland China to “returned-global Chinese IPOs,” “returned-global IPOs,” “returned IPOs” or “home-listed IPOs” throughout the paper.

³ We measure earnings quality based on discretionary accruals and their components. Following prior studies (Morck et al. 2000; Piotroski and Roulstone 2004; Gul et al. 2010), we measure the stock price synchronicity for each firm from the logistic transformation of the R^2 statistics from market models. IPO underpricing is referred to the common phenomenon of substantially increased share prices of IPOs on the first day of trading. We discuss details in Section 3.

al. 2008; Byard et al. 2011; DeFond et al. 2011; Yip and Young 2012). The findings suggest that the benefits of IFRS adoption are likely to diminish in China where legal infrastructure is weak. In fact, existing studies show mixed evidence on financial reporting quality of Chinese firms after IFRS conversion in 2007 when the Chinese Accounting Standards adopt modifications of IFRS. For example, while He et al. (2012) find greater earnings management that might be attributed to the introduction of fair value accounting, Liu et al. (2011) find marginal improvement in earnings quality after the IFRS convergence in China. Chen et al. (2017) report that the Chinese stock market *ex ante* reacts favorably to the events leading to the IFRS convergence. Since those studies focus on firms that have been already listed in Chinese markets, their findings may not directly extend to the IPO setting.

Given the exogenous information shock resulting from the IFRS conversion, Chinese IPOs present a powerful research setting to test its consequences, because firms going public are susceptible to opaque information and pervasive earnings management (e.g., Aharony et al. 2000; Teoh et al. 1998a, 1998b). Thus, the second objective of our study is to examine whether the IFRS convergence in China has a significant impact on the quality of financial reporting, disclosure, and IPO pricing for firms going public in the A-share market. It is *ex ante* unclear whether the convergence provides economic benefits to Chinese IPOs, as investor protection is substantially weak and managers' incentives to supply high quality reporting are relatively low in China markets. Our difference-in-differences research design allows us to compare the economic consequences of the changes in financial accounting standards on Chinese IPO markets between domestic IPOs and the returned-global IPOs. Thus, the third objective of this study is to investigate whether the potential benefits of the IFRS convergence in China *mitigate* overseas listing advantage of the returned IPOs.

Our three research questions utilize all Chinese companies listed in A-share markets in the Shanghai and Shenzhen Stock Exchanges from 1992 to 2015. We classify the sample into two subgroups of IPOs: a treatment group of firms that have listed *first* in overseas markets and subsequently listed in A-share markets (i.e., returned-global IPOs) and a control group of firms that listed only in A-share markets and are not cross-listed (i.e., purely domestic IPOs). We then compare the quality of earnings and information and IPO initial returns between the two IPO samples. Since there is a concern that the choice of issuing subsequent equity offerings in the A-share market may not be a random decision, we address the endogeneity concern by employing the propensity score matching (PSM) approach and the instrumental variable approach. Our difference-in-differences research design compares IPO implications of the two subsamples between the pre-IFRS convergence period (prior to 2007) and the post-IFRS convergence period (after 2007) to examine the role of the IFRS conversion in affecting IPOs.

We find that the returned-global IPOs exhibit lower discretionary accruals and their components (an inverse measure of earning quality), lower stock price synchronicity (an inverse measure of information quality), and lower first-day underpricing compared to the PSM-domestic IPOs or all domestic IPOs.⁴ The evidence illustrates the spillover effects of improved earnings and information quality resulting from the overseas listing upon their relisting in the domestic market despite they are largely government-controlled firms. We also find that the IFRS convergence has significantly improved earnings quality and information environment in China's IPO markets, leading to lower IPO underpricing. These findings are consistent with Hong et al. (2014), who show the IPO underpricing decreases after mandatory IFRS adoption in

⁴ We observe that IPO firms in China experience significantly higher discretionary accruals, accounting receivables and inventories (see Table 4). These results are consistent with Aharony et al. (2000), Teoh et al. (1998a, 1998b) and Shen et al. (2014).

global markets and this relationship is more pronounced among firms with stronger implementation credibility.⁵ Our evidence indicates that the IFRS convergence can benefit firms that seek external financing despite a country's weak implementation credibility. As a result, the IFRS convergence *mitigates* overseas listing benefits on earnings quality, information environment, and IPO underpricing in the domestic market. By comparing the impacts of IFRS that reflects the spillover from overseas markets (from returned-global IPOs) to those in the A-share market (from purely domestic IPOs), our study reveals evidence on the positive contribution of IFRS in China's IPO markets. Our results are robust to endogeneity and the alternative measures of earnings quality, information quality, and IPO pricing.

This study contributes to two streams of literature. First, it adds to the literature on the economic consequences of cross-border listing and IPO underpricing. Prior studies identify *ex ante* information asymmetry among investors before IPOs as one of the causes of IPO underpricing (e.g., Rock 1986; Beatty and Ritter 1986; Ritter and Welch 2002) and the increased disclosure in the IPO prospectus as a mechanism to reduce IPO underpricing (Leone et al. 2007). Another strand of research identifies improved information environment as a benefit of overseas listing of companies from emerging markets (e.g., Doidge et al. 2001; Lang et al. 2003; Roosenboom and van Dijk 2009). We provide evidence that returned-global Chinese IPOs contribute to reduced IPO underpricing in the domestic IPO market, primarily because overseas markets impose higher financial reporting quality and disclosure standards than Chinese stock

⁵ Hong et al. (2014) use the rule of law index that represents the degree of confidence of a country's citizens in the quality of its law enforcement mechanisms. They use a sample of IPOs from 20 countries and compare the impact of the IFRS adoption on IPO pricing between the pre-IFRS adoption period (i.e., 2003-2004) and the post-IFRS adoption period (i.e., 2006-2007). Consequently, their sample excludes Chinese IPOs because China adopted the IFRS convergence in 2007. According to Kaufmann et al. (2007), the rule of law index of China is considerably lower than their sample country median of 1.6, indicating China's weak implementation credibility. Since their study focuses on the impact of IFRS adoption on IPO pricing, our study extends their work to the consequences of IFRS convergence on financial reporting quality and information environment of Chinese IPOs.

markets. Our results echo the findings of lower stock price synchronicity in China for firms with foreign investors than firms with only domestic investors (Gul et al. 2010). Moreover, our study complements Hung et al. (2012) by providing evidence on the economic benefits of returned Chinese IPOs. Our findings suggest that although government-controlled firms may have less incentive to supply high quality reporting, they benefit from overseas listing.

Second, our study contributes to the body of literature on IFRS adoption (or convergence). Prior studies show that mandatory adoption of IFRS improves financial reporting quality in developed countries (e.g., Barth et al. 2008; Daske et al. 2008; DeFond et al. 2011). They argue that IFRS adoption in less developed markets may not give incremental benefits to investors due to the increased discretion under IFRS (such as fair value accounting) and managers' opportunistic reporting incentives. Our study demonstrates the positive role of the IFRS convergence in improving financial information environments during the IPO process in China. Unlike prior studies that focus on Chinese companies that are already publicly listed, our analyses using two distinctive samples of returned-global IPOs and domestic IPOs present a powerful setting to identify the benefit of the IFRS convergence. Our study complements cross-country studies (e.g., Chen et al. 2013; Hong et al. 2014) by documenting that the IFRS convergence mitigates the overseas listing benefits of Chinese firms. Taken altogether, our evidence provides timely inputs to Chinese regulators and global investors regarding the newly implemented policy of secondary listings and their impact on the local market.

The remainder of the paper is organized as follows. Section 2 provides institutional background and develops testable hypotheses. Section 3 specifies our research design used for hypothesis testing. Section 4 describes the sample and data. Section 5 provides main empirical results and section 6 shows robustness tests. Section 7 concludes the paper.

2. Institutional background and hypothesis development

2.1. Institutional background

The Chinese government and its regulator, the CSRC, often restrict the number of companies going public in the domestic A-share market. Consequently, the waiting time is typically long for Chinese private companies pursuing IPOs. Due to the regulatory constraint, some Chinese private companies choose to go overseas first before being listed in the domestic market. Under the current regulatory framework, Chinese companies can go overseas markets in two ways, namely, direct overseas listing and indirect overseas listing (Liu 2012). Direct overseas listing refers to overseas listing by companies incorporated in mainland China (for example, H, N, L, or S share that is listed in Hong Kong, New York, London or Singapore Stock Exchange, respectively).⁶ According to *The Notice on Relevant Issues concerning Enterprises' Application for Overseas Listing* (CSRC 1999), companies that satisfy certain substantive conditions can apply to (and have to be approved by) the CSRC for overseas listing as follows: (1) net assets must be no less than RMB 400 million, (2) post-tax profits must be no less than RMB 60 million, and (3) proposed proceeds to be raised must be no less than USD 50 million. Examples of direct overseas listing include Tsingtao Brewery Co. going public in Hong Kong in July 1993. Indirect overseas listing refers to overseas listing by companies incorporated outside mainland China after establishing the red-chip framework, i.e., acquiring one or more domestic enterprises in Chinese mainland. Examples of indirect overseas listing include China Mobile

⁶ These overseas markets have stronger disclosure requirements and stricter regulations and enforcements to protect stakeholders than emerging markets like mainland China. Those markets also have better market intermediaries like financial analysts and institutional investors that serve as monitoring institutions.

going public in Hong Kong in October 1997, and Alibaba Group going public in the U.S. in September 2014.

Upon the CSRC's approval, Chinese companies that are directly listed overseas can subsequently issue equity offerings in the domestic A-share market, while firms that are indirectly listed overseas are more difficult to do so due to complicated technical and legal issues. In 2007, the CSRC issued *Pilot Program of IPO of Chinese overseas listed Enterprises on domestic exchanges (Draft)*. Under this draft, only red-chip companies that are listed on Hong Kong Stock Exchange for at least one year can apply to the CSRC for issuing equity offerings in the A-share market and they have to meet additional requirements, including (1) market value of shares are not less than HKD 20 billion, (2) net income is not less than HKD 2 billion for the most recent three years, and (3) at least 50% of net income is generated from businesses in mainland China.

Aiming at attracting more overseas-listed Chinese companies to return, the CSRC issued *the Several Opinions on Launching the Pilot Program of Domestically Issuing Stocks or Depositary Receipts by Innovative Enterprises ("The Opinions")*. The document was approved and forwarded by the General Office of the State Council on 30 March 2018. Under this pilot program, both large-sized red-chip enterprises listed overseas⁷ and innovative enterprises (either red-chip or domestically registered) that have not yet been listed overseas⁸ in certain industries can apply for listing domestically by issuing stocks or depositary receipts at their options. *The Opinions* recognizes the arrangement of dual share class of CDRs and therefore lifts the barrier of "one-share, one-vote" for enterprises seeking to list in the Chinese securities market (Ernst &

⁷ The market capitalization is not less than RMB 200 billion.

⁸ The most recent year's operating income is not less than RMB 3 billion and the valuation is not less than RMB 20 billion or the operating income grows rapidly, having relatively advantaged position in the same industry competition, with independent research and development, and international leading technologies.

Young, 2018). Subsequently, on June 6, 2018, the CSRC announced the adoption of *The Administrative Measures for the Issuance and Trading of Depository Receipts (for Trial Implementation)*, which were effective immediately, further specifying standards for enterprises applying for issuing CDRs. On June 11, 2018, Xiaomi Corporation, being the first enterprise, submitted the document for applying for issuing CDRs.⁹

2.2. Hypothesis development

The first objective of our study is to compare the differential impacts of two types of IPOs on earnings quality, information quality and IPO underpricing: (1) overseas listed Chinese companies relisting in the domestic A-share market (i.e., returned-global IPOs) and (2) purely domestic A-share counterparts, which are not cross-listed outside mainland China. Our study focuses on the economic benefits of *ex post* overseas listing experience for returned-global Chinese IPOs in the domestic A-share market as to higher reporting quality, improved information, and lower IPO underpricing in their subsequent equity offerings valuation.

A wide spectrum of studies in the literature documents poor earnings quality in the IPO year, as measured by significantly positive discretionary accruals (e.g., Teoh et al. 1998a, 1998b; DuCharme et al. 2001; Fan 2007; Kouwenberg and Thontirawong, 2016). In a similar vein, Aharony et al. (2000) find that Chinese IPOs are more likely to manage revenues and inventories.¹⁰ Given the general understanding that overseas listed Chinese companies are subject to greater scrutiny from regulators, external auditors, and financial analysts while listing and trading in overseas stock exchanges, we might expect that they exhibit higher earnings quality than purely domestic A-share counterparts in the IPO year.

⁹ The enterprise later on withdrew the CDR application on June 19, 2018.

¹⁰ Another strand of studies reveals that greater scrutiny from regulators and external auditors during the IPO process may help improve earnings quality in the IPO year (e.g., Ball and Shivakumar 2008; Armstrong et al. 2016).

Firms' information quality may improve for those overseas listed Chinese firms that have returned to A-share market. The overseas markets in developed countries including Hong Kong Stock Exchange have stricter regulatory environment and disclosure requirements than China's emerging market. As such, Chinese companies that had listed in overseas markets may supply more firm-specific information. Following previous studies (Morck et al. 2000; Gul et al. 2010), we rely on stock price synchronicity to measure information quality in China. If the information environment improves for a firm, more firm-specific information shall be revealed to the market and less stock price synchronicity be observed. Gul et al. (2010) find that in A-share market, firms with foreign B- or H-share, and the firms with Big 4 auditors have lower stock price synchronicity than firms with only A-share offerings and domestic auditors. In the similar vein, we expect that firms with returned IPOs from overseas have lower stock price synchronicity than firms with purely domestic IPOs. However, in contrast to improved financial reporting environments, one might argue that since most global-Chinese IPOs are politically connected or government-controlled firms (Hung et al. 2012), they may not have strong incentives to make high quality financial reporting to seek external capital. From the perspective of Chinese investors, evidence shows that Chinese investors are speculative and thus may not be able to see through presumably improved quality of financial reporting provided by the returned-global IPOs.

The IPO literature documents evidence that, on average, IPOs experience significant first-day underpricing in virtually all markets around the world (Loughran et al. 1994), and the magnitude is extraordinarily larger in the Chinese market (Chan et al. 2004; Chen et al. 2004; Zhou and Zhou, 2010). The central theory to explain IPO underpricing is information asymmetry (Rock 1986; Ritter and Welch 2002). Literature suggests that the improvements of information

environment for cross-listed companies are more profound among firms originating from countries with greater information asymmetry, i.e., countries with weaker legal tradition and rule of law, such as China (e.g., Doidge et al. 2001; Lang et al. 2003). If *ex-ante* information asymmetry among investors is mitigated, the IPO underpricing can be reduced as investors better evaluate IPO share value. Since the global Chinese IPOs have disclosed financial information in overseas markets, Chinese investors face less information asymmetry upon their IPOs in the domestic market. To the extent that overseas listing spills over the improvements in earnings quality and information quality to the domestic market, we expect that the returned-global Chinese IPOs have less IPO underpricing than purely domestic IPOs. Put together, we predict that the returned-global Chinese IPOs are associated with higher earnings quality, improved information quality, and lower IPO underpricing than purely domestic IPOs. Therefore, we state our first hypothesis in the alternative form below:

H1. *Ceteris paribus*, Chinese overseas listed companies that subsequently issue equity offerings in the domestic A-share market are associated with higher earnings quality, lower stock price synchronicity and lower IPO underpricing than purely domestic IPOs.

The second objective of this study is to examine the implications of the IFRS convergence for domestic IPOs in the A-share market. Although IFRS is not mandatorily adopted in China, the Ministry of Finance of the People's Republic of China issued a new set of *Accounting Standards for Business Enterprises* (ASBEs) on February 15, 2006, which are substantially converged with IFRS. The new set of ASBEs took into effect on January 1, 2007 and all companies listed in China must apply ASBEs for the preparation of their financial statements.

Prior studies find that the benefits of mandatory IFRS adoption for the quality of earnings and disclosure are largely confined to countries with strong investor protection and legal enforcement, and extensive disclosure requirements (e.g., Ewert and Wagenhofer 2005; Barth et

al. 2008; Daske et al. 2008; Byard et al. 2011; DeFond et al. 2011). Specifically, DeFond et al. (2015) find that IFRS adoption improves reporting transparency and comparability. Li and Yang (2016) find a significant increase in voluntary disclosure such as management earnings forecast after IFRS adoption. Beuselinck et al. (2010) find that stock price synchronicity decreases after IFRS adoption. Cascino and Gassen (2015) reveal that the reporting comparability improves after IFRS adoption only in countries with high compliance incentives and enforcement.

These findings suggest that the benefits of IFRS adoption are likely weaker in China where legal infrastructure is weak. Consistent with this view, existing studies document mixed evidence on financial reporting quality in China after the IFRS conversion. While He et al. (2012) find greater earnings management under the IFRS convergence, Liu et al. (2011) detect marginal improvement in earnings quality after 2007. Chen et al. (2017) document that investors *ex ante* react favorably to the events leading to the IFRS convergence in China and the effect is more pronounced among firms with greater dependence on external capital. Their finding suggests that the IFRS convergence can be more critical to firms going public for raising external capital because they are susceptible to information asymmetry. Armstrong et al. (2010) find that the benefit of IFRS adoption is more pronounced in countries with greater information asymmetry. Recent studies provide evidence that the IPO underpricing decreases after mandatory IFRS adoption in global markets, especially where implementation credibility is stronger (Hong et al. 2014; Chen et al. 2015). Although literature on IFRS documents mixed evidence in less-developed capital markets like China, we expect that the IFRS convergence in China improves the quality of financial reporting and information environments during the IPO process, which in turn reduces IPO underpricing, because of their strong incentives to raise external capital. The preceding discussion leads us to state our second hypothesis in the alternative form as follows:

H2. *Ceteris paribus*, firms that go public after IFRS convergence in the A-share market are associated with higher earnings quality, lower stock price synchronicity and lower IPO underpricing than firms going public before IFRS convergence.

The last objective of our study is to examine the interaction effect between IFRS convergence and the returning Chinese IPO firms from overseas markets to the A-share market. After the IFRS convergence, the A-share market is likely to benefit improvements in earnings quality and information environment; and thus the spillover effects of those returning global IPO firms are diminished. Comparing the implications of the IFRS convergence for IPOs from the A-share market and the returning IPOs from developed markets, our difference-in-differences research design allows us to make a direct comparison of the IFRS effect from two different markets in the same local A-share market. We expect that the listing benefits of returned IPOs from overseas markets become smaller after the IFRS convergence in China. Therefore, we state our third hypothesis in the alternative form below:

H3. *Ceteris paribus*, returned-global Chinese IPO firms experience less increase in earnings quality, less decrease in stock price synchronicity and less decrease in IPO underpricing after the IFRS convergence in China.

3. Research design

3.1. Test of earnings quality

Drawing upon prior literature, we use discretionary accruals to measure earnings quality and estimate discretionary accruals from the modified cross-sectional Jones model (Jones, 1991) as described in Dechow et al. (1995).¹¹ The model can be specified as follows:

$$\frac{TACC}{TA_{t-1,t}} = \alpha_0 \left(\frac{1}{TA_{t-1,t}} \right) + \alpha_1 \left(\frac{\Delta SALES}{TA_{t-1,t}} \right) + \alpha_2 \left(\frac{PPE}{TA_{t-1,t}} \right) + \varepsilon \quad (1)$$

¹¹ Although there are alternative metrics of earnings quality, e.g., timeliness, conservatism and value relevance, earnings management (measured by the magnitude of discretionary accruals) is the most popular metric in the setting of initial public offerings in the literature.

where $TACC$ represents total accruals, defined as earnings before extraordinary items and discontinued operations and operating cash flows (from continuing operations). TA represents total assets, $\Delta SALES$ is the change in revenues from the preceding year, and PPE is the gross value of property, plant and equipment. The coefficient estimates from Equation (2) are used to estimate the firm-specific normal accruals ($NACC$) and our measure of discretionary accruals is the difference between total accruals and the fitted normal accruals, defined as $DACC = TACC - NACC$.

Aharony et al. (2000) provide evidence that Chinese IPOs are more likely to manage revenues and inventories. We thus estimate components of discretionary accruals, i.e., discretionary change of accounts receivables and discretionary change of inventory based on a similar estimation procedure as discretionary accruals. The models can be specified as follows:

$$\frac{\Delta AR}{TA_{t-1,t}} = \alpha_0 \left(\frac{1}{TA_{t-1,t}} \right) + \alpha_1 \left(\frac{\Delta SALES}{TA_{t-1,t}} \right) + \varepsilon \quad (2)$$

$$\frac{\Delta INV}{TA_{t-1,t}} = \alpha_0 \left(\frac{1}{TA_{t-1,t}} \right) + \alpha_1 \left(\frac{\Delta SALES}{TA_{t-1,t}} \right) + \varepsilon \quad (3)$$

where ΔAR represents the change of accounts receivables and ΔINV is the change of inventories.

The coefficient estimates from Equations (3) and (4) are used to estimate firm-specific normal change of accounts receivables ($N\Delta AR$) and normal change of inventories ($N\Delta INV$). Our measures of discretionary change of accounts receivables ($D\Delta AR$) and discretionary change of inventories ($D\Delta INV$) are the difference between the change of accounts receivables and the fitted normal change of accounts receivables, defined as $D\Delta AR = \Delta AR - N\Delta AR$, and the difference between the change of inventories and the fitted normal change of inventories, defined as $D\Delta INV = \Delta INV - N\Delta INV$.

Discretionary accruals and its components models are likely to produce noisy estimates in the IPO setting if the non-random sample characteristics of IPO firms are not properly addressed, which could lead to the likelihood of improper inferences. To mitigate this concern, we adjust discretionary accruals measures based on a performance-matched approach, as implemented in Kothari et al. (2005). In specific, we first match each IPO firm in our sample with a non-IPO firm from the same industry (as defined by CSRC) and fiscal year with the closest return on assets (*ROA*). Then, we estimate discretionary accruals measures for both the IPO firm-year observation and its matched counterpart using the discretionary accruals models. The performance-matched discretionary accruals measures (*PM_DACC*, *PM_DΔAR*, *PM_DΔINV*) are the differences between the discretionary accrual measures of the two matched firms.¹²

To test earnings quality, we first examine the magnitudes of discretionary accruals measures over five years surrounding the IPO. We then implement a multiple regression model (5) below for performance-matched discretionary accruals measures in the IPO year (i.e., Year 0). The model controls for major factors that are known to affect earnings management activities in prior studies:

$$\begin{aligned}
 & PM_DACC / PM_D\Delta AR / PM_D\Delta INV \\
 & = \alpha_0 + \alpha_1 H_Listing + \alpha_2 IFRS + \alpha_3 H_Listing \times IFRS + \alpha_4 ROA_1 + \alpha_5 Size \\
 & + \alpha_6 L(Age) + \alpha_7 Growth + \alpha_8 LEV + \alpha_9 StateShare + \text{Industry and Year fixed effects} + \varepsilon \quad (4)
 \end{aligned}$$

H_listing is an indicator variable that equals 1 if the observation is a returned-global IPO to list in the home market in China, and 0 otherwise. *IFRS* is an indicator variable that equals 1 if

¹² While performance-matched approach can reduce the noise of estimating discretionary accruals measures from accruals models in the IPO setting, we note different interpretation of the results: if the estimated performance-matched discretionary accruals measures are not different from zero, the implication is not that earnings are not managed, but rather that earnings are not managed any more significantly than in publicly traded firms with similar earnings performance.

the listing year is equal to or after 2007 (year of IFRS convergence), and 0 otherwise.

$H_Listing \times IFRS$ is an interaction term. We include ROA_I , as firms' current year earnings management activities can be related to firms' previous year earnings performance. We include size, age and growth following Roychowdhury (2006), who suggests that firm-specific characteristics can potentially explain significant variations in earnings management. We also include leverage to control for the leverage-related incentives for earnings management (e.g., Teoh et al. 1998a). Finally, we control for state ownership ($StateShare$). Following prior studies, all continuous explanatory variables are scaled by quintile ranks. If overseas listing and IFRS convergence can improve earnings quality of IPO firms, we expect the coefficients of α_1 and α_2 are negative as the magnitude of discretionary accruals is reduced. The coefficient α_3 captures the interaction effect of overseas listing and IFRS convergence and is expected to be positive, as the reduction of the magnitude of discretionary accruals is mitigated after the IFRS convergence in China. The variable definitions are given in Appendix 1.

3.2. *Test of information quality*

In the tests of information quality, we use four market models to construct two measures of stock price synchronicity ($SYNCH1$ and $SYNCH2$), following Gul et al. (2010). The first measure ($SYNCH1$) is derived from the market model in Equation (5a) below that regresses daily stock return on A-share market return, industry return, and the lagged market and industry returns in the 3-year trading period after IPO date.¹³ The second measure ($SYNCH2$) is derived from three market models in the 3-year trading period after the IPO. For firms with only domestic A-share, the market model is to regress daily stock return on A-share market return and world market

¹³ Following the study of Hung et al. (2012), we measure post-IPO performances in three-year period. The period covers 750 (250 x 3) trading dates after the IPO date.

return (Equation 5b). For firms with both A and B shares, the market model is to regress daily stock return on A-share market return, B-share market return and world market return (Equation 5c). For firms with both A and H shares, the market model is to regress daily stock return on A-share market return, H-share market return and world market return (Equation 5d).¹⁴

$$Ret_t = \alpha + \alpha_1 MktRet_t + \alpha_2 MktRet_{t-1} + \alpha_3 IndRet_t + \alpha_4 IndRet_{t-1} + \varepsilon \quad (5a)$$

$$Ret_t = \alpha + \alpha_1 MktRet_t + \alpha_2 WrdRet_t + \varepsilon \quad (5b)$$

$$Ret_t = \alpha + \alpha_1 MktRet_t + \alpha_2 MktRet_B_t + \alpha_3 WrdRet_t + \varepsilon \quad (5c)$$

$$Ret_t = \alpha + \alpha_1 MktRet_t + \alpha_2 MktRet_H_t + \alpha_3 WrdRet_t + \varepsilon \quad (5d)$$

The dependent variable in the market model *Ret* is the daily stock return for each firm in A-share markets. The market returns for A-share (*MktRet*) and B-share (*MktRet_B*) are value-weighted returns of all stocks in A-share and B-share markets. The market returns of H-share (*MktRet_H*) and world markets (*WrdRet*) are calculated from Hang Seng index and MSCI world index. The industry return (*IndRet*) is value-weighted portfolio return of firms in each industry, based on 15-industry classifications by CSRC in China. We estimate the R^2 for each firm from the market models. Consistent with prior studies (Morck et al. 2000; Piotroski and Roulstone 2004; Gul et al. 2010), the stock price synchronicity (*SYNCH1* or *SYNCH2*) for each firm is derived from the logistic transformation of the R^2 statistics from market models: $SYNCH = \log [R^2 / (1 - R^2)]$. To test information quality, we implement the following regression model (6):

$$\begin{aligned} SYNCH = & \alpha_0 + \alpha_1 H_Listing + \alpha_2 IFRS + \alpha_3 H_Listing \times IFRS + \alpha_4 Volume + \alpha_5 Size_Post \\ & + \alpha_6 LEV_Post + \alpha_7 MTB + \alpha_8 StateShare + \alpha_9 Retention + \alpha_{10} Tophold + \\ & \alpha_{11} Tophold^2 + \alpha_{12} Topgov + \alpha_{13} Big4 + \text{Industry and Year fixed effects} + \varepsilon \end{aligned} \quad (6)$$

¹⁴ The market models are similar to Equation (1), (1a), (1b) and (1c) in Gul et al. (2010). Our sensitivity tests show that our results are not sensitive to exclusion of A-B and A-H share firms in our control sample.

Following Gul et al. (2010), we include several control variables in the regression model: trading volume turnover (*Volume*), firm size (*Size_Post*) at the end of the first fiscal year after the IPO, leverage ratio (*LEV_Post*) after the IPO, market to book value (*MTB*), state ownership (*StateShare*), and a dummy variable if the largest shareholder is the government related entities (*Topgov*). We also include the percentage of share held by the largest shareholder (*Tophold*) after IPO and the square of top holding ratio (*Tophold*²) to capture the concave relation between synchronicity and ownership concentration. We add a dummy variable if the auditor for the firm in the IPO year is from an international Big 4 audit firm (*Big4*) as Big 4 auditors play an important role in distributing firm-specific information. We include the retention ratio (*Retention*), which is the ownership retained by original investors (Tian 2011). If returned-global Chinese IPOs and the IFRS convergence can improve information environment in the A-share market, it is expected that the coefficients of α_1 and α_2 are negative as the stock price co-movement is reduced when the level of firm-specific information increases in the market. We refer it to having higher information quality. The coefficient α_3 captures the interaction effect of the returned IPO and the IFRS convergence, which is expected to be positive. The decrease of stock price synchronicity for the returned IPOs is mitigated after the IFRS convergence because the whole information environment in the A-share market is expected to be improved.

3.3. Test of IPO underpricing

In the test of IPO underpricing, we use two variables to measure IPO underpricing (Chan et al. 2004; Wu, 2014): the raw return (*RawRet*) calculated by the closing price on IPO date minus the initial offering price scaled by the initial offering price, and the market adjusted return (*MktAdjRet*) through the raw first-day return minus the market return on the IPO date. We

estimate the following regression model (7) to test the impacts of the returned IPO and the IFRS convergence on IPO underpricing in the A-share market:

$$\begin{aligned}
 RawRet/MktAdjRet = & \alpha_0 + \alpha_1 H_Listing + \alpha_2 IFRS + \alpha_3 H_Listing \times IFRS + \alpha_4 Size + \alpha_5 L(Age) \\
 & + \alpha_6 Allocation + \alpha_7 LAG_D + \alpha_8 StateShare + \alpha_9 Retention + \alpha_{10} Revision + \\
 & \alpha_{11} AvgRet + \text{Industry and Year fixed effects} + \varepsilon
 \end{aligned} \tag{7}$$

Following prior studies (Chan et al. 2004; Chen et al. 2004; Tian 2011; Wu, 2014), we control for company age ($L(Age)$), the days between offering date and listing date (LAG_D), the retention ratio ($Retention$) and state ownership ($StateShare$), as they are likely to affect the first-day return in the A-share market. We also include firm size ($Size$) before IPO, the allocation rate to subscribers ($Allocation$), the price revision ($Revision$) and the average initial return on the recent IPOs in the past year ($AvgRet$) in the regression model (Loughran and Ritter 1995; Amihud et al. 2003; Lowry and Schwert, 2004). Similar to Equation (5) and (7), we expect that the coefficients of the variables of interest, $H_Listing$ and $IFRS$, are negative as overseas listing and the IFRS convergence are likely to reduce information asymmetry, and thus the IPO underpricing. The coefficient of interaction term between $H_Listing$ and $IFRS$ is expected to be positive, as the overall information environment is improved after the IFRS convergence. The detailed variable definitions in all equations are contained in Appendix 1.

3.4. Propensity score matching (PSM) approach

The choice of issuing subsequent equity offerings in the domestic A-share market may not be random decisions by Chinese overseas listed companies. Hence one concern in the regression models above is that the variable $H_Listing$ might be endogenous, which causes biased estimates of the impacts of returned IPOs on our dependent variables. To address the endogeneity concern,

we employ two methods: propensity score matching (PSM) approach and instrumental variable approach (see details in the robustness test).

We follow the propensity score matching method by Armstrong et al. (2016) that use different dimensions of IPO firms to match our treatment sample observations (i.e., returned-global IPOs) with the control sample observations (purely domestic IPOs), including IPO year, industry, firm size, age and growth. First, we estimate the probability of returned IPOs from a logistic regression function of pre-IPO firm size, age and growth.¹⁵ A predicted probability is derived as a propensity score. Second, we match each returned IPO to purely domestic IPOs in the same year and the same industry (as defined by CSRC). Third, one purely domestic IPO is selected per a returned IPO by minimizing the squared values of the differences of propensity scores in year-industry matched returned IPOs and purely domestic IPOs.

4. Sample and data

Our sample includes all Chinese companies listed in the domestic A-share market from 1992 to 2015. We classify the sample into two subgroups: firms listed only in A-share market on the IPO dates (i.e., purely-domestic IPOs) and those that have listed in overseas markets first and return to list in the A-share market sequentially (i.e., returned IPOs).¹⁶ To obtain the list of firms that went overseas and sequentially returned to the A-share market, we firstly take the complete list of directly listed Chinese companies on overseas stock exchanges from CSRC website because only those directly-overseas-listed companies that were approved by CSRC can return to the domestic A-share market for listing. Up to December 2015, there are a total of 190 Chinese

¹⁵ When we include *ROA* to control for profitability in the logit regression, our main results with PSM-matched sample are qualitatively similar.

¹⁶ One such example is Tsingtao Brewery Co. The company became the first overseas listed Chinese company with its IPO in Hong Kong in July 1993. One month later, the company issued IPO in the domestic A-share market.

companies that were directly listed on overseas markets, including Hong Kong, London, New York and Singapore. Among these companies, 174 were listed in Hong Kong. Others include 1 company listed in Singapore, 4 companies dually listed in Hong Kong and London, 10 companies dually listed in Hong Kong and New York, and 1 company listed concurrently in Hong Kong, London and New York. Among those 174 firms listed in Hong Kong, 63 returned to the A-share market and successfully completed the IPO process. For testing H1, we include only the 63 returned IPOs as the treatment sample and all other remaining Chinese firms in Hong Kong as the control sample.¹⁷

Table 1 gives a summary of the total number of firms listed in A-share market and the number of firms that return to A-share market after overseas listing, by year and industry. Panel A shows that the number of IPOs varies with year in the A-share market. In 2010 and 2011, there are 349 and 282 IPOs, the largest IPOs in our sample period of 1992 to 2015; and while in 2013, there are only 2 IPOs because A-share equity issuance was officially suspended by CSRC in 2013. In the sample period, there are some returned IPOs each year except for years 1992, 2000, 2004, 2013, 2014 and 2015. It is interesting to note that 12 overseas listing companies return to the A-share market in 2007 when the IFRS convergence was made in China. It would make relisting in the domestic A-share market less costly under the same (or similar) IFRS financial reporting system. However, in the A-share IPO boom periods of 2010 and 2011, there are only 2 and 4 returned IPOs.

¹⁷ Wu (2014) also constructs a sample of returned IPOs from the Chinese listed firms in Hong Kong (A-H cross listed firms) and Chinese ADRs from 1990 to 2007. The sample of returned IPOs is larger in this study. Wu (2014) only explores the impacts of returned listings on IPO underpricing in A-share market. Our paper investigates earnings quality and information quality of the returned IPOs. Also, we examine the benefits of IFRS convergences in A-share market and the impacts on IPOs.

Panel B of Table 1 provides statistics on the duration between overseas IPO and subsequent listing on A-share market for our sample. It indicates that 47.6% of our sample have waited between 1 and 5 years and 28.6% have waited more than 5 years, suggesting the difficulty to obtain IPO approval from regulatory bodies in China. Panel C shows the popularity of listed firms (and also returned IPOs) is in the manufacturing industry. There are no returned IPOs in six industries, out of fifteen industries.

[Insert Table 1 here]

We obtain necessary financial statements, firm characteristics and stock return data from the China Security Market and Accounting Research (CSMAR) database. Testing our hypotheses requires the data in both pre-IPO and post-IPO periods. Some pre-IPO financial statement data are missing in the database, especially prior to 2002. We hand collect those missing data from company website, annual reports and other sources. All financial statement variables are winsorized at 1% and 99% level to avoid the impacts of outliers.

5. Empirical results

5.1. Descriptive statistics

Table 2 compares key regression variables between returned-Global IPOs and purely-domestic IPOs and between returned IPOs and PSM-domestic IPOs respectively. Panel A presents the mean and median values of earnings quality variables, stock price synchronicity variables, IPO underpricing variables, and selected control variables. Panel B presents the univariate analysis on mean and median value differences between the treatment and control samples.

Panel B shows that the returned IPOs are associated with significantly lower values of $DACC$, $D\Delta AR$ and $D\Delta INV$ relative to the purely-domestic IPOs, providing some evidence of better earnings quality for the former. Regarding the stock price synchronicity, the mean and median values of R^2 and $SYNCH1$ and $SYNCH2$ for the returned IPOs are significantly higher than those for the purely-domestic IPOs. However, the means and medians of first-day raw return ($RawRet$) and market adjusted return ($MktAdjRet$) are not significantly different between the two groups. The PSM-domestic technique leads to similar results on $DACC$, but less significant or insignificant differences on $D\Delta AR$ and $D\Delta INV$. In general, there is little evidence on the significant differences for the stock price synchronicity and the IPO pricing between the returned IPOs and the PSM-domestic IPOs. However, we should be cautious about interpreting the insignificant results without controlling for firm-specific variables.

In terms of control variables, the returned IPOs have significantly larger size (pre-IPO total assets) than firms with the purely-domestic IPOs or the PSM-domestic IPOs. These firms also have a longer company history than the PSM-domestic IPOs and larger chance to hire auditors from international Big 4 audit firms than the PSM-domestic IPOs. The returned IPOs have allocation rate, state ownership, top government holding, listing time lag, initial price revision, average initial return in the market prior to IPO and leverage ratios similar to those of the PSM-domestic IPOs. Overall, Panel B suggests that while some of IPO firm characteristics between the returned IPOs and the PSM-domestic IPOs are well controlled, some significant differences still remain, which need to be controlled in the multivariate analyses in the next section.

[Insert Table 2 here]

5.2. Results of earnings quality

Table 3 presents statistics on the magnitude of discretionary accruals measures for the period from Year -2 to Year 2 around the IPO to provide a time-series trend of earnings quality.¹⁸ Our analysis concentrates on the IPO year (Year 0), because this is the IPO year that discretionary accruals measures are widely found to be significantly positive in the literature. Wilcoxon test is used to examine whether medians of discretionary accruals measures are different from zero.

Panel A presents the median values of earnings quality metrics for three subgroups of returned-global IPOs, domestic IPOs and PSM-domestic IPOs. We find significantly different patterns between subgroups of returned-global IPOs and domestic IPOs. While the domestic IPOs experience significant income-increasing accruals management, the returned-global IPOs provide no evidence of accruals manipulation for Year 0. We also find PSM-domestic IPOs display significantly positive value of *DACC* for Year 0. Panel B and Panel C of Table 3 present the results of subsamples by pre- and post-IFRS convergence periods. They are similar to those reported in Panel A.¹⁹

[Insert Table 3 here]

Next, we conduct multivariate analysis using Model (4) to examine the consequences of overseas listing (*H_Listing*), IFRS convergence (*IFRS*) and the interaction of overseas listing and IFRS convergence (*H_Listing*×*IFRS*) on performance-matched discretionary accruals and their component measures in the year of IPO. Table 4 reports regression results. Columns (1) – (3) show the results for the returned IPOs and the full sample of domestic IPOs. In Column (1) where *PM_DACC* is the dependent variable, the coefficient of *H_Listing* is significantly negative

¹⁸ The IPO sample period in Table 2 truncates to Year 2013 for retaining Year +2 data.

¹⁹ When we use performance-matched measures, results are qualitatively similar.

($P < 0.05$), the coefficient of *IFRS* is significantly negative ($P < 0.05$) and the coefficient of *H_Listing*IFRS* is significantly positive ($P < 0.10$). The results are consistent with our hypotheses and suggest that both overseas listing and IFRS convergence help improve earnings quality and the improvement for the returned IPOs is attenuated after the IFRS convergence. We find similar results on *H_Listing* and *IFRS* in Column (2) where *PM_DΔAR* is the dependent variable. These results are consistent with prior studies that Chinese IPOs are more likely to aggressively report revenues to manipulate earnings (Aharony et al. 2000). In Column (3) where *PM_DΔINV* is the dependent variable, only the coefficient of *H_Listing* is significant.

Columns (4) – (6) show the results for the returned IPO relative to the PSM-domestic IPOs. In Column (4) where *DACC* is the dependent variable, the coefficient of *H_Listing* is significantly negative ($P < 0.10$) and the coefficient of *IFRS* is significantly negative ($P < 0.05$). The coefficient of *H_Listing×IFRS* is positive but statistically insignificant. Column (5) presents the regression results where *DΔAR* is the dependent variable. It shows that the coefficients of *H_Listing* and *IFRS* are significantly negative both at the 1% level, while the coefficient of *H_Listing×IFRS* is significantly positive ($P < 0.10$). Column (6) presents similar results for *DΔINV*. The results with the PSM-domestic sample are similar to those with the full domestic sample.²⁰ They are consistent with our hypotheses that both overseas listing and the IFRS convergence improve earnings quality and the global listing benefit for the returned IPOs is diminished after the IFRS convergence in China. The coefficients of control variables are in general consistent with prior studies. In particular, sales growth and firm size are negatively

²⁰ The regression results for PSM-domestic sample are statistically significant for *DΔINV* compared to those for the full sample, suggesting that IPO firm-specific characteristics are important factors in affecting managers' incentives to manipulate earnings through inventory manipulation.

related to discretionary accruals and discretionary changes of accounts receivables and inventories.

[Insert Table 4 here]

5.3. Results of information quality

Table 5 presents the results of information quality tests from Model (6). It provides results for two alternative measures of stock price synchronicity from different market models: *SYNCH1* and *SYNCH2* (as discussed in Section 3.2). Columns (1) and (3) report results from the full sample and Columns (2) and (4) report results from the PSM sample. In the first two columns when *SYNCH1* is the dependent variable, the coefficients of *H_Listing* are negative and significant at the 1% and 10% levels, respectively, indicating that the returned IPOs have more firm-specific information and less stock price synchronicity than the purely-domestic IPOs or the PSM-domestic IPOs in the 3-year period after the IPO.

The coefficients of *IFRS* are negative and significant at the 1% level in both columns. The results are similar when *SYNCH2* is the dependent variable in Columns (3) and (4). The findings suggest that the convergence of IFRS can effectively improve the information environment of firms going public, when information asymmetry is serious and higher quality information is more critical for IPO pricing, even in countries with weak legal and accounting regulations like China. The improved information environments provide more firm-specific information, which leads to less stock price synchronicity (Morck et al. 2000). We further test the interaction effects of the returned IPOs and the IFRS convergence. The coefficients on *H_Listing*×*IFRS* are positive and significant in all columns except in Column (2). The results reveal that the information

advantage of firms with the returned IPOs is mitigated after the IFRS convergence when the information environment in China's A-share markets is enhanced.

The coefficients of control variables in Table 5 are generally consistent with those reported in Gul et al. (2010): the stock price synchronicity in a firm increases with state ownership and firm size and decreases with trading volume and growth potential (market to book value). Interestingly, we find that stock price synchronicity decreases with the large ownership concentration (top holding ratio), which may be consistent with the argument that controlling shareholders may voluntarily disclose more firm-specific information during and after IPO period. The results also indicate that firms with higher leverage and retention ratio in the IPOs have lower stock price synchronicity. Overall, the findings confirm our hypotheses regarding the impacts of the returned-global IPOs and the IFRS convergence on information quality. Our results for the returned IPOs from foreign markets echo the findings of less stock price synchronicity in China for firms with foreign investors than firms with only domestic investors (Gul et al. 2010). Similarly, our results disclose that Chinese firms going public after the IFRS convergence greatly benefit the A-share market by providing more firm-specific information, leading to lower stock price synchronicity.

[Insert Table 5 here]

5.4. Results of IPO underpricing

This section investigates the impacts of the returned IPOs and the IFRS convergence on IPO pricing through Model (7). In previous sections, we document that firms with returned IPOs and firms that went public after the IFRS convergence have improved earnings quality and information quality in the A-share market. These findings imply that those IPOs might have less IPO underpricing and lower first day returns than their counterparts. We thus test the impacts on

the first day returns and report the results in Table 6 using raw return (*RawRet*) in the first two columns and market-adjusted return (*MktAdjRet*) in the last two columns. Columns (1) and (3) report results from the full sample and Columns (2) and (4) report from the PSM sample.

The coefficients on *H_Listing* are negative and significant in all four columns, indicating that firms with returned IPOs have lower initial returns than firms with purely-domestic IPOs or PSM-domestic IPOs. The reduced IPO underpricing can be attributed to the decreased information asymmetry in their IPO process (Guo, 2005). The result echoes previous studies on IPO underpricing in the A-share and B-share market in China. Chen et al. (2004) find that the initial returns in the B-share market (shares available for foreign investors) are much lower than the returns in the A-share market (mostly limited to domestic investors). Unlike those studies, we provide direct evidence on the reduced IPO underpricing of the returned-global Chinese IPOs in the A-share market, which reflects the spillover effects of overseas listing.²¹ The coefficients of *IFRS* are negative and significant at the 1% level in all columns. The findings are consistent with Hong et al. (2014), who show that the IPO underpricing decreases after mandatory IFRS adoption in global markets. However, unlike their study that focuses on all domestic IPOs in each sample country, our study provides differential impacts of IFRS that reflect the spillover effect of foreign markets (for the returned-global IPOs) and the A-share market (for the purely-domestic IPOs). We find that the coefficients of the interaction term of *H_Listing*×*IFRS* are significantly positive in all four columns. It suggests that the information advantage of the returned IPO firms from overseas markets is mitigated by the improved information environment after the IFRS convergence in the A-share market.

²¹ Wu (2014) shows that the coefficients on the dummy variable of returned IPOs are negative but insignificant if firm- and offer-specific variables are controlled in the regressions. The coefficients in our regression remain significant with the firm-level control variables in the full sample.

The coefficients of control variables are consistent with previous studies of IPO underpricing in China (Chan et al. 2004; Chen et al. 2004; Tian 2011): the IPO underpricing decreases with firm size and IPO allocation rate and increases with firm age and the time lag between IPO date and listing date. The coefficients of state ownership and retention rate are not significant in explaining the first day returns. The first day return is reduced if the offering price is higher than the midpoint of the initial price range, indicating that the positive price revision leads to smaller IPO underpricing in China.

In sum, we confirm the hypotheses that firms with returned IPOs and firms going public after the IFRS convergence exhibit lower underpricing in the A-share market using both the full control sample and the PSM sample. Interestingly, the returned IPOs experience less decrease in the IPO underpricing in the post-IFRS period relative to the pre-IFRS period. These findings are attributed to higher quality earnings and improved information environment since the IFRS convergence in China. The improved information environments reduce information asymmetry of IPO firms, leading to lower IPO underpricing in the first day of trading.

[Insert Table 6 here]

6. Robustness tests

This section presents the results of robustness tests. We employ the instrumental variable approach to address the endogeneity concern that the choice to return to the A-share market is endogenous. To employ the instrumental variable approach, it is important to identify instruments that are correlated to the returned IPO decision of overseas listing firms but not related to the earnings quality, information quality and the first-day return in our tests. Hung et al. (2012) identify provincial legal environment and industry characteristics as two instrumental

variables in their endogeneity tests. The authors argue that these two instrumental variables are likely to be correlated with the overseas listing decision of Chinese companies because it is less costly for Chinese firms that are in regions with stronger legal environments and that are in less competitive industries to list on overseas markets because these firms are less likely to have governance problems. In the similar vein, we conjecture that overseas listing firms that are in regions with stronger legal environments and that are in less competitive industries are more likely to relist in China, as these companies are less likely to have governance problems and therefore it is less costly for these companies to comply with the relisting requirements enacted by CSRC. Thus, we follow Hung et al. (2012) and implement the following two instrumental variables: the marketization index at province level in China and the Herfindahl index in an industry as defined by CSRC. The former measures the legal environment and the latter measures the industry competition. We expect that stronger legal protection as well as less industry competition can encourage an overseas Chinese firm to return to the A-share market. These characteristics are exogenous to earnings quality, information quality and IPO underpricing at firm level because they are predetermined (Hung et al. 2012). In the first stage model, we estimate the probability of a returned IPO (*H_Listing*) by a logistic regression function on instrumental variables and control variables. The predicted probability of the returned IPO is included in the Equations (4), (6) and (7), which replaces the original variable of *H_Listing* in the second stage regression. The first stage model is given as:

$$\begin{aligned}
 H_Listing = & \alpha_0 + \alpha_1 Legal + \alpha_2 Herfindahl + \alpha_3 StateShare + \alpha_4 Size + \alpha_5 LEV + \alpha_6 Growth \\
 & + \alpha_7 ROA + \varepsilon
 \end{aligned} \tag{8}$$

Following Hung et al. (2012), we include control variables of pre-IPO firm characteristics: state ownership (*StateShare*), firm size (*Size*), leverage (*LEV*), sales growth (*Growth*) and return on assets (*ROA*).

[Insert Table 7 here]

Table 7 reports the results with the instrumental variable approach. Panel A of Table 7 reports the results of the first stage regression model from Model (8). The coefficients of two instrumental variables are both significantly positive at the 5% level, which are consistent with our prediction and the findings of Hung et al. (2012). Firms located in the provinces with strong legal protection and firms operating in less competitive industries (higher Herfindahl index) are more likely to have returned IPOs after overseas listings. The F statistic indicates that there is no weak instrument problem in the first stage regression.

Panels B through D of Table 7 report results by utilizing the predicted probability of returned IPOs ($H_Listing^P$) in Equations (4), (6) and (7). Panel B presents the results of discretionary accruals measures. The results are qualitatively similar for *PM_DACC* as in OLS regressions: the coefficients on $H_Listing^P$ and *IFRS* are significantly negative and the coefficient on $H_Listing^P \times IFRS$ is significantly positive. However, the results for *PM_DΔAR* and *PM_DΔINV* are less consistent. Panel C exhibits the results of stock price synchronicity. The coefficients on $H_Listing^P$ are negative in the regression models of *SYNCH1* and *SYNCH2*; and the coefficient is significant at the 1% level for the latter. The coefficients on *IFRS* remain negative and significant ($P < 0.01$) in both models. The coefficient of the interaction term remains positive and significant at the 1% level in the regression model of *SYNCH2*. Panel D reports the results on IPO pricing, which are consistent with those of the OLS regressions in

Table 6. The coefficients on $H_Listing^P$, $IFRS$, and the interaction term are all significant with predicted signs at the 1% level.

Overall, both the results by OLS models and instrumental variable models mostly support our hypotheses: firms with returned IPOs and firms going public after the IFRS convergence experience higher quality earnings and improved information environments, which lead to smaller IPO underpricing relative to the firms with purely domestic IPOs or PSM-domestic sample. Our results further reveal that the listing benefits of returned IPOs from foreign markets have diminished after the IFRS convergence in China. This evidence indicates the improved information environments in China after the IFRS convergence in 2007. Our results are robust to the endogeneity concern of the returned-global IPOs.

7. Concluding remarks

On June 6, 2018, the Chinese regulatory body, CSRC, adopted new rules to allow CDRs, encouraging overseas listed Chinese companies to return to the domestic market. Our study aims to understand the unique phenomenon for returning-global Chinese IPOs and their unknown implications to the Chinese IPO market. Utilizing a sample of returned-Global Chinese IPOs from developed capital markets, we examine the returned IPOs' contribution to the Chinese A-share markets. We conjecture and find that overseas listing experience improves financial reporting environments in the returned-global IPOs. They exhibit lower discretionary accruals (an inverse measure for earning quality), lower stock price synchronicity (an inverse measure of information quality) and lower first-day underpricing. In addition, the IFRS convergence in China enhances financial reporting and information quality of domestic IPOs and consequently,

reduces IPO underpricing. As such, the overseas listing benefits of the returned IPOs has diminished since the IFRS convergence in 2007.

Contributing to the literature on cross-border listing, initial public offerings, and IFRS, we provide evidence on the positive benefits of overseas listing in returned companies and the impacts of IFRS convergence on the local IPO market. The evidence indicates that the listing benefits of Chinese firms from foreign markets have declined after the IFRS convergence. Our study provides timely insights to Chinese regulators and global investors on the bright side of the recent regulatory change for overseas-listed Chinese firms to relist in the domestic market.

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Appendix 1: Variable definitions

Variable	Definition
<i>Panel A: Variables for the test of earnings quality</i>	
<i>TACC</i>	Total accruals calculated using the cash flow method as earnings before extraordinary items less cash flow from operations.
<i>NACC</i>	Normal accruals estimated from the modified cross-sectional Jones model (Jones 1991) as described in Dechow et al. (1995).
<i>DACC</i>	TACC minus NACC.
<i>PM_DACC</i>	Performance matched DACC.
<i>ΔAR</i>	Change of accounts receivables.
<i>NΔAR</i>	Normal change of accounts receivables.
<i>DΔAR</i>	ΔAR minus NΔAR.
<i>PM_DΔAR</i>	Performance matched DΔAR.
<i>ΔINV</i>	Change of inventories.
<i>NΔINV</i>	Normal change of inventories.
<i>DΔINV</i>	ΔINV minus NΔINV.
<i>PM_DΔINV</i>	Performance matched DΔINV.
<i>TA</i>	Total assets.
<i>ΔSALES</i>	Change in revenues from the preceding year.
<i>PPE</i>	Gross value of property, plant and equipment.
<i>H_Listing</i>	An indicator variable that equals 1 if the observation is a returned-global IPO to the home markets in China, and 0 otherwise.
<i>IFRS</i>	An indicator variable that equals 1 if the listing year is equal to or after 2007 (year of IFRS convergence), and 0 otherwise.
<i>H_Listing×IFRS</i>	H_Listing times IFRS.
<i>ROA₋₁</i>	Return on asset for the preceding year.
<i>Size</i>	The natural logarithm of total assets prior to the IPO.
<i>Age</i>	The difference between the founding year of the company and the IPO year.
<i>L(Age)</i>	The natural logarithm of firm's age computed as one plus Age.
<i>Growth</i>	Sales growth calculated as difference between current and preceding year sales divided by average total assets.
<i>LEV</i>	The leverage ratio prior to the IPO.
<i>StateShare</i>	The state ownership, calculated by the shares held by the government divided by the total shares outstanding.
<i>Variable_{-R}</i>	Scaled quintile ranks of <i>variable</i> .

Appendix 1: Variable definitions (Continued)

Variable	Definition
<i>Panel B: Variables for the test of information quality</i>	
<i>Ret</i>	The daily stock return for each firm in A-share markets in China.
<i>MktRet</i>	The daily market return for A-share markets in China.
<i>IndRet</i>	The daily industry return in A-share markets based on 15-industry classifications.
<i>WrdRet</i>	The daily world market return calculated by MSCI world index.
<i>MktRet_B</i>	The daily market return for B-share market in China.
<i>MktRet_H</i>	The daily market return for H-share market in Hong Kong.
$R^2(1)$	The R-squared in the market model by Equation (5a).
$R^2(2)$	The R-squared in the market model by Equation (5b), 5(c) or (5d).
<i>SYNCH1</i>	The logarithmic transformation of $R^2(1)$ using the formula $\log [R^2 / (1 - R^2)]$.
<i>SYNCH2</i>	The logarithmic transformation of $R^2(2)$ using the formula $\log [R^2 / (1 - R^2)]$.
<i>Volume</i>	The trading volume in the first year of post-IPO period, calculated by the total number of shares traded in the period divided by shares outstanding
<i>Size_Post</i>	The natural logarithm of total assets at the end of first fiscal year after IPO.
<i>LEV_Post</i>	The leverage ratio at the end of first fiscal year after IPO, calculated by the total liabilities divided by total assets.
<i>MTB</i>	The market to book ratio at the end of first fiscal year after IPO, calculated by the total market value divided by the total book equity value.
<i>StateShare</i>	The state ownership, calculated by the shares held by the government divided by the total shares outstanding
<i>Retention</i>	The retention ratio, calculated by the shares retained by the equity issuer divided by the total shares outstanding.
<i>Tophold</i>	The top holding ratio, calculated by the shares held by the largest shareholder on the IPO date divided by the total shares outstanding.
<i>Tophold²</i>	The square of top holding ratio
<i>Topgov</i>	Dummy variable of top government holding, equal to 1 if the largest shareholder is related to government, and 0 otherwise.
<i>Big4</i>	Dummy variable of Big 4 international auditor, equal to 1 if the firm is audited by one of the Big 4 auditors in the IPO year, and 0 otherwise.

Appendix 1: Variable definitions (Continued)

Variable	Definition
<i>Panel C: Variables for the test of IPO underpricing</i>	
<i>RawRet</i>	The initial raw return on IPO date, calculated by the first-day closing price minus the initial offering price, scaled by the initial offering price.
<i>MktAdjRet</i>	Market adjusted initial return, calculated by the initial raw return minus the market return on the IPO date.
<i>Size</i>	The natural logarithm of total assets prior to the IPO.
<i>Age</i>	The difference between the founding year of the company and the IPO year.
<i>L(Age)</i>	The natural logarithm of firm's age computed as one plus Age.
<i>Allocation</i>	The allocation rate to subscribers.
<i>LAG</i>	Listing time lag, calculated by the days between offering date and listing date
<i>LAG_D</i>	An indicator variable that equals 1 if the listing time lag is above the median value in the sample, and 0 otherwise.
<i>Revision</i>	The price revision in the IPO, calculated as the percentage change between the midpoint of initial offering price range and the offering price.
<i>AvgRet</i>	The average initial return (<i>RawRet</i>) in the recent IPOs in the past year before the IPO date.
<i>Panel D: Variables for the robustness tests</i>	
<i>Legal</i>	The marketization index at province level in China which measures the legal environment of each province; it is obtained from the 2005 National Economic Research Institute (NERI) Index.
<i>Herfindahl</i>	The Herfindahl index measuring the industry competition in China; it is calculated by the sum of the square of market shares of all firms in an industry.
<i>Growth</i>	The two-year sale growth in the years before the IPO.
<i>LEV</i>	The leverage ratio prior to the IPO.
<i>ROA</i>	The average ROA in the years before the IPO.

Table 1

Distribution of IPOs in China

Panel A: Distribution of IPOs in China A-share markets and those that returned to A-share market after overseas listing (Returned-global IPOs)

Issuing Year	Number of Total IPOs	Percent (%)	Number of Returned-Global IPOs	Percent (%)
1992	40	1.4	0	0.0
1993	124	4.3	3	4.8
1994	106	3.7	3	4.8
1995	24	0.8	5	7.9
1996	200	7.0	2	3.2
1997	201	7.0	3	4.8
1998	103	3.6	1	1.6
1999	96	3.4	1	1.6
2000	132	4.6	0	0.0
2001	75	2.6	6	9.5
2002	71	2.5	3	4.8
2003	67	2.4	2	3.2
2004	100	3.5	0	0.0
2005	15	0.5	1	1.6
2006	66	2.3	5	7.9
2007	126	4.4	12	19.0
2008	77	2.7	3	4.8
2009	99	3.5	1	1.6
2010	349	12.2	2	3.2
2011	282	9.9	4	6.3
2012	155	5.4	6	9.5
2013	2	0.1	0	0.0
2014	125	4.4	0	0.0
2015	<u>220</u>	<u>7.7</u>	<u>0</u>	<u>0.0</u>
Total	2,855	100.0	63	100.0

Panel B: Duration between overseas IPO and subsequent listing on A-share market

	Number of Returned-Global IPOs	Percent (%)
Within 1 year	15	23.8
1 – 2 years	11	17.5
2 – 3 years	5	7.9
3 – 5 years	14	22.2
Over 5 years	15	23.8
Over 10 years	<u>3</u>	<u>4.8</u>
Total	63	100.0

Table 1

Distribution of IPOs in China by Year and Industry (Continued)

Panel C: Distribution by industry (Industry Classifications by CSRC)

Industry	Category	Number of Total IPOs	Number of returned-Global IPOs
Agriculture, forestry, animal husbandry and fishery	A	62	0
Mining industry	B	55	8
Manufacturing industry	C	1,829	29
Industry of electric power, heat, gas and water production and supply	D	72	3
Construction industry	E	68	1
Wholesale and retail industry	F	86	12
Transport, storage and postal service industry	G	223	1
Accommodation and catering industry	H	125	0
Industry of information transmission, software and information technology services	I	64	6
Financial industry	J	60	1
Real estate industry	K	72	2
Leasing and commercial service industry	L	37	0
Scientific research and technical service industry	M	91	0
Water conservancy, environment and public facility management industry	N	7	0
Industry of culture, sports and entertainment	R	4	0
Total		2,855	63

This table presents the distribution of IPOs from 1992 to 2015. Panel A presents the annual distribution. Panel B provides duration between overseas IPO and subsequent listing on A-share market. Panel C presents the industry distribution.

Table 2
Descriptive Statistics

Panel A: Mean and median values of variables for returned-global IPOs, domestic IPOs and PSM-domestic IPOs

	Returned-Global IPOs (N=63)		Domestic IPOs (N=2,792)		PSM-domestic IPOs (N=63)	
	Mean	Median	Mean	Median	Mean	Median
<i>DACC</i>	0.016	0.014	0.075	0.073	0.072	0.056
<i>DΔAR</i>	0.007	0.002	0.046	0.031	0.028	0.003
<i>DΔINV</i>	0.01	0.002	0.04	0.028	0.021	0.004
<i>R2(1)</i>	0.543	0.535	0.443	0.432	0.504	0.497
<i>R2(2)</i>	0.462	0.456	0.388	0.378	0.454	0.449
<i>SYNCH1</i>	0.149	0.138	-0.24	-0.274	0.014	-0.013
<i>SYNCH2</i>	-0.17	-0.175	-0.486	-0.497	-0.195	-0.205
<i>RawRet</i>	0.975	0.714	1.321	0.628	1.498	0.606
<i>MktAdjRet</i>	0.963	0.661	1.307	0.634	1.512	0.629
<i>Volume</i>	0.007	0.004	0.021	0.016	0.015	0.013
<i>Size_Post</i>	23.626	23.480	20.767	20.643	21.839	21.537
<i>LEV_Post</i>	0.462	0.416	0.315	0.301	0.431	0.403
<i>MTB</i>	2.386	1.970	4.568	3.894	3.784	3.215
<i>StateShare</i>	0.452	0.526	0.225	0.000	0.402	0.492
<i>Retention</i>	0.881	0.904	0.650	0.746	0.744	0.749
<i>Tophold</i>	0.461	0.500	0.421	0.411	0.513	0.537
<i>Topgov</i>	0.587	1.000	0.309	0.000	0.587	1.000
<i>Big4</i>	0.556	1.000	0.013	0.000	0.079	0.000
<i>Size_R</i>	4.841	5.000	2.939	3.000	3.984	5.000
<i>L(Age)</i>	1.698	1.792	1.661	1.792	1.390	1.386
<i>LAG</i>	20.952	14.000	102.360	15.000	129.540	15.000
<i>LAG_D</i>	0.492	0.000	0.500	1.000	0.556	1.000
<i>Allocation</i>	0.017	0.006	0.010	0.004	0.011	0.005
<i>Revision</i>	-0.010	0.000	0.008	0.000	0.002	0.000
<i>AvgRet</i>	1.586	1.487	1.692	0.845	1.586	1.487

Table 2
Descriptive Statistics (Continued)

Panel B: Mean and median value differences between returned-Global IPOs vs. Domestic IPOs or PSM-domestic IPOs

Difference:	Returned-Global vs. Domestic IPO		Returned-Global vs. PSM-domestic IPO	
	Mean (t-stat)	Median (z-stat)	Mean (t-stat)	Median (z-stat)
<i>DACC</i>	-4.11***	-4.31***	-2.77***	-2.65***
<i>DΔAR</i>	-8.97***	-4.72***	-1.79*	-0.81
<i>DΔINV</i>	-4.69***	-4.52***	-0.75	-0.52
<i>R2(1)</i>	6.89***	5.18***	1.57	1.37
<i>R2(2)</i>	4.78***	4.54***	0.34	0.4
<i>SYNCH1</i>	6.40***	5.18***	1.37	1.38
<i>SYNCH2</i>	4.66***	4.55***	0.28	0.4
<i>RawRet</i>	-1.14	0.01	-1.44	0.03
<i>MktAdjRet</i>	-1.14	0.13	-1.53	0.23
<i>Volume</i>	-6.21***	-9.46***	-4.80***	-5.34***
<i>Size_Post</i>	21.66***	11.79***	6.06***	5.55***
<i>LEV_Post</i>	6.46***	5.45***	0.80	0.77
<i>MTB</i>	-6.033***	-8.30***	-4.16***	-4.74***
<i>StateShare</i>	6.31***	5.89***	1.01	0.03
<i>Retention</i>	7.67***	11.21***	8.14***	6.91***
<i>Tophold</i>	1.74*	2.16**	-1.55	-1.70*
<i>Topgov</i>	4.72***	4.70***	0.00	0.00
<i>Big4</i>	31.50***	27.14***	6.63***	5.72***
<i>Size_R</i>	10.76***	10.52***	4.54***	4.91***
<i>L(Age)</i>	0.33	0.06	2.02**	1.80*
<i>LAG</i>	-1.59	-0.65	-1.83*	-1.28
<i>LAG_D</i>	-0.13	-0.13	-0.71	-0.71
<i>Allocation</i>	3.19***	2.44**	1.44	1.11
<i>Revision</i>	-1.31	0.05	-0.78	0.26
<i>AvgRet</i>	-0.51	0.80	0.00	0.00

This table presents the mean and median values of related firm specific variables. Panel A gives the values in returned-global IPOs, domestic IPOs and PSM-domestic IPOs. Panel B shows the t-statistics and z-statistics for the differences in the mean and median values between returned-global IPOs and domestic IPOs, and between returned-global IPOs and PSM-domestic IPOs. See variable definitions in Appendix 1.

Table 3Median Values of *DACC* and its Components around IPO year

Panel A: Total sample

	Year -2	Year -1	Year 0	Year 1	Year 2
<u>Returned global IPOs</u>					
N	37	38	63	63	63
<i>DACC</i>	0.001	-0.007	0.014	0.017	0.005
<i>DΔAR</i>	0.004	0.001	0.002*	-0.002	0.000
<i>DΔINV</i>	0.003*	-0.001	0.002	0.004*	0.004***
<u>Domestic IPOs</u>					
N	1,175	1,351	1,338	1,338	1,337
<i>DACC</i>	0.051***	0.051***	0.080***	0.050***	0.036***
<i>DΔAR</i>	0.024***	0.024***	0.033***	0.017***	0.016***
<i>DΔINV</i>	0.027***	0.028***	0.030***	0.021***	0.017***
<u>PSM-domestic IPOs</u>					
N	37	38	63	63	63
<i>DACC</i>	-0.014	-0.015	0.032**	0.027	0.014
<i>DΔAR</i>	-0.000	-0.000	-0.000	0.005	0.003
<i>DΔINV</i>	-0.000	-0.004	-0.001	0.001	0.002

Panel B: Sub-sample of pre-IFRS period (IPO year < 2007)

	Year -2	Year -1	Year 0	Year 1	Year 2
<u>Returned global IPOs</u>					
N	11	11	35	35	35
<i>DACC</i>	0.010	-0.025	-0.008	0.020	-0.030
<i>DΔAR</i>	-0.004	-0.002	0.000	-0.002	-0.004
<i>DΔINV</i>	-0.001	0.001	-0.001	0.000	0.000
<u>Domestic IPOs</u>					
N	129	299	280	280	279
<i>DACC</i>	0.018**	0.022***	0.046***	0.034***	0.021***
<i>DΔAR</i>	0.028***	0.016***	0.048***	0.018***	0.011***
<i>DΔINV</i>	0.031***	0.026***	0.032***	0.025***	0.018***
<u>PSM-domestic IPOs</u>					
N	11	11	35	35	35
<i>DACC</i>	-0.007	-0.043	-0.036	-0.021	-0.015
<i>DΔAR</i>	-0.000	-0.015*	-0.000	0.006	-0.004
<i>DΔINV</i>	-0.000	-0.002	0.002	0.000	-0.001

Table 3Median Values of *DACC* and its Components around IPO year (Continued)Panel C: Sub-sample of post-IFRS period (IPO year \geq 2007)

	Year -2	Year -1	Year 0	Year 1	Year 2
<u>Returned global IPOs</u>					
N	26	27	28	28	28
<i>DACC</i>	-0.012	0.008	0.019	0.011	0.012
<i>DΔAR</i>	0.005	0.004	0.003*	-0.002	0.001
<i>DΔINV</i>	0.009**	-0.001	0.006*	0.005**	0.005***
<u>Domestic IPOs</u>					
N	1,046	1,052	1,058	1,058	1,058
<i>DACC</i>	0.056***	0.058***	0.088***	0.054***	0.040***
<i>DΔAR</i>	0.023***	0.025***	0.029***	0.017***	0.017***
<i>DΔINV</i>	0.026***	0.028***	0.030***	0.021***	0.016***
<u>PSM-domestic IPOs</u>					
N	26	27	28	28	28
<i>DACC</i>	-0.016	0.019	0.091***	0.041**	0.018**
<i>DΔAR</i>	-0.000	0.002	-0.002	0.003	0.004
<i>DΔINV</i>	-0.000	-0.004	-0.002	0.010	0.003

This table presents the median values of discretionary total accruals (*DACC*) and its current portion components, including discretionary change of accounts receivables (*DΔAR*), and discretionary change of inventories (*DΔINV*) for the period from Year -2 to Year +2 around IPOs (Year 0). The IPO sample period truncates to Year 2013 for retaining Year +2 data. Panel A presents the result of the total sample. Panel B and Panel C present the result of sub-samples for the pre- and post-IFRS periods. Wilcoxon test is used to examine whether the median values are statistically different from zero. See variable definitions in Appendix 1. *, ** and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Table 4

Returned-Global IPOs, IFRS, and Earnings Quality measured by *DACC* and its Components for IPO Year

Variables	Full sample			PSM-domestic sample		
	<i>PM_DACC</i>	<i>PM_DΔAR</i>	<i>PM_DΔINV</i>	<i>DACC</i>	<i>DΔAR</i>	<i>DΔINV</i>
Intercept	0.085* (1.68)	0.094*** (3.66)	0.066 (1.63)	0.195 (1.24)	0.210*** (2.70)	0.336*** (2.92)
<i>H_Listing</i>	-0.073** (-2.28)	-0.063** (-2.25)	-0.014* (-1.66)	-0.187* (-1.83)	-0.095*** (-2.89)	-0.205** (-2.11)
<i>IFRS</i>	-0.065** (-2.24)	-0.050** (-2.58)	-0.014 (-0.86)	-0.226** (-2.15)	-0.066*** (-3.24)	-0.280*** (-2.79)
<i>H_Listing</i> × <i>IFRS</i>	0.072* (1.65)	0.043 (1.47)	-0.002 (-0.10)	0.135 (1.29)	0.069* (1.96)	0.210** (2.11)
<i>ROA_1_R</i>	-0.015 (-1.02)	-0.015** (-2.08)	-0.007 (-0.88)	0.065* (1.74)	-0.021 (-0.88)	-0.005 (-0.18)
<i>Size_R</i>	0.006 (0.46)	-0.026*** (-3.66)	-0.016** (-2.27)	-0.054 (-0.96)	-0.038 (-1.62)	-0.100** (-2.40)
<i>L(Age)_R</i>	-0.004 (-0.30)	-0.004 (-0.57)	-0.004 (-0.52)	0.017 (0.24)	-0.040 (-1.62)	0.003 (0.13)
<i>Growth_R</i>	-0.042*** (-3.48)	-0.009 (-1.37)	-0.011* (-1.66)	-0.035 (-0.53)	-0.071** (-2.36)	-0.050* (-1.79)
<i>LEV_R</i>	0.027* (1.85)	0.007 (1.06)	0.018** (2.42)	0.044 (0.96)	-0.029 (-1.13)	0.014 (0.46)
<i>StateShare_R</i>	-0.010 (-0.67)	-0.019** (-2.43)	-0.007 (-0.76)	-0.031 (-0.40)	-0.040 (-1.32)	0.004 (0.12)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	1,683	1,683	1,683	126	126	126
Adj. R-Sq	0.1564	0.0648	0.0251	0.3891	0.5654	0.5443

This table presents results from regressing *DACC* and its components for the IPO year (Year 0). All continuous explanatory variables are scaled by quintile ranks (*Variable_R*). *t*-statistics appear in parentheses and are calculated based on standard errors clustered by IPO month. See variable definitions in Appendix 1. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively (two-tailed).

Table 5
Returned-Global IPOs, IFRS and Stock Price Synchronicity

Variables	<i>SYNCH1</i> (Full sample)	<i>SYNCH1</i> (PSM)	<i>SYNCH2</i> (Full sample)	<i>SYNCH2</i> (PSM)
<i>Intercept</i>	-1.553*** (-6.79)	-1.421 (-1.44)	-1.220*** (-5.52)	0.337 (0.33)
<i>H_Listing</i>	-0.202*** (-2.63)	-0.280* (-1.87)	-0.305*** (-3.67)	-0.308** (-2.27)
<i>IFRS</i>	-0.872*** (-9.52)	-1.223*** (-5.11)	-0.940*** (-10.58)	-1.393*** (-5.86)
<i>H_Listing</i> × <i>IFRS</i>	0.169* (1.69)	0.192 (1.29)	0.344*** (3.60)	0.301** (2.24)
<i>Volume</i>	-0.694 (-1.34)	3.428 (0.70)	-0.938* (-1.65)	4.867 (1.07)
<i>Size_Post</i>	0.128*** (11.54)	0.101** (2.15)	0.097*** (8.94)	0.026 (0.55)
<i>LEV_Post</i>	-0.322*** (-6.35)	-0.483* (-1.78)	-0.182*** (-3.57)	-0.410 (-1.36)
<i>MTB</i>	-0.021*** (-5.06)	-0.057** (-2.34)	-0.027*** (-6.36)	-0.066** (-2.46)
<i>StateShare</i>	0.083* (1.78)	0.062 (0.30)	0.058 (1.23)	0.180 (0.88)
<i>Retention</i>	-0.159*** (-2.67)	0.190 (0.34)	-0.141** (-2.44)	-0.063 (-0.10)
<i>Tophold</i>	-0.842*** (-4.88)	1.046 (1.51)	-0.700*** (-4.13)	0.864 (1.12)
<i>Tophold</i> ²	0.887*** (4.38)	-0.819 (-1.13)	0.758*** (3.75)	-0.872 (-1.13)
<i>Topgov</i>	0.033 (1.40)	0.027 (0.30)	0.041* (1.74)	0.059 (0.61)
<i>Big4</i>	0.066 (1.22)	0.109 (1.04)	-0.012 (-0.25)	0.154 (1.46)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
N	2,815	126	2,815	126
Adj. R-Sq	0.4857	0.7370	0.5835	0.6942

This table estimates the impacts of the returned-global IPO and IFRS convergence on stock price synchronicity. The stock price synchronicity is calculated by the daily stock returns in 3-year trading period after IPO date. The control variables *Volume*, *Size*, *LEV* and *MTB* are for first year after IPO (Year 1). The variables *StateShare*, *Retention*, *Tophold*, *Topgov* and *Big4* are calculated in IPO year (Year 0). See variable definitions in Appendix 1. All continuous variables have been winsorized at the 1st and 99th percentiles. *T*-statistics appear in parentheses and are calculated based on robust standard errors. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively (two-tailed).

Table 6
Returned-Global IPOs, IFRS and IPO initial returns

Variables	<i>RawRet</i> (Full sample)	<i>RawRet</i> (PSM)	<i>MktAdjRet</i> (Full sample)	<i>MktAdjRet</i> (PSM)
<i>Intercept</i>	14.551** (2.31)	10.043 (0.62)	14.798** (2.37)	10.326 (0.64)
<i>H_Listing</i>	-15.288*** (-2.63)	-11.260 (-0.75)	-15.528*** (-2.70)	-11.377 (-0.76)
<i>IFRS</i>	-1.234*** (-3.46)	-1.545* (-1.71)	-1.227*** (-3.43)	-1.550* (-1.74)
<i>H_Listing</i> × <i>IFRS</i>	1.441*** (3.55)	1.445* (1.93)	1.424*** (3.51)	1.443* (1.95)
<i>Size_R</i>	-0.097*** (-3.18)	-0.184 (-0.67)	-0.096*** (-3.17)	-0.190 (-0.70)
<i>L(Age)</i>	1.015*** (9.64)	1.589** (2.57)	1.003*** (9.64)	1.568** (2.58)
<i>Allocation</i>	-17.010*** (-7.46)	-5.246 (-0.61)	-17.106*** (-7.51)	-5.286 (-0.62)
<i>LAG_D</i>	0.474*** (4.46)	-0.163 (-0.39)	0.446*** (4.21)	-0.195 (-0.48)
<i>StateShare</i>	0.322* (1.77)	1.357 (1.54)	0.328* (1.83)	1.411 (1.63)
<i>Retention</i>	-0.683 (-1.50)	-1.133 (-0.51)	-0.709 (-1.57)	-1.232 (-0.56)
<i>Revision</i>	-0.724*** (-3.59)	-3.448 (-1.48)	-0.732*** (-3.63)	-3.475 (-1.50)
<i>AvgRet</i>	-2.223* (-1.94)	-0.977 (-0.32)	-2.273** (-2.00)	-1.008 (-0.33)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
N	2,812	126	2,812	126
Adj. R-Sq	0.313	0.489	0.313	0.494

This table estimates the impacts of returned-global IPO decision and IFRS adoption on IPO initial returns. The financial statement variables are for the IPO year (Year 0). All continuous variables have been winsorized at the 1st and 99th percentiles. See variable definitions in Appendix 1. *t*-statistics appear in parentheses and are calculated based on standard errors clustered by IPO month. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively (two-tailed).

Table 7

Robustness Tests: Instrumental variable approach

Panel A: Logistic regression in the home listing decision of returned-global IPOs in the first stage model

Variable	<i>H_Listing</i>
Intercept	-12.365*** (-5.18)
<i>Legal</i>	0.232** (2.33)
<i>Herfindahl</i>	1.104** (2.30)
<i>StateShare</i>	0.814** (2.08)
<i>Size_R</i>	1.859*** (3.91)
<i>LEV</i>	-0.475 (-0.52)
<i>SGA</i>	-0.917* (-1.69)
<i>ROA</i>	-5.788 (-1.44)
N	2,748
Pseudo R-Sq	0.2901
Test of weak instruments	F = 11.6239

Panel B: Determinants of *DACC* and its components for Year 0 (Instrumental variable approach)

Variables	<i>PM_DACC</i>	<i>PM_DΔAR</i>	<i>PM_DΔINV</i>
Intercept	0.081 (1.55)	0.083*** (3.16)	0.037 (1.02)
<i>H_Listing^P</i>	-0.557*** (-2.65)	-0.117 (-0.66)	-0.040 (-0.41)
<i>IFRS</i>	-0.077** (-2.55)	-0.051** (-2.48)	-0.010 (-0.63)
<i>H_Listing^P×IFRS</i>	0.728*** (3.21)	0.011 (0.06)	-0.176* (-1.78)
<i>Control</i>	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
N	1,651	1,651	1,651
Adj. R-Sq	0.1617	0.0655	0.0299

Table 7

Robustness Tests: Instrumental variable approach (Continued)

Panel C: Returned-Global IPOs, IFRS and stock price synchronicity (instrumental variable approach)

Variables	<i>SYNCH1</i>	<i>SYNCH2</i>
Intercept	-1.383*** (-5.15)	-0.864*** (-3.23)
<i>H_Listing^P</i>	-0.145 (-0.67)	-0.600*** (-2.92)
<i>IFRS</i>	-0.930*** (-8.99)	-1.051*** (-10.72)
<i>H_Listing^P×IFRS</i>	0.539 (1.57)	1.716*** (5.21)
Control	Yes	Yes
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
N	2708	2708
Adj. R-Sq	0.4720	0.5713

Panel D: Returned-Global IPOs, IFRS and IPO initial return (instrumental variable approach)

Variables	<i>RawRet</i>	<i>MktAdjRet</i>
Intercept	8.224 (1.45)	8.470 (1.51)
<i>H_Listing^P</i>	-3.582*** (-3.43)	-3.458*** (-3.32)
<i>IFRS</i>	-9.421* (-1.80)	-9.657* (-1.86)
<i>H_Listing^P×IFRS</i>	5.174*** (4.52)	5.163*** (4.57)
Control	Yes	Yes
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
N	2718	2718
Adj. R-Sq	0.3202	0.3215

Note: the variable *H_Listing^P* is the predicted probability of home listing decision of returned-global IPOs from the first stage model in Equation (8). See variable definitions in Appendix 1. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively (two-tailed).