Does IFRS reduce IPO underpricing? Evidence from China

Yu Ling Tsai , Hua-Wei Huang

PII: S1544-6123(19)30352-6
DOI: https://doi.org/10.1016/j.frl.2020.101673
Reference: FRL 101673

To appear in: *Finance Research Letters*

Received date: 11 April 2019
Revised date: 10 April 2020
Accepted date: 27 June 2020

Please cite this article as: Yu Ling Tsai , Hua-Wei Huang , Does IFRS reduce IPO underpricing? Evidence from China, *Finance Research Letters* (2020), doi: https://doi.org/10.1016/j.frl.2020.101673

Highlight

The adoption of convergent-IFRS reduces IPO underpricing in China.

Managerial judgement becomes even more relevant in China because IFRS involves fair value measurement as well as principle-based regulation.

Does IFRS reduce IPO underpricing? Evidence from China

Miss Yu Ling Tsai
Professor Hua-Wei Huang
College of Management
National Cheng Kung University, Taiwan
Address: 1 University Rd., Tainan City, Taiwan, ROC
r18011036@mail.ncku.edu.tw
Telephone Number: +886-6-2757575 EXT.53423

April 2020

JEL classification: G14, M40, M41, P31, P33

Abstract

In this study, we examine whether the adoption of convergent-IFRS in China reduces IPO underpricing, which is of interest to investors and regulators. Using panel data from 2,666 non-financial IPOs of A-shares listed on the Shanghai and Shenzhen Stock Exchanges between 1996 and 2019, the study shows that the adoption of convergent-IFRS mitigates the phenomenon of IPO underpricing in China and this transition benefit is not moderated by the proportion of SOEs. We fill the gap in the literature with a contribution to global evidence on the adoption of IFRS standards.

Keywords: IFRS, IPO underpricing, China, information asymmetry

1. Introduction

China's economy has undergone huge growth in the past few decades and is now the second largest economy in the world, standing only behind that of the USA. The establishment of the Shanghai Stock Exchange in 1990, with 8 A-share corporations listed, was a milestone in the

development of China's capital market. According to the *Report of Allianz Global Investors in 2017*, there were 3,498 A-share corporations listed on the Shanghai and Shenzhen Stock Exchanges in 2017, with a total market value of up to 8.7 trillion USD, while foreign investment accounted for less than 2% of the A-share market value. However, with the inclusion of China's A-shares in the MSCI (Morgan Stanley Capital International) EM Index in 2018, foreign capital is expected to increase dramatically in the coming years, which motivates this study to explore how International Financial Reporting Standards (IFRS) impacts Chinese capital markets.

Accounting information disclosure plays a relevant role in reducing information asymmetry in emerging capital markets and developing economies by driving them to adopt international practices and standards. Whether or not the implementation of the Chinese convergent-IFRS is successful (e.g. making financial information more transparent) is an important concern for global regulators and investment decision makers, which motivates an investigation as to whether information asymmetry is mitigated after the adoption of the convergent-IFRS in China.

IFRS is set and issued by the International Accounting Standards Board (IASB). There are two significant differences of IFRS from the traditional GAAPs of many countries. IFRS requires financial reports to be compiled on a principle-based regulation instead of a rule-based one, so it is more of a concept regulation, not a detailed one, to be globally applicable to corporations of different countries, regions, and legislative mechanisms. In addition, IFRS measures assets and liabilities based on fair value instead of historical cost positively to adequately reflect the market value change

of assets and liabilities, while also to protect investors from suffering a significant impairment of net assets, the so-called off-balance sheet risk (Huang and Lin 2016; Lin et al. 2017).

The earliest accounting regulations in China were promulgated by the Ministry of Finance (MOF) of China on March 4, 1985, and the adoption represents the origin of the Chinese Accounting Standards (referred to hereafter simply as CAS), which was rendered substantially convergent with IFRS (referred to hereafter as convergent-IFRS) in 2007, with the adoption of listed corporations in China.

Peng and Smith (2010) find that the Chinese government, with its efforts to improve the quality of accounting standards, has been successful in promoting convergence with IFRS. However, Chinese regulators are unsure as to whether IFRS can be successfully applied in their country (Ding and Su, 2008). Since convergent-IFRS in China requires financial reports to be compiled on fair-value measurement as well as on principle-based regulation, financial information should more closely correspond to market conditions, which requires substantially more managerial judgment. The fair-value measurement more reflecting market conditions would decrease information asymmetry, while the principle-based regulation allowing for more managerial judgment might increase information asymmetry. There is still a debate. We provide evidence contributing to this debate that our findings are informative to other transition economies especially when the national regulator is tangled up in managerial and policy decisions. Further, managerial judgement becomes even more relevant in China because IFRS involves fair value measurement as well as

principle-based regulation, which is a challenge even for developed countries. Finally, our findings have legitimate policy implications for IPOs worldwide, where the national regulator has material influence.

To better investigate the effects of state ownership in China's capital markets, which are also of interest to investors, the paper additionally argues that the association between the adoption of convergent-IFRS and IPO underpricing is moderated by the proportion of state ownership per IPO. Prior studies have indicated that local governments may be adversely motivated and have political influence over state owned firms (Chen et al., 2008; Shleifer and Vishny, 1998), and these influences may cause agency problems and information asymmetry (Choi et al., 2010). Using observation IPOs of A-shares listed on the Shanghai and Shenzhen Stock Exchanges between 1996 and 2019, the study shows that the adoption of convergent-IFRS mitigates IPO underpricing in China and this transition benefit is not moderated by the proportion of SOEs possibly with the increasing sophistication of the Chinese financial markets.

2. Hypothesis Development

The particular institutional background of China also motivates this study. Firms in China are able to issue A-shares or B-shares or both, and choose to go public on the Shanghai or Shenzhen Stock Exchange. Dual-listings are not permitted. The shares of such companies are sorted into state-owned shares, legal-entity-owned shares, and tradable shares. The first two types of shares are non-tradable, known as the split-share system. The state-owned shares are directly owned by the

central or local governments, and are documented to be drivers effecting IPO underpricing (Cheung et al., 2009; Choi et al., 2010). Legal-entity shares are those held by domestic entities or financial institutions (many of them are state-owned as well). Both the state-owned shares and legal-entity shares are wholly non-tradable before April 2005, when the so-called non-tradable shares reform or state-owned share reform or split-share reform happened.

IPO underpricing implies that the offering price does not adequately reflect the market value of the company. Researchers have been examining the factors which cause initial returns on the first day of listing. For example, Ibbotson et al. (1994) indicate that information asymmetry influences IPO underpricing, while Boulton et al. (2011) find that high quality financial information depresses IPO underpricing. Since IPO underpricing has been documented in China's capital market before the adoption of convergent-IFRS (Chan et al., 2004; Boulton et al., 2011), it is important to test if the adoption of convergent-IFRS reduces information asymmetry with IPO settings in China.

Prior research shows that IPO underpricing decreases following the IFRS adoption for a global sample (Hong et al., 2014)[1]. Moreover, financial information compiled in accordance with the Chinese convergent-IFRS should be of better quality than that of the old CAS, and thus decrease IPO underpricing (Boulton et al., 2011). Chen et al. (2019) find that the Chinese capital market reacts favorably to IFRS convergence, where this effect is more pronounced among firms with greater

[1] Lin and Tian (2012) document that accounting conservatism (proxied by total accruals) is negatively associated with IPO underpricing in China from 2001 to 2009. Maglio et al. (2018) find that the IFRS adoption is not associated with a decrease in IPO underpricing in Italy. After IFRS adoption, but prior to issuing SEOs, Harakeh et al. (2019) indicate lower levels of earnings management and information asymmetry among high-divergence firms in UK and France. Opare et al. (2020) find that SEO underperformance decreases after adopting IFRS with a cross-country sample.

dependence on external capitals. In addition, information disclosure should be closer to market conditions. In this case, it is possible to predict that the adoption of the Chinese convergent-IFRS would decrease IPO underpricing.

However, the character of China's institutional environment mentioned above is that the government has a 'grabbing hand' on state-owned shares (Shleifer and Vishny, 1998). Local governments are in need of more capital to develop local economies, and their interests are aligned with those of state-owned firms (Chen et al., 2008). Therefore, local governments are motivated and have political influences on state-owned shares that might cause agency problems and information asymmetry. In addition, the principle-based Chinese convergent-IFRS allowing for more managerial judgment, would also cause agency problems as the state-owned shares do. The agency problems caused by managerial judgment might even possibly interact with the ones caused by state-owned shares. Those would all lead IPO underpricing to increase.

We investigate whether the adoption of Chinese convergent-IFRS results in a reduction of IPO underpricing in China.

H_1: The adoption of convergent-IFRS is negatively and significantly associated with IPO underpricing in China.

Although governments influence state owned shares, the Chinese government executed the reform of non-tradable shares in April 2005, aiming to decrease the percentage of state-owned shares within each firm. According to the report 'Non-tradable Share Reform in China's Capital Markets' of

CSRC in February 2007, 96% of the listed companies had completed this reform as of December 2006. To rule out alternative explanations of tests of H1 related to the reform of non-tradable shares, in addition to controlling the factor of state-owned shares in the testing regression model, we further examine whether the impact of the percentage of state-owned shares on IPO underpricing would be influenced by the adoption of convergent-IFRS. The second hypothesis is thus as follows:

H_2: The proportion of shares owned by the state in Chinese firms at the time of their IPOs moderates the relationship between the adoption of convergent-IFRS and IPO underpricing.

3. Empirical Tests

This study focuses only on A-shares because compilation regulations for financial reports of B-shares differ from that of A-shares before 2007 and the foreign financing function of the B-shares has declined, 52 B-shares listed on the Shanghai Stock Exchange and 50 on the Shenzhen Stock Exchange, all having entered the market with IPOs from 1992 to 2000. To avoid an alternative explanation and misunderstanding, it's noted that the sample set here is IPOs of firms issuing A-shares for the first time and never having issued other types of shares such as B-shares before[2]. In addition, the sample set is selected from 1996, when the data used to calculate the underwriter market share is available. After excluding samples for the year 2007[3], ones with a processing time of over 360 days and ones with missing data, 2,666 non-financial IPOs of A-shares are examined herein

[2] Each observation firm appears only once in the sample period.
[3] The transition year 2007 is excluded to avoid potential mixing effects (Hong et al., 2014).

using information obtained from the CSMAR and TEJ databases.

The study incorporates a sophisticated OLS regression model presented by Chan et al. (2004) and adds other related variables with justifications from previous studies. The scaled variables used in the analysis are winsorized at the top and bottom one percent of their respective distributions to reduce the effects of outliers. The models are formulated as follows to test H1 and H2, respectively:

(1) Model 1: ***Underpricing*** = β0 + β1 (***Post***) + β2 (***Reputation***) + β3 (***Bookbuilt***)

+ β4 (***Timelag***) + β5 (***Offersize***) + β6 (***SOEP***) + β7 (***FSR***) + β8 (***Age***)

+ β9 (***Leverage***) + β10 (***ROA***) + β11 (***STDret***) + β12 (***Marketstate***)

+ β13 (***Exch***) + ***Industry Fixed Effect***

(2) Model 2: ***Underpricing*** = β0 + β1 (***Post***) + β2 (***Reputation***) + β3 (***Bookbuilt***)

+ β4 (***Timelag***) + β5 (***Offersize***) + β6 (***SOEP***) + β7 (***Post*SOEP***) + β8 (***FSR***)

+ β9 (***Age***) + β10 (***Leverage***) + β11 (***ROA***) + β12 (***STDret***)

+ β13 (***Marketstate***) + β14 (***Exch***) + ***Industry Fixed Effect***

where the main variable of interest, ***Post***, is a dummy variable equal to 1 if the IPO occurred after convergent-IFRS adoption. Following the study of Chan et al. (2004), we incorporate ***Timelag***, ***Offersize***, ***SOEP***, ***Age***, ***Marketstate*** and ***Exch***. Especially important, ***SOEP***, a significant factor of China's institutional environment, is incorporated in the model in order to avoid an alternative explanation of testing results. ***Reputation***, the market share of each individual underwriter (Carter et al., 1998), is included to capture the quality of an underwriter with a predicted negative association

with IPO underpricing (Chang et al., 2010; Hong et al., 2014). The book-building mechanism (***Bookbuilt***) is an indicator variable equal to 1 if shares are offered through the book-building process. Sherman (2005) indicates that book-building allows issuers and investors to reduce risk, thereby limiting underpricing. Following Lin and Tian (2012), firm conservatism (***TA***) found to impact IPO underpricing is incorporated. The standard deviation of the IPO-security raw returns after shares go public (***STDret***) is measured using a time-series of 255 trading days commencing six trading days after the IPO to capture the riskiness of future cash flows (Carter et al., 1998). The dependent variable, ***Underpricing***, is set as the first listing-day return and is used as a proxy for information asymmetry (Chan et al., 2004; Boulton et al., 2011; Lin and Tian, 2012; Hong et al., 2014).

To test the second hypothesis, the study further incorporates an interaction term, ***Post*SOEP***, in regression Model 2 to investigate the interaction effect between the adoption of convergent-IFRS and the percentage of state-owned shares on the IPO underpricing phenomenon. We center each continuous independent variable on the mean before they interacted with others to avoid the problem of multicollinearity.

4. Results

Table 1 presents the descriptive statistics for all variables used in our testing models.

[Table 1 about here]

Column H1 of Table 2 presents the estimation results of regression Model 1. The overall fit of the model is statistically significant ($p<0.001$), with an explanatory power (adjusted R-square) of

0.3529 with variance inflation factors (VIF) and the condition index (CI) less than the respective cut offs of multicollinearity. The dependent variable, ***Underpricing***, is significantly and negatively associated with the adoption of convergent-IFRS (***Post***), as predicted. With regard to the other control variables, except for underwriter reputation (***Reputation***) and percentage of foreign-held shares in the firm (***FSR***), their coefficients differ significantly from 0 and have the same signs as predicted.

The present results show that the adoption of convergent-IFRS diminishes IPO underpricing in China. The remaining results are consistent with those of prior studies and indicate that the book-building mechanism (***Bookbuilt***) and IPO characteristics, such as the scale (***Offersize***), ***Age***, debt ratio (***Leverage***), and returns on assets (***ROA***), all have negative effects on IPO underpricing, while the proportion of state-owned shares (***SOEP***), riskiness of future cash flows (***STDret***), market performance (***Marketstate***), and listing on the Shanghai Stock Exchange (***Exch***) all have positive effects on IPO underpricing. Especially, the positively significant coefficient of ***SOEP*** implies that government-owned shares in China still cause IPO underpricing to increase.

Column H2 of Table 2 shows that regression Model 2 has an explanatory power (adjusted R-square) of 0.3542 with an overall fit statistically significant ($p<0.001$). The coefficient on ***SOEP*** is significantly positive, as in column H1. Furthermore, the coefficient on ***Post*SOEP*** in regression Model 2 is also significantly positive, while the coefficient on the main variable of interest, ***Post***, remains significantly negative and the coefficients on all the other variables are the same. In other

words, the negative effect of the adoption of convergent-IFRS on IPO underpricing is moderated by IPOs having state-owned shares. The results thus show that when the other variables are controlled, the adoption of Chinese convergent-IFRS reduced IPO underpricing in China's capital market, and that this effect would be unavoidably weakened by the organizational structure of having a significant percentage of state-owned shares.

[Table 2 about here]

5. Conclusion

IFRS incorporates measurement of fair value to make financial information disclosure more reflect the market condition and protect investors from off-balance sheet risk, it is meaningful that we provide evidence contributing to the debate whether the adoption of Chinese convergent-IFRS mitigates IPO underpricing. Both the adoption of Chinese convergent-IFRS and IPO underpricing are issues of interest to investors and regulators. Consistent with Hong et al. (2014), our findings show that the adoption of convergent-IFRS reduces IPO underpricing in China, and are informative to other transition economies especially when the national regulator is tangled up in managerial and policy decisions. Further, managerial judgement becomes even more relevant in China because IFRS involves fair value measurement as well as principle-based regulation, which is a challenge even for developed countries. Finally, our findings have legitimate policy implications for IPOs worldwide, where the national regulator has material influence.

The Chinese government carried out the state ownership revolution in 2005, aiming at reducing

the percentage of state-owned shares within each firm, and we have controlled it (***SOEP***) in our regression model to leave the concern of the alternative explanation from state ownership revolution. We document that both prior to the adoption of convergent-IFRS in China and ex ante, the state-owned shares increase IPO underpricing. However, the state-owned shares do not moderate the transition benefit from adoption of convergent-IFRS mitigating IPO underpricing possibly with the increasing sophistication of the Chinese financial markets.

This study is the first to examine the association between the adoption of convergent-IFRS in China and IPO underpricing in the primary market. Future studies may derive similar investigation with a set of different sample like seasoned equity offerings (SEOs) in the second market to address more evidence on the adoption of convergent-IFRS in China.

Acknowledgement

We express our gratitude to Dr. Ping-Hsun Huang, Dr. Ting-Kai Chou and various workshop participants at National Cheng Kung University for their insights, comments and suggestions in preparing this submission. Hua-Wei Huang gratefully acknowledges the Ministry of Science and Technology, Taiwan, ROC, for support of this work under contract (Project No. MOST 107-2410-H-006-017-MY3).

The paper has been edited by a native English speaker with a strong background in academic editing.

References

Bouton, T.J., Smart, S.B. and Zutter, C.J. (2011), 'Earnings quality and international IPO underpricing', *The Accounting Review* 86(2): 483–505.

Carter, R.B., Dark, F.H. and Singh, A.K. (1998), 'Underwriter reputation, initial returns, and the long-run performance of IPO stocks', *The Journal of Finance* 53(1): 285-311.

Chan, K., Wang, J. and Wei, K.C.J. (2004), 'Underpricing and long-term performance of IPOs in China', *Journal of Corporate Finance* 10(3): 409–430.

Chang, X., Lin, S.H., Tam, L.H.K. and Wong, G. (2010), 'Cross-sectional determinants of post-IPO stock performance: evidence from China', *Accounting & Finance* 50(3): 581-603.

Chen, X., Lee, C.W.J. and Li, J. (2008), 'Government assisted earnings management in China', *Journal of Accounting and Public Policy* 27(3): 262–274.

Chen, C., Lee, E., Lobo G. J., Zhu, J. (2019), 'Who Benefits From IFRS Convergence in China?' *Journal of Accounting, Auditing & Finance* 34(1): 99-124.

Cheung, Y.L., Ouyang, Z. and Tan, W. (2009), 'How regulatory changes affect IPO underpricing in China', *China Economic Revie*w 20: 692–702.

Choi, J. J., Sami, H. and Zhou, H. (2010), 'The impacts of state ownership on information asymmetry: evidence from an emerging market', *China Journal of Accounting Research* 3(1): 13–50.

Ding, Y. and Su, X. (2008), 'Implementation of IFRS in a regulated market', *Journal of Accounting and Public Policy* 27(6): 474–479

Hong, H. A., Hung, M. and Lobo, G. J. (2014), 'The impact of mandatory IFRS adoption on IPOs in global capital markets', *The Accounting Review* 89(4): 1365–1397.

Huang, H. W., Lin, S., & Raghunandan, K. (2016). 'The volatility of other comprehensive income and audit fees'. *Accounting Horizons* 30(2), 195-210.

Ibbotson, R., Sindelar, J. and Ritter, J. (1994), 'The market's problems with the pricing of initial public offerings', *Journal of Applied Corporate Finance* 7(1): 66–74.

Lin, Y. H., Lin, S., Fornaro, J. M., & Huang, H. W. S. (2017). 'Fair value measurement and accounting restatements'. *Advances in Accounting* 38, 30-45.

Lin, Z. Jun and Tian, Z. (2012), 'Accounting conservatism and IPO underpricing: China evidence', *Journal of International Accounting, Auditing and Taxation* 21(2): 127–144.

Peng, S. and Smith, J. van der L. (2010), 'Chinese GAAP and IFRS: An analysis of the convergence process', *Journal of International Accounting, Auditing and Taxation* 19(1): 16–34.

Sherman, A.E. (2005), 'Global trends in IPO methods: Book building versus auctions with endogenous entry', *Journal of Financial Economics* 78(3): 615–649.

Shleifer, A. and Vishny, R. W. (1998), *The grabbing hand: Government pathologies and their cures. Cambridge*, Mass: Harvard University Press.

TABLE 1. Descriptive Statistics of All Variables (N=2,666)

Variables	Mean	Median	Std Dev	Min	Max
Underpricing	0.669	0.440	0.646	-0.169	4.768
Post	0.691	1.000	0.462	0.000	1.000
Reputation	0.046	0.031	0.048	0.001	0.471
Bookbuilt	0.659	1.000	0.474	0.000	1.000
Timelag	16.436	12.000	14.989	7.000	194.000
Offersize	0.982	0.669	1.374	0.079	29.387
SOEP	0.173	0.000	0.265	0.000	0.850
FSR	0.049	0.000	0.131	0.000	0.812
Age	4.815	3.532	5.219	0.000	94.394
TA	0.017	0.016	0.060	-0.264	0.324
Leverage	0.492	0.506	0.158	0.057	0.978
ROA	0.141	0.126	0.081	0.009	0.545
STDret	3.289	3.077	1.013	1.227	7.224
Marketstate	0.404	0.554	6.324	-31.621	39.391
Exch	0.381	0.000	0.486	0.000	1.000

TABLE 2. Regression Results of testing H1 and H2

Variables	Pred. Sign	H1	t-value	H2	t-value
Intercept		1.2644***	(11.40)	1.2959***	(11.77)
Post	-	-0.5931***	(-13.62)	-0.5954***	(-13.61)
Reputation	-	-0.4067*	(-1.80)	-0.4003*	(-1.77)
Bookbuilt	-	-0.0936***	(-2.59)	-0.0951***	(-2.62)
Timelag	+	0.0020**	(2.53)	0.0020**	(2.56)
Offersize	-	-0.0565***	(-6.61)	-0.0570***	(-6.63)
SOEP	+	0.1761***	(3.40)	0.1488**	(2.14)
*Post*SOEP*				0.0585	(0.59)
FSR	-	-0.0753	(-0.95)	-0.0746	(-0.94)
Age	-	-0.0034*	(-1.73)	-0.0035*	(-1.76)
TA	-	-0.0803	(-0.45)	-0.0785	(-0.44)
Leverage	-	-0.2164**	(-2.55)	-0.2152**	(-2.54)
ROA	-	-0.7975***	(-4.81)	-0.7861***	(-4.71)
STDret	+	0.0256**	(2.26)	0.0256**	(2.26)
Marketstate	+	0.0115***	(7.09)	0.0115***	(7.11)
Exch		0.0084	(0.36)	0.0076	(0.33)
Industry dummy		Yes		Yes	
n		2,666		2,666	
Adjusted R^2		0.3768		0.3766	
p-value model		<0.0001		<0.0001	

*, **, *** statistical significance at 10 percent, 5 percent and 1 percent levels, respectively.

Variable Definitions:

Underpricing = (first listing-day closing price divided by offer price of an IPO)-1;
Post = indicator variable equal to 1 if an IPO occurs in the post-mandatory IFRS adoption period;
Reputation = each underwriter's total credits (amounts) divided by the year's total;
Bookbuilt = indicator variable equal to 1 for a bookbuilt IPO;
Timelag = number of days between listing day and subscription day;
Offersize = gross proceeds in billions RMB per IPO divided by average offer size of all IPOs in the year;
SOEP = the percentage of state-owned shares of an IPO;
FSR = the foreign shares percentage of an IPO;
Age = natural logarithm of number of days between listing day and setting-up day divided by 360;
TA = net income less cash flows from operations plus depreciation expense deflated by average total assets, and averaged over a 3-year period centered on the year before IPO;
Leverage = average leverage ratio (total liabilities divided by total assets) before listing;
ROA = net income divided by total assets before listing;
STDret = the standard deviation of an IPO stock raw returns;
Marketstate = the cumulative market returns on the A-share index between subscription day and listing day;
Exch = indicator variable equal to 1 if an IPO is listed on the Shanghai Stock Exchange and 0 if it is on the Shenzhen Securities Exchange.