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FINANCIAL ECONOMICS | RESEARCH ARTICLE

Do initial reserves signal long-term IPO stock performance?

Peng Cheng^{1*}

Abstract: This research examines the long-run Initial Public Offerings (IPO) stock performance of a large Chinese sample, and in particular the relationship between initial reserves (capital reserves and revenue reserves immediately after the IPO) and long-run IPO stock performance. In general, Chinese IPOs do not underperform the market/industry benchmarks, but they significantly underperform their size-matched industry peers. More importantly, Chinese IPO firms tend to issue a large amount of bonus shares (also called as a 'capitalization issue', i.e. capitalization of the reserves) after the IPO. Consistent with bonus share signaling hypothesis, Chinese IPO firms exhibit increased operating/stock performance subsequent to bonus issues. Interestingly, the size of the initial reserves is positively associated with long-run IPO stock performance. This research adds another piece of empirical evidence to the literature whether IPOs underperform in the long run, by confirming that the choice of performance measures and benchmarks could affect the conclusion on the IPO long-run performance. Further, it discovers that size of initial reserves could signal superior IPO stock performance in the long run.

Subjects: Corporate Finance; Investment & Securities; Accounting

Keywords: IPOs; long-run stock performance; bonus issues; signaling; China

JEL classifications: G12; G14; G32

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PUBLIC INTEREST STATEMENT

This research is of interest to both academic researchers and public investors, especially those who are interested in the emerging Chinese IPO market. It adds a piece of empirical evidence to the literature whether IPOs underperform in the long term. Contrary to the large body of IPO underperformance literature, which may indicate informational inefficiency and capital misallocation in the IPO market, this study supports that the choice of tests of performance and benchmarks may lead to a different conclusion. Importantly, this research discovers that Chinese IPOs issue a large amount of bonus shares in the post-IPO period, and IPOs with the potential to issue bonus shares (i.e. large initial reserves) perform better in the after-IPO market. So, the research has an investment recommendation for stock investors, as the magnitude of initial reserves could signal superior stock performance in the long run.

1. Introduction

Some prior studies show that IPO firms, although largely underpriced, are likely to underperform in the long run (e.g. Loughran & Ritter, 1995; Ritter, 1991; Teoh, Welch, & Wong, 1998). International evidence from Germany, Holland, Japan, UK, and quite a few other countries seems to support this argument (Cai & Wei, 1997; Levis, 1993; Ljungqvist, 1997; Roosenboom, van der Goot, & Mertens, 2003). If long-run IPO underperformance is true, it may imply an informational inefficiency and capital misallocation, and opportunities with superior trading returns may exist. In this research, I re-examine the long-run stock performance of a large Chinese A-share sample. In particular, I investigate whether the size of initial reserves can signal superior IPO stock performance in the long run. This research could be of interest to both academic researchers and public investors, especially those who are interested in the emerging Chinese IPO market, as the results suggest that Chinese IPOs with large initial reserves are likely to exhibit superior stock performance in the long run.

There is not a consensus on whether IPOs underperform in the long run. Gompers and Lerner (2003) examine pre-1970 US IPOs, and believe that long-run IPO underperformance could just be a small sample bias. More importantly, the choice of long-run performance measures could affect the conclusion (Fama, 1998; Mitchell & Stafford, 2000). Gompers and Lerner (2003) find that Buy and Hold Abnormal Returns (BHARs) method could exaggerate the magnitude of underperformance: e.g. the pre-1970 US sample shows underperformance for BHARs method, but no underperformance for Cumulative Abnormal Returns (CARs) method. Second, prior studies show differences between value-weighted (VW) and equal-weighted (EW) calculations (Ritter & Welch, 2002). Kooli and Suret (2004) and Ahmad-Zaluki, Campbell, and Goodacre (2007) examine Canadian and Malaysian IPOs, respectively, and find significant outperformance for EW calculations and no outperformance for VW calculations. Third, the choice of performance benchmarks is essential, and market-adjusted benchmarks tend to magnify long-run performance: Corhay, Teo, and Tourani Rad (2002) and Tsangarakis (2004) examine Malaysian and Greek market-adjusted CARs/BHARs and come to the conclusion of long-run IPO outperformance.

Chinese IPOs have been examined in prior studies and have shown mixed findings: Cai, Liu, and Mase (2008) and Chan, Wang, and Wei (2004) find that their sample underperforms their matched portfolios. But Chi and Padgett (2005) show that their sample outperforms the market-adjusted benchmarks; Su, Bangassa, and Brookfield (2011) show a significant outperformance in the long run and smaller IPO firms demonstrate superior long-term. Therefore, this research revisits IPO long-run stock performance of a large Chinese sample by adopting multiple performance measures and benchmarks.

More importantly, this study investigates the relationship between the size of IPO initial reserves and long-run stock performance. Chinese IPO firms often show large initial capital reserves, because Chinese IPOs are usually issued at a high price and the price difference between the offer price and nominal value is recognized into the capital reserve (share premium). The share premium is not distributable to shareholders; however, it may be capitalized to make a bonus issue. Further, Chinese IPO firms should report positive earnings in the three pre-IPO years and the pre-IPO profits are often retained to attract IPO investors. Dividends can be paid out of retained profits (revenue reserve) in form of additional bonus shares. Evidently, Chinese IPO firms tend to issue a large amount of bonus shares after the IPO by capitalizing the reserves. Although bonus issues do not result in cash flows, early Chinese firms often signal their private information of future earnings through bonus shares (Cheng, Fung, & Leung, 2009). So, this research examines whether IPO firms with bonus issues exhibit increased operating/stock performance after bonus issues, and whether initial reserves can signal superior long-run stock performance.

This research contributes to the IPO literature in three ways: first, it adds another piece of empirical evidence to the literature whether IPOs underperform in the long term. The result shows that the choice of tests of performance and benchmarks affects the conclusion on the IPO long-run stock performance, as Chinese IPOs do not significantly underperform the market- and industry-adjusted

benchmarks, but underperform the size-matched benchmark. Secondly, this research is so far the only one to investigate the effect of bonus share issues on long-run IPO performance. The finding shows that Chinese IPOs with large bonus issues are likely to outperform. Thirdly, the research has an investment recommendation for investors, as Chinese IPO firms with the potential to issue bonus shares perform better in the long run.

The remainder of the paper is organized as follows: Section 2 presents the literature review and develops the hypothesis; Section 3 introduces the methodology; Section 4 presents the results; and Section 5 draws a conclusion.

2. Literature review and hypothesis

IPO firms normally do not have an external reporting record, so that investors rely heavily on firm-specific disclosures (Aharony, Lin, & Loeb, 1993). In such an environment, IPO firms have an incentive to make managerial disclosures in order to form investors' impressions about IPO firms (Aerts & Cheng, 2011). This is particularly true in Chinese IPO market, due to the under-development nature of the market. Cheng et al. (2009) argue that the minimal CSRC disclosure requirements (China Securities Regulatory Commission and national securities authority) cannot lead Chinese firms to make adequate disclosures, and the information asymmetry between public investors and listed firms is severe. In this vein, Chinese investors respond favorably to some firm signaling policies.

Bonus issue signaling is less costly than other signaling alternatives available to corporate executives. A bonus issue increases the number of shares, and reduces Earnings Per Share (EPS), so that firms with poor earning prospects are not likely to repeatedly issue bonus shares and to show a downward trend in EPS. Further, stock dividends do not result in cash outflows, and retained funds may be useful for re-investments for profits and fuel future growth. These arguments are consistent with earlier negative cash dividend signaling literature (Healy & Palepu, 1988; Michaely, Thaler, & Womack, 1995). In addition, bonus share issues could mitigate the negative price shock caused by a decline in cash dividends (Ghosh & Woolridge, 1988).

Prior empirical evidence on stock dividends indicates that the declaration of stock dividends could lead to a positive stock response (Foster & Vickrey, 1978), and large stock dividends often generate high stock returns (e.g. Cheng et al., 2009; Grinblatt, Masulis, & Titman, 1984; McNichols & Dravid, 1990). Grinblatt et al. (1984) conclude that firms signal their private information concerning their earnings prospects by the use of stock dividends. Further, Elgers and Murray (1985) argue that stock dividends could signal an improvement in earnings performance. In addition, the information content of the split factor is further confirmed by McNichols and Dravid (1990), who argue that investors are likely to respond more favorably to stock dividends with a larger split factor.

Recent Chinese empirical studies suggest that Chinese firms prefer to pay out stock dividends over cash dividends; Chinese market views stock dividends announcements positively with no regard to earnings increase or decrease (e.g. Cheng et al., 2009; Twite, Shi, He, & Li, 2012). Consistent with stock dividend signaling hypothesis (Cheng et al., 2009), Chinese IPO firms may issue bonus shares to signal future operating performance and equity values, so as to reduce the information asymmetry between corporate insiders and public investors. If investors respond positively to the information content of bonus issues, there is a positive relationship between bonus issues and IPO stock performance. So, I hypothesize that the potential to make such a bonus issue, measured by the size of the initial reserves immediately after the IPO, can signal superior stock performance in the long run.

H₁: The long-term IPO stock performance is positively associated with the initial reserves of IPO firms.

3. Methodology

This study investigates the long-run stock performance (five years in post-IPO event time) of Chinese A-share IPOs went public from January 1996 to December 2000. The stock price data are collected from Great Wise®, and the accounting data are from CNINFO CD-ROM (1996–2006). Those firms

without stock prices and accounting information are deleted, and the number of the final sample is cut down to 741. All variables are winsorized at 0.5 and 99.5% percentiles. Variance Inflation Factors (not tabulated) are all less than two.

CARs and BHARs are adopted as the two abnormal stock performance measures, since both of them are widely used (Gompers & Lerner, 2003). Further, by following Ritter (1991), the industry-adjusted Wealth Relative is computed, and a size-matched Wealth Relative is also adopted to control for the size effect (Chan et al., 2004).

CARs and BHARs are the yearly benchmark-adjusted stock returns for a firm i from the first trading day to the event year t ($t = 1, 2, 3, 4, 5$). A event year is 252 successive trading days.

$$CAR_{i,t} = \sum_{s=1}^t (R_{i,s} - R_{m,s}) \tag{1}$$

$$BHAR_{i,t} = \prod_{s=1}^t (1 + R_{i,s}) - \prod_{s=1}^t (1 + R_{m,s}) \tag{2}$$

$$\text{Wealth Relative} = \frac{1 + \text{IPO stock return}}{1 + \text{industry average return}} \tag{3}$$

$$\text{Wealth Relative} = \frac{1 + \text{IPO stock return}}{1 + \text{size matched firm return}} \tag{4}$$

where $R_{i,s}$ and $R_{m,s}$ are the raw return and contemporaneous benchmark return, respectively, of firm i in the event year $Y(s)$ ($s = 1, 2, 3, 4, 5$). The market benchmark return is the value-weighted market index return of all Chinese A-share stocks. An industry benchmark return is the value-weighted industry return of all listed firms classified by the CSRC Standard Industry Classification code (SIC, 2001). Sample IPOs are divided into 22 one-letter-one-digit industry sectors and industry control firms are matched to the sample IPOs with the same one-letter-one-digit SIC (2001) code. Consistent with Barber and Lyon (1997) and Lyon, Barber, and Tsai (1999), a size-matched approach (size-matched CARs and BHARs) is used, by matching the sample firm to the control firm with the closest market capitalization and the same one-letter-one-digit SIC (2001) code.

4. Results

4.1. Long-run IPO stock returns: an overview

Table 1 reports the long-run IPO stock performance, measured by CARs, in five event years. EW- and VW- CARs are both reported. Industry- and market-adjusted EW-CARs are generally higher than zero over the five years after the IPO; however, industry- and market-adjusted VW-CARs are significantly lower than zero over two years or longer. In Panel C, both size-matched EW- and VW-CARs indicate clear underperformance beyond two years subsequent to the IPO. Table 2 reports the EW- and VW-BHARs over five years in event time. Evidently, Table 2 follows the similar pattern of Table 1.

Consistent with Cai et al. (2008) and Chan et al. (2004), Tables 1 and 2 support that Chinese IPOs are likely to underperform their size-matched industry peers in the long run. However, Chinese IPOs do not seem to significantly underperform the market- and industry-adjusted benchmarks. Secondly, consistent with prior literature (Fama, 1998; Mitchell & Stafford, 2000), BHARs are evidently lower than CARs and may magnify underperformance. Thirdly, consistent with Ahmad-Zaluki et al. (2007), Kooli and Suret (2004), the choice between EW and VW portfolios leads to different results. Taken together, the choice of performance measures (EW or VW, CARs or BHARs) and benchmarks (market index, industry average, and size-matched firm) could substantially affect the conclusion.

Table 1. Aftermarket performance—CARs

| Event year | CAR (EW) (%) | t-statistic | CAR (VW) (%) | t-statistic |
|---------------------------------|--------------|-------------|--------------|-------------|
| Panel A: Industry-adjusted CARs | | | | |
| 1 | -0.4 | -0.3 | 1.2 | 1.0 |
| 2 | 2.3 | 1.3 | -1.1 | -0.6 |
| 3 | 1.3 | 0.6 | -6.1** | -2.9 |
| 4 | 1.1 | 0.4 | -6.5** | -2.7 |
| 5 | 2.9 | 1.1 | -5.2* | -1.9 |
| Panel B: Market-adjusted CARs | | | | |
| 1 | -0.2 | -0.1 | 1.3 | 1.0 |
| 2 | 3.2* | 1.8 | 0.6 | 0.3 |
| 3 | 5.5** | 2.5 | -2.6 | -1.2 |
| 4 | 3.5 | 1.4 | -7.6** | -3.0 |
| 5 | 5.3* | 1.9 | -8.5** | -3.0 |
| Panel C: Size-matched CARs | | | | |
| 1 | 0.2 | 0.1 | -0.4 | -0.2 |
| 2 | -4.3* | -1.7 | -5.0* | -2.0 |
| 3 | -12.5*** | -4.1 | -12.8*** | -4.2 |
| 4 | -18.9*** | -5.4 | -15.1*** | -4.3 |
| 5 | -20.0*** | -5.1 | -14.4*** | -3.6 |

Notes: One, two, and three asterisks indicate significance at the 5, 1, and 0.1% level or better (1-tailed), respectively.

Table 2. Aftermarket performance—BHARs

| Event year | BHAR (EW) (%) | t-statistic | BHAR (VW) (%) | t-statistic |
|----------------------------------|---------------|-------------|---------------|-------------|
| Panel A: Industry-adjusted BHARs | | | | |
| 1 | -0.4 | -0.3 | 1.2 | 1.0 |
| 2 | 1.6 | 0.9 | -2.6 | -1.5 |
| 3 | -1.4 | -0.7 | -8.9*** | -4.3 |
| 4 | -5.6* | -2.3 | -15.0*** | -6.3 |
| 5 | -0.6 | -0.2 | -13.1*** | -4.9 |
| Panel B: Market-adjusted BHARs | | | | |
| 1 | -0.2 | 1.0 | 1.3 | 1.0 |
| 2 | 2.5 | 1.4 | -0.7 | -0.4 |
| 3 | 4.4* | 2.0 | -4.1* | -1.9 |
| 4 | 2.2 | 0.9 | -10.8*** | -4.3 |
| 5 | 5.1* | 1.8 | -12.9*** | -4.6 |
| Panel C: Size-matched BHARs | | | | |
| 1 | 0.2 | 0.1 | -0.4 | -0.2 |
| 2 | -5.8* | -2.3 | -5.4** | -2.7 |
| 3 | -17.0*** | -5.6 | -15.0*** | -4.9 |
| 4 | -24.4*** | -6.9 | -17.4*** | -4.9 |
| 5 | -26.9*** | -6.8 | -16.7*** | -4.2 |

Notes: One, two, and three asterisks indicate significance at the 5, 1, and 0.1% level or better (1-tailed), respectively.

Table 3 presents Wealth Relatives (Ritter, 1991) for a holding period from 1 to 5 years. A Wealth Relative of below 1 indicates that IPOs underperform their industry- and/or size-matched benchmarks. Table 3 further confirms the findings on long-run IPO performance from Tables 1 and 2:

Table 3. Aftermarket performance—Wealth Relatives (Ritter, 1991)

| Holding period | Wealth relative (industry adjusted) | Wealth relative (size matched) |
|----------------|-------------------------------------|--------------------------------|
| 1-year | 1.01 | 1.00 |
| 2-year | 1.02 | 0.96 |
| 3-year | 1.01 | 0.89 |
| 4-year | 0.98 | 0.86 |
| 5-year | 1.00 | 0.82 |

sample IPOs as a whole do not seem to outperform or underperform the industry benchmarks, but underperform their size-matched industry peers. Industry-adjusted Wealth Relatives change slightly around 1 from a 1-year holding period to a 5-year holding period, but size-matched Wealth Relatives decrease steadily to 0.86 over a 5-year holding period, suggesting IPO underperformance in the long run.

4.2. Post-IPO bonus issues and signaling

Table 4 shows that 536 IPO firms (72.3% of the 741 firms) issue bonus shares at least once in the five post-IPO years, suggesting that most Chinese IPO firms tend to make bonus issues in the post-IPO period. Further data investigation (not tabulated) shows that there are 315 bonus issues made in the first event year after the IPO, and the number of bonus issues and the amount of bonus shares issued each year steadily decrease in the later event years. It suggests that Chinese IPO firms tend to issue a large amount of bonus shares in the post-IPO period, especially the first two years after the IPO.

Table 5 (Panel A) presents operating performance changes (Sales Growth and ROE) from before to after the bonus issue year. Evidently, IPO firms issuing bonus shares (based on 905 bonus issues) are likely to report slightly increased operating performance (both profitability and sales growth) relative to their size-matched industry peers, suggesting that bonus shares may convey a signaling message of increased future operating performance. Table 5 (Panel B) presents the stock return response to the announcement of 905 bonus issues. The post-announcement stock return is the size-matched BHAR for a 1-year holding period. The result shows that the median BHAR after bonus issue announcement is 5.7%, significant at 0.1% level. This finding is consistent with prior literature (Cheng et al., 2009; Twite et al., 2012) that Chinese stock market responds to stock dividend announcements positively.

4.3. Relationship between initial reserves and long-run IPO stock returns

The relationship between the size of initial reserves and long-run IPO stock performance is examined in a regression analysis. Table 6A shows that the size of initial reserves is associated with 1-year IPO stock performance at 0.1% significance level, but the significance level goes down to 5% level for the 4-year hold period regression. It suggests that IPOs with larger initial reserves exhibit superior stock performance in the long run (up to four years in event time), and size of initial reserves may signal superior long-run IPO stock performance. However, the valuation effect tends to be much weaker for the longer event time. The finding supports the hypothesis H_1 .

Table 4. The number of bonus issues made by IPO firms in the five post-IPO years

| | Total sample | Firms without bonus issue | Firms with one bonus issue | Firms with two bonus issues | Firms with three bonus issues | Firms with four or more issues |
|-----------------|--------------|---------------------------|----------------------------|-----------------------------|-------------------------------|--------------------------------|
| Number of firms | 741 | 205 | 266 | 192 | 63 | 15 |
| Percentage | 100% | 27.7% | 35.9% | 25.9% | 8.5% | 2.0% |

Table 5. Post-announcement (bonus issues) stock/operating performance

| Panel A: Operating performance after bonus issues | | | | | | | | |
|--|--|------------------|-----------------|----------------|----------------|----------------|----------------|----------------|
| | Measures | Financial year | Mean | 10% percentile | 25% percentile | 50% percentile | 75% percentile | 90% percentile |
| 905 bonus issues made by 741 IPO firms | Size-matched sales growth | One year before | 14.7%*** (7.55) | -26.2 | -8.2 | 4.2%*** (6.59) | 29.7 | 57.3 |
| | | Bonus issue year | 16.2%*** (9.41) | -22.6 | -8.6 | 5.1%*** (8.58) | 28.6 | 59.9 |
| | | One year after | 18.0%*** (5.82) | -31.0 | -11.3 | 4.9%*** (6.66) | 28.2 | 59.5 |
| | Size-matched ROE | One year before | 1.0%* (2.21) | -3.8 | -1.0 | 0.6%*** (6.25) | 3.2 | 8.4 |
| | | Bonus issue year | 1.0% (1.60) | -3.6 | -1.0 | 0.8%*** (9.24) | 4.3 | 8.4 |
| | | One year after | 1.1%** (2.96) | -5.4 | -1.3 | 0.8%*** (7.18) | 4.7 | 9.4 |
| Panel B: Stock performance (BHAR) after bonus issues | | | | | | | | |
| | Measure | Mean | 10% percentile | 25% percentile | 50% percentile | 75% percentile | 90% percentile | |
| 905 bonus issues | One-year post-announcement BHAR (size-matched) | 15.4%*** (7.92) | -34.7 | -17.0 | 5.7%*** (6.55) | 36.2 | 70.8 | |

Notes: One, two, and three asterisks indicate significance at the 5, 1, and 0.1% level or better (1-tailed), respectively. Mean *t*-test statistics and median Wilcoxon signed-rank test statistics are in parentheses.

Then, this research investigates whether operating performance moderates the relationship between initial reserves and long-run IPO stock performance. Hypothetically speaking, investors may value initial reserves more favorably when firm operating performance is better. Table 6B examines the interactive effect between size of initial reserves and firm characteristics (firm size, profitability, and sales growth) on long-run IPO stock performance. The size-matched Wealth Relative is regressed on the size of initial reserves and firm characteristics as well as interactive terms between initial reserves and firm characteristics. Table 6B confirms that interactive terms between initial reserves and operating performance (either ROE or Sales Growth) are positive and generally significant at 5% level or better. It suggests that investors apply different wealth premiums to initial reserves if operating performance of IPO firms is varying. The relationship between long-run IPO stock performance and initial reserves becomes stronger when IPO firms report superior operating performance.

Figure 1 demonstrates the signaling effect of initial reserves on long-run IPO stock performance over five IPO event years. The full sample (741 firms) is segregated into four portfolios by the size of initial reserves. The stock performance is the median value of size-matched Wealth Relatives (Ritter, 1991) for each of the four portfolios. Figure 1 confirms that IPO long-run stock performance is clearly associated with initial reserves: the IPO portfolio with the largest initial reserves is likely to outperform its size-matched peer group over the five years; while the portfolios with smaller initial reserves perform badly in the IPO aftermarket period.

Finally, two robustness checks have been conducted (not tabulated): first, all variables are winsorized at 1% and/or 5% levels on both tails in order to control for the effect of outliers. Second, long-run IPO stock performance is measured as industry-adjusted CARs/BHARs and/or size-matched CARs/BHARs. The regressions results remain qualitatively unchanged.

5. Discussions and conclusions

This research examines the long-run stock performance of a large Chinese IPO sample. Based on value-weighted (and/or equal-weighted) CARs, BHARs, and Wealth Relatives (Ritter, 1991) adjusted by multiple benchmarks (market index, industry average, and size-matched industry peers),

Table 6A. The size of initial reserves and long-run IPO stock performance

$$\text{Performance}_{i,t} = \beta_0 + \text{Initial Reserves}_i + \text{Size}_i + \text{Sales Growth}_{i,t} + \text{ROE}_{i,t} + \text{HiTech}_i + \text{Energy}_i + \text{Year Dummy}_i + \varepsilon_{i,t} \quad (5)$$

| | Expected Sign | 1-year holding performance | 2-year holding performance | 3-year holding performance | 4-year holding performance | 5-year holding performance |
|--------------------------|---------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Size of initial reserves | + | 0.043*** (4.58) | 0.030*** (3.48) | 0.024** (3.02) | 0.016* (2.23) | 0.003 (1.30) |
| Firm Size | - | -0.048 (-1.18) | -0.053 (-1.11) | -0.162** (-2.40) | -0.023 (-1.10) | 0.014 (1.00) |
| Sales growth | + | 0.191** (3.04) | 0.267*** (3.42) | 0.261** (2.56) | 0.200* (2.21) | 0.213* (1.70) |
| ROE | + | 1.012*** (3.87) | 0.783** (2.72) | 1.121*** (4.32) | 0.875*** (3.19) | 0.743** (2.53) |
| Hi-Tech | +/- | 0.034 (0.58) | 0.027 (0.38) | 0.036 (0.53) | -0.016 (-0.44) | -0.168* (-1.75) |
| Energy | +/- | 0.077 (0.26) | -0.158 (-1.56) | -0.143 (-1.27) | 0.109 (0.30) | -0.067 (-0.48) |
| Year dummies | +/- | Included | Included | Included | Included | Included |
| Intercept | +/- | Included | Included | Included | Included | Included |
| R ² | | 13.2% | 16.2% | 17.2% | 17.9% | 17.1% |
| Adjusted R ² | | 13.1% | 14.8% | 14.2% | 16.8% | 14.4% |
| F Statistic | | 12.08 | 12.67 | 13.92 | 14.12 | 11.11 |
| Observations | | 741 | | | | |

| Variables | |
|--|--|
| Long-run IPO stock performance | Size-matched Wealth Relatives (Ritter, 1991) in IPO event year t ($t = 1, 2, 3, 4, 5$ respectively) |
| The size of initial reserves | The total amount of capital/revenue reserves scaled by equity immediately after the IPO, net of the contemporaneous figure of the size-matched peers |
| Firm size | The natural logarithm initial market capitalization at the end of the first trading day |
| Sales growth | The average yearly sales growth ratio reported from the IPO year to the event year t net of the contemporaneous figure of the size-matched peers |
| ROE (net income scaled by equity) | The average yearly ROE reported from the IPO year to the event year t net of the contemporaneous figure of the size-matched peers |
| Two industry dummies | Hi-tech IT industry dummy and integrated oil/gas industry dummy |
| 4 year dummies (for the IPO year 1996, 1997, 1998, and 1999, respectively) | e.g. Year dummy 1996 takes the value of 1 if the IPO is offered in the year 1996, 0 otherwise |

Notes: One, two, and three asterisks indicate significance at the 5, 1, and 0.1% level or better (1-tailed if sign predicted), respectively. The t -statistics are in parentheses.

Chinese IPOs, as a whole, do not seem to outperform or underperform the market/industry benchmarks, but they significantly underperform their size-matched industry peers. I support prior literature (Fama, 1998; Gompers & Lerner, 2003; Mitchell & Stafford, 2000; Ritter & Welch, 2002) that the choice of long-horizon performance measures and the choice of benchmarks may lead to a different conclusion.

Importantly, my finding shows that Chinese IPO firms tend to issue a large amount of bonus shares in the post-IPO years, and operating performance is slightly enhanced after the bonus issues. Interestingly, long-run IPO stock performance is positively associated with the potential to issue bonus shares, measured by the size of initial reserve accounts. The positive association becomes stronger for IPO firms reporting better operating performance, suggesting that investors respond favorably to large initial reserves, especially for IPO firms with better operating performance. The finding suggests that size of initial reserves signals superior IPO stock performance in the long run, and IPOs with large initial reserves are likely to outperform.

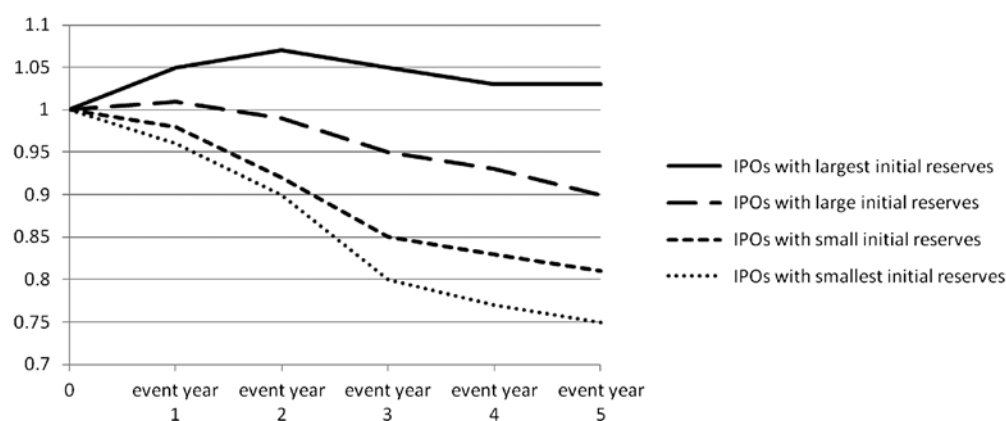
Bonus share signaling hypothesis could support the empirical results above. An IPO environment is typically characterized with an information asymmetry between informed insiders and uninformed investors, especially for Chinese IPO market (Aerts & Cheng, 2011). Due to the underdevelopment

Table 6B. Interactive effect (initial reserves and firm characteristics) on IPO stock performance

$$\text{Performance}_{i,t} = \beta_0 + \text{Size}_i + \text{Sales Growth}_{i,t} + \text{ROE}_{i,t} + \text{Initial Reserves}_i + \text{Size}_i \times \text{Initial Reserves}_i + \text{ROE}_{i,t} \times \text{Initial Reserves}_i + \text{Sales Growth}_{i,t} \times \text{Initial Reserves}_i + \text{HiTech}_i + \text{Energy}_i + \text{Year Dummy}_i + \varepsilon_{i,t} \quad (6)$$

| | Expected sign | 1-year holding performance | 2-year holding performance | 3-year holding performance | 4-year holding performance | 5-year holding performance |
|--|---------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Firm size | - | -0.034 (-1.24) | -0.066 (-1.11) | -0.183** (-2.47) | -0.025 (-1.01) | 0.055 (0.45) |
| Sales growth | + | 0.128* (2.11) | 0.254** (2.67) | 0.236* (2.09) | 0.233* (2.21) | 0.247* (1.82) |
| ROE | + | 1.184*** (4.47) | 0.876*** (3.23) | 1.412*** (4.65) | 1.149*** (4.33) | 1.217*** (3.13) |
| Initial reserves | + | 0.054*** (4.11) | 0.034*** (3.20) | 0.027** (2.68) | 0.024* (2.10) | 0.009 (1.20) |
| Interaction term 1 (size × initial reserves) | - | 0.012 (0.54) | 0.021 (0.49) | 0.015 (0.92) | 0.021 (0.19) | 0.041 (0.10) |
| Interaction term 2 (ROE × initial reserves) | + | 0.334*** (3.47) | 0.219** (2.88) | 0.144* (2.03) | 0.102* (2.09) | 0.004 (1.47) |
| Interaction term 3 (SG × initial reserves) | + | 0.237*** (3.33) | 0.201*** (3.47) | 0.111** (2.59) | 0.184* (2.05) | 0.107 (1.46) |
| Hi-Tech | +/- | 0.012 (0.58) | 0.021 (0.56) | 0.002 (0.53) | -0.032 (-0.34) | -0.013 (-0.69) |
| Energy | +/- | 0.009 (0.48) | 0.032 (0.98) | 0.049 (0.34) | 0.014 (0.24) | -0.017 (-0.24) |
| Year dummies | +/- | Included | Included | Included | Included | Included |
| Intercept | +/- | Included | Included | Included | Included | Included |
| R ² | | 15.1% | 17.5% | 17.3% | 18.9% | 17.1% |
| Adjusted R ² | | 14.7% | 16.3% | 14.2% | 17.4% | 15.8% |
| F Statistic | | 13.62 | 12.83 | 12.45 | 12.82 | 11.72 |
| Observations | | 741 | | | | |

Figure 1. IPO long-run stock performance and size of initial reserves.



nature of Chinese market, Chinese managers may signal their private information through bonus issues decisions so as to enhance stock prices and to alleviate the information asymmetry between informed insiders and public investors (Cheng et al., 2009). Therefore, IPO firms with large initial reserves are more able to use bonus issues decisions to convey their private information about equity values.

In addition, attention-driven buying hypothesis (Barber & Odean, 2008) may be a second possible explanation. Investors often choose to buy attention-grabbing stocks, and bonus issues with a large split factor may be taken as a sign of ‘glamour’ stocks, and attention-driven buying may push stock

prices higher. Twite et al. (2012) also support that the use of stock dividends could attract the market attention and analyst following, so as to lead to higher stock valuations (Lang, Lins, & Miller, 2004). If so, bonus issues made by Chinese IPO firms may attract market attention and strengthen stock prices.

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