UNIVERSITY OF FORWARD THINKING WESTMINSTER

An Empirical Analysis of the Performance of Sponsored versus Non-Sponsored IPOs:Evidence from India

Sivaprasad, S. and Dadhaniya, R.

The final, published version in Journal of Accounting in Emerging Economies, DOI: 10.1108/JAEE-05-2019-0100, 2019 is available at:

https://dx.doi.org/10.1108/JAEE-05-2019-0100

Purpose (mandatory)
India is one of the largest IPO markets in the world. However, IPO research in the developing world is limited. The primary objective of this study is to test the performance of Indian IPOs based on sponsored versus non-sponsored issues. We classify the IPO sample into venture capital (VC) and private equity (PE) sponsored issues and non-sponsored ones and include key operating characteristics as performance predictors.

Design/methodology/approach (mandatory)
The dependent variable is the buy and hold abnormal returns (BHARs). The study uses key operating characteristics such as market capitalization, net sales, EBITDA, depreciation and amortization, price-to-book, asset turnover and leverage. A cross sectional analysis is applied to test the long run performance.

Findings (mandatory)
Sponsored IPO issues convey favourable information to investors about future earnings and prospects of the firm. Our findings indicate that sponsored issues and, in particular PE sponsored issues are perceived by investors as having a positive impact on the operational performance of firms that the PE firms are involved in relative to the constituents of the index and this superior operational performance over time also leads to relatively better performing share prices. There are significant differences in terms of market size, industry classification and key operating characteristics across the three groups of issues.

Research limitations/implications
This study has had to deal with much smaller samples of PE and VC when compared to similar studies conducted in the developed markets such as UK and US. Further robustness tests on the market performance using factor models posed a problem due to limitation of the availability of these factors.

Practical implications
For the capital markets investors and policy makers, this research demonstrates the increasingly important role that private equity and venture capital funds play in the investment landscape in India. It exhibits the increasing investor confidence in the Indian capital markets.

Originality/value (mandatory)
Using a sample of Indian IPOs comprising VC-sponsored and PE-sponsored issues, this study analyses the performance of Indian IPOs in an emerging market setting. This study, thus, contributes to the limited IPO research undertaken in developing markets.

JEL Code: G10, G23, G24

Keywords: IPOs; Sponsored issues; Private Equity; Venture Capital; Performance

1. Introduction

India is one of the leading and popular emerging market destinations for investments. In 2018, India was ranked first in terms of IPO volume (EY Global Trends Report,2018). However, IPO research in the developing world is limited. The primary objective of this study is to test the performance of Indian IPOs based on sponsored versus non-sponsored issues. This study examines if venture capital and private equity sponsored IPOs perform better than non-sponsored IPOs in India, and, therefore, whether sponsored issues are perceived by investors as an indicator of future superior performance and a high-quality investment for the Indian IPO market. Previous literature (Nahata, 2008; Harris, Jenkinson and Kaplan, 2014) show that private equity (PE, henceforth) and venture capital (VC, henceforth) firms have a reputation to preserve and require superior transparency standards and practices. Thus, we hypothesize that sponsored issues are well prepared to go public and perform well after the issue. This is not necessarily the case for non-sponsored issues. This study seeks to extend our understanding of Indian IPOs from a different perspective by classifying the IPO issues as per their sponsorships i.e. VC and PE sponsored issues and examining their performance respectively. We also investigate which of the sponsored issues i.e. VC or PE sponsored perform better.

This study is a relevant issue in an emerging market such as India. Since the liberalization reforms of 1992, the Indian capital market has evolved tremendously (Saith, 2008, Sayed, 2017; Dayanandan and Sra, 2018; Tiwari and Vidyarthi,2018). Indian investors, regulators and government introduced and adopted various measures to improve the institutional settings[1] in the country (Wadhwa and Reddy, 2018; Saith, 2008). Indian capital markets are regulated and monitored by the Ministry of Finance (MoF), The Securities and Exchange Board of India (SEBI) and the central bank of India, Reserve Bank of India (RBI). Institutional investors[2] play an important role in developing markets globally and India is no exception. The number of stock exchanges[3], new issues[4], trading

[1] The Insolvency and Bankruptcy Board of India was established under the Insolvency and Bankruptcy Code.
[2] Institutional monies in India are regulated by Insurance Regulatory and Development Authority (IRDA), Pension Fund Regulatory and Development Authority (PFRDA), SEBI and RBI.
[3] The National Stock Exchange (NSE) launched the first electronic screen-based trading in 1994, derivatives trading (in the form of index futures) and internet trading in 2000.
[4] For an overall view on the Indian IPO market and institutional characteristics since liberalization reforms of 1992, pls see Krishnamurti and Kumar (2002).

volumes, sponsors are few of the changes that can be observed in the Indian capital markets. With liberalization, the Indian corporate sector began to raise capital from the primary markets to meet their various objectives. Didier and Schmukler (2013) find that the Indian financial system has developed rapidly and evolved deeply. For example, they find that the stock market capitalization increased from 22 percent in India in 1992 to 95 percent of GDP in 2015. A robust institutional environment and favourable economic indicators allowed India to benefit from international liquidity since 1991, and its stock market boomed.

Due to the phenomenal growth of India after the liberalization reforms in 1992, venture capital and private equity have emerged as key players in the Indian investment landscape. Private equity is a significant contributor to India's economic growth. Between 2003 and 2017, their investment was more than $97 billion in the Indian economy (Mckinsey Report, 2018). In 2017, the total PE deal value was the highest ever in India- about $26.4 billion vs. $16.8 billion in 2016. The investment value increased by 57% (Bain Consulting Report, 2018). Private equity inflows have remained strong, even as India's GDP growth rates plunged from a peak of 9.6 per cent in 2007 to 4.7 per cent in 2014 amid high market volatility (Mckinsey Report ,2018). Venture capital plays a vital role in the development and growth of innovative entrepreneurships and high growth start-ups. In the past (prior to 1991), VC activity was carried out by the developmental financial institutions such as State Financial Corporations (SFC). Currently, the venture capital and private equity firms are primarily private entities. In 2018, VC deals crossed 697 deals and worth more than $6.55 billion (Bain Consulting, 2018). The Indian Government recognises the role that VC and PE play in the Indian economy. They have introduced reforms such as exempting these entities from IPO lock-ups; clarity of tax classification for Authorized Investment Funds (AIF), minimizing discretion; allowing these entities with foreign capital to be classified as domestic capital (completely removing FDI and pricing regulations), provided the fund manager is domestic owned and controlled (Preqin 2019).

Despite the positive impact that PE and VC have on the Indian economy, one of the main challenges that they face is their narrow exit options. Espenlaub, Khurshed and Mohamed (2015), Liao, Lu and Wang (2014) find that IPOs is a popular exit route for VC

and PE firms for investments made abroad. In India, IPOs remain a regular exit route to both PE and VC firms (McKinsey Report,2018), an avenue that was non-existent before 1991. The PE model highlights strict monitoring, experience of the top management and high levels of debt which in turn leads to improved operational efficiencies in the post IPO performance (Johan and Zhang,2016). PE sponsors take responsibility for the terms, structure and time of the issue, offering a wider perspective (Weisman, 1996). Zhang and Pezeshkan (2015) argue how industry experience and social networks are key to the success of the private equity industry. Any investments by VC firms are expected to create and add value through their strict and continuous monitoring and continued involvement and association with the firms (Raghupathy and Thillairajan, 2015). The key difference between the two investment vehicles is that VC firms tend to normally invest in new start-ups and use mainly equity. On the other hand, PE firms tend to buy mature firms across all sectors and use a combination of debt and equity. In 2017, Indian stock exchanges ranked second globally in terms of the number of IPOs (EY Global Trend Report, 2017). Given that IPO remains an important exit route for VC and PE, the purpose of this study is to examine the performance of Indian IPOs based on issues sponsored by PE and VC to that of non-sponsored issues.

Our paper contributes to the existing literature in the following ways: First, it contributes to the limited IPO research undertaken in the developing world by providing econometric analyses of the performance of Indian IPOs based on sponsored versus unsponsored issues. To the best of our knowledge, Raghupathy et al., (2015) and Gohil and Vyas (2015) are the only ones who provide an analysis of VC and PE sponsored issues respectively. However, Raghupathy et al., (2015) examine only VC sponsored issues and conclude that VC sponsored issues outperform unsponsored issues. Their study does not consider PE backed issues. Similarly, Gohil et al., (2015) investigate PE sponsored issues and find that PE sponsored issues outperform non-sponsored issues, but they do not consider VC backed issues. We argue that since the primary aim of this study is to analyse the performance of all sponsored Indian IPO issues, it is imperative to include both VC and PE sponsored issues in the same sample. This study undertakes a comprehensive and combined analysis of both PE and VC sponsored issues over non-sponsored issues, thus offering a detailed analysis of performance of IPOs from a sponsored versus unsponsored angle. Secondly, previous studies that examine sponsored

issues in India do not consider characteristics of the firms prior to listing. Levis (2011), Smolarski, Wilner and Yang (2011) and Groh, Liechtenstein and Lieser(2010) argue that IPO performance may be predictable based on various characteristics of the firms. This study offers evidence on key differences in the operating characteristics of the firms prior to listing when we classify our IPO sample into three sets, namely PE sponsored, VC sponsored and other non-sponsored (NS) IPOs. Finally, the findings of this paper also present another perspective on the underperformance of IPOs by examining the classification of the overall IPO sample in terms of VC and PE sponsored and non-sponsored issuances from a developing economy outlook.

Our results show that while abnormal buy-and-hold returns of PE-sponsored IPOs remain positive and significant during the entire period under consideration, the performance of the VC sponsored is consistently poorer or negative. Next, the paper tests the relationship patterns between the performance of the firms and the various features of firms' operational characteristics after the listing. The findings of the regression analysis indicate that significant distinctions exist in respect of returns, market capitalization and firm characteristics amongst the three sets of IPOs.

The paper is organised as follows. Section 2 provides an overview of IPO literature Section 3 describes the data and methods used in this study. Section 4 focuses on the distribution across the three sets of IPOs. Section 5 outlines the empirical findings. Finally, Section 6 presents the conclusions of the paper.

2. Related Literature

Extensive research tests the short run and long run performance of IPOs (Loughran and Ritter, 1995; Jenkinson and Jones, 2009; Ang and Boyer, 2009; Lewellyn and Bao, 2014). Previous research in the USA markets (Brav, Geczy and Gompers, 2000), UK (Levis, 1993; Goergen, Khurshed, A and Mudambi, 2007) and other international markets (Lee, Taylor and Walter, 1996; Kooli and Suret ,2004; Killins and Egly, 2018) find similar findings of IPO under-performance. Evidence of underperformance is prevalent in the emerging economies as well (Kiymaz, 2000; Hensler, Herrera and Lockwood, 2000; Smith and Chun, 2003; Naifar,2011; Otchere and Vong, 2016). Most of these studies suggest positive returns in the short run and significant underperformance in the aftermarket. One of the several reasons put forward to this phenomenon of underperformance is the

characteristics of the issues, information asymmetries or their sponsors (Johan and Zhang, 2016; Levis, 2011; Kirkulak, 2008; Phylaktis, 2009).

Studies show that PE sponsored IPOs report higher earnings and better management reflecting on the performance at the stock market demonstrating positive abnormal long run returns (Katz, 2009). Katz (2009) and Levis (2011) report that PE investors have the benefit of a greater involvement in the issuing firm's management compared to venture capital firms and an increased level of financial expertise that non-sponsored firm owners do not have. Firms with greater PE sponsor ownership have better long run stock price returns and firms that are run by larger PE sponsors have better performance in the long term when they go afloat in the stock market. Bergstrom, Nilsson and. Wahlberg (2006) find that PE sponsored IPOs outperform in France and UK but both samples show negative abnormal performance for five years from going public. Minardi, Ferrari and AraújoTavares (2013) find that PE sponsored IPOs in the Brazilian stock market have a superior performance relative to non-PE sponsored IPOs. Brav and Gompers (1997) argue that VC sponsored IPOs usually have better management structures and corporate governance leading to better long run performance comparing them to non-sponsored IPOs. Campbell and Frye (2009) argue that VC sponsored issues perform better because of reduced asymmetry of information and large shareholdings thus improving the long run returns. Suchard (2009) find that low or no VC involvement leads to underperformance in the stock market. Similarly, Givoly and Shi (2008) find that issues with VC backing tend to have lower IPO under-pricing. Otchere and Vong (2016) find that in China, VC-sponsored IPOs perform significantly better. Based on these previous studies, we argue that in order to examine the short-term and long-term performance of sponsored IPOs, it would be imperative and necessary to make a distinction of the sponsors in the IPO issues (Levis, 2011; Kirkulak, 2008; Phylaktis, 2009).

2.1 IPOs, Venture Capital and Private Equity in the Indian context

IPO under-pricing is a phenomenon which is also researched widely in India (Krishnamurti and Kumar, 2002; Ghosh, 2005; Subrahmanyam and Marisetty ,2010; Bansal and Khanna, 2013; Shette, Kuntluru and Korivi, 2016). Bhatia and Singh (2012) analyse 648 IPOs firms listed on the Bombay Stock Exchange (thereafter, BSE) and find high short run returns. Additionally, Jaitley (2004) analyse short term performance of IPOs

in the Indian stock exchange after the deregulation of the market. The results show that the expectations of the removal of restrictions is affected by lower returns to investors and in turn lower cost of capital to the issuing firms (Rock, 1986). Dhamija and Arora (2014) analyse the importance of the newly introduced IPO grading as an additional tool for retail investors to make investment decisions. They find that highly graded IPOs did not perform better in the national stock market. On the other hand, they report that superior grading reduces under-pricing and attracted more responses from investors (Sahoo, 2014). India is the only country that releases information on the IPO book-building[5] process live to investors (Khurshed, Paleari, Pande, A and Vismara, 2014 and Clarke, Khurshed, Pande and Singh, 2016). Neupane, Paudyal and Thapa (2014) find that institutional investors in the Indian IPO market focus more on firm quality when deciding to invest in new shares. Khurshed et.al (2014) examine the performance of IPOs with book building in the Indian market. They find that IPOs with low and high premiums were insignificant in under-pricing, but IPOs issued with low premiums are usually under-priced despite having consistent returns after the issue. These findings support the results of Krishnamurti and Kumar (2002). Sahoo (2015) examines the relation between subscription rate and aftermarket volatility for IPOs and find that subscription rate is a good indicator of aftermarket volatility for the IPO stocks.

However, none of these studies makes a distinction on the type of investors, i.e. VC and PE sponsored IPOs in their analysis. We argue that it is important to make a distinction on the type of investor involvement when investigating the performance of IPOs as their involvement may have an impact on the performance. Raghupathy et al., (2015) find superior performance of VC sponsored IPOs. However, their sample does not distinguish PE sponsored issues. Similarly, Gohil et al., (2015) find that PE backed issues outperform non-sponsored issues. However, once again, they do not consider VC sponsored issues in their analysis. Since PE and VC are key players in the Indian capital markets and IPOs is a popular exit option, it is necessary to distinguish between the two sponsored issues when analysing their performance.

[5] See Khurshed et al., 2014

To our knowledge, no studies till date have examined a comparative and combined analysis of the performance of VC, PE sponsored issues versus non- sponsored IPOs in the Indian setting.

3. Materials and Methods

3.1 Data

The source of our data is Bloomberg[6]. This study uses data on the IPO issues listed on the Bombay Stock Exchange 500 (thereafter, BSE 500) for the period 2006[7] to 2018. For the purpose of this study, sponsored IPO issues of VC[8] and PE are identified as per the definition in Bloomberg. The sample consists of 382 IPOs listed on the BSE 500 comprising of 268 non-sponsored (thereafter, NS), 50 VC sponsored, and 64 PE sponsored. The financial liberalization drive allowed for the existence of alternative investments in India only from 2006 onwards (Ghosh, 2005). The BSE 500 Index was chosen as an appropriate index as it represents 93% of the market capitalization on the Bombay stock market posing a more accurate measure (Lalwani and Chakraborthy,2018).

3.2 Dependent Variable

The dependent variable in this study is the buy and hold abnormal returns[9] (BHARs, thereafter). For each issue, BHARs are estimated by compounding 36 month returns after the first month of trading, based on daily returns and is calculated as follows:

$$BHAR = \frac{1}{N}\sum_{I=1}^{N}[(\prod_{t=1}^{T}(1+r_{it})) - (\prod_{t=1}^{T}(1+r_{bt}))]$$

Where, r_{it} and r_{bt} are the raw returns on IPO *i* and the selected benchmark *b* at month *t*.

3.3 Operating Characteristics

Following Minardi et al., (2013), this study includes firm operating characteristics such as market capitalization, net sales, earnings before interest, taxes, depreciation and

[6] Bloomberg is a real time financial data software terminal enabling users to download, view and analyse. Data is available for all countries and government and forecasts also given. It allows users to trade equities, bonds and other financial asset classes

[7] The first VC sponsored IPO occurred in 2006.

[8] Following Levis (2011), a VC sponsored IPO is identified as a firm that receives start up, developing or expansion support before going public. Venture capitalists normally have a minority interest. On the other hand, a PE sponsored IPO is a firm where a sponsor holds a controlling interest attained at the time of a buyout. VC and PE firms would then choose IPO as an exit route and sell their entire stake.

[9] Following Ritter (1991), BHARs is arguably the preferred measure for analysing investment performance.Hence this study follows the same argument.

amortization, price-to-book, asset turnover and leverage. Market capitalization is calculated by multiplying shares outstanding by the current market price of each share. The investment community uses this figure to determine a company's size, as opposed to sales or total asset figures (Pandey and Sehgal,2016). Net sales are the amount of sales generated by a company after the deduction of returns, allowances for damaged or missing goods and any discounts allowed. Earnings before interest, taxes, depreciation and amortization (EBITDA) is another variable used in the study. It is calculated as revenues less expenses (excluding tax, interest, depreciation and amortization). The price-to-book ratio, (P/B ratio) is the current market price to its book value. The asset turnover ratio is calculated as the ratio of the value of a firm's sales or revenues generated relative to its assets. Finally, we use leverage and is defined as the ratio of short term and long-term debt to total equity.

3.4 Methods

We adopt a cross sectional analysis to test the performance of the three sets of IPOs. The null hypothesis is that the mean buy-and- hold abnormal returns are equal to zero. Following Lyon, Barber and Tsai (1999), we use the skewness adjusted t-statistics to test the null hypothesis. We report BHARs for two benchmarks: 1) the BSE Share Index, and (2) an industry benchmark.

To gain a better understanding of the long-term performance of IPOs, we undertake a multivariate regression for the overall sample and the three sets of IPOs separately. This would then consider the characteristics or nature related to the positive returns. The regression takes the following form:

$$Rw = \alpha + \beta_1 1st\ day\ returns + \beta_2 Marketcap + \beta_3 PTBV + \beta_4 AT + \beta_5 Leverage + \beta_6 PE(VC)\ Dummy + \varepsilon_t$$

Where, *Rw* is the dependent variable of the equally weighted 36-month relative wealth (natural logarithm); Following Cao and Lerner(2009) and Levis (2011), we classify the control variables into two groups, namely, the first group that represents IPO characteristics at the time of the listing (i.e., the first-day return which is the logarithm of first day returns, Marketcap which is the logarithm of market value of firms at the time of listing , PTBV which is the price to book at the offer price). The second group includes operating characteristics of the firms' assets turnover (sales to total assets) and leverage (total debt

to total assets) at the first year after the IPO. PE(VC) Dummy is used to represent the PE and VC sponsorship during the sample period.

4. Distribution of IPOs

Table 1 represents the distribution of the number of IPOs from 2006 to 2018 across the three sets. The total amount raised is the share price multiplied by the number of shares issued. The market capitalization is the share price multiplied by the number of shares outstanding after the IPO. We observe that a total amount of Rs.159 Crores ($20.83 million USD) were raised by IPO issues. Venture capital sponsored IPOs account for 13% in terms of the volume but only 10% of the total amount raised. On the other hand, private equity sponsored issues account for 17% of the volume but amounts for roughly 15% of the total amount raised.

In terms of market capitalization, we find that the private equity sponsored IPOs are on average larger firms with a market capitalization with Rs.28,054 Crores ($365 million USD) than their VC sponsored counterparts with Rs.7,969.5 Crores ($103 million USD). A closer analysis shows that more than 60% of the NS IPOs went public with a market capitalization below Rs.10 Crores ($15.1 million USD), comparing to the PE sponsored IPOs where almost all of them had larger market capitalizations. Comparatively, VC sponsored IPOs have a smaller market capitalization out of the three sets of IPOs.

Table 1 here.

Table 2 represents the classification of IPOs sector wise, number of issuances and the total amount raised in each sector. Our findings highlight some important distinctions across the three sets of IPOs. For example, around 70% of the amount raised for private equity sponsored IPOs relate to consumer goods and services whereas 85% of the VC sponsored IPOs are involved in the same industry. Consumer services also accounts for 22% of the NS IPOs making this industry a popular one in India for companies to be listed on the exchange. These distinctions in industrial composition across the three IPO sets may have an impact on the performance of these issuances.

Table 2 here.

Table 3 presents descriptive statistics for the three sets of IPOs based on firm size and operating characteristics. It reports the median values for market capitalization, the number of employees, total assets, sales, EBITDA, operating margin, asset turnover and leverage for each of the three IPO sets. The accounting values are obtained at the end of the financial year of the firm prior to IPO. In terms of market capitalization, we find that private equity sponsored IPOs are larger relative to sponsored issues by venture capitalists. They also appear to perform better in net sales and operating margins are higher than that of VC sponsored IPOs. It should also be noted that despite the smaller number of observations for PE, the median for total assets, net sales and EBITDA is substantially higher relative to NS IPOs.

The VC sponsored IPOs tend to have more assets and higher earnings. This is also reflected in the asset turnover ratio. When we examine the ratio of size (market capitalization to earnings), we find VC sponsored IPOs are the highest at 24.3. Interestingly, VC sponsored IPOs tend to have the highest leverage. Levis (2011) argue that these differences are not astonishing given that private equity investors and venture capitalists use various selection measures whilst making their investments.

Table 3 here.

To summarize our findings here, we can conclude that most of the VC and PE sponsored IPOs were floated in the recent years as opposed to the NS IPOs, highlighting the financial liberalisation on alternative investments, after the year 2005, where barriers to alternative investment options were lifted (Table 1). Table 2 shows that sponsored IPOs are popular within the consumer goods and consumer services sector accounting for more than half of the PE and VC sponsored IPOs.

In Table 3, we can conclude that based on the operational characteristics of the sample, the medians of the PE sponsored IPOs and VC sponsored IPOs are quite close to each other. We find that PE sponsored IPOs are bigger. They report higher net sales than both the VC sponsored IPOs and NS IPOs. Despite the lower number of observations, the median for total assets for PE sponsored IPOs is higher than that of the NS IPOs. These findings are consistent with Cao and Lerner (2009)'s, Brav (2009)'s, and Levis (2011)'s

findings. Our results show that fundamental differences in firm characteristics exist in the sample of sponsored and non-sponsored IPO issues. This finding confirms that there are marked differences across firm characteristics in the sample of NS, VC and PE sponsored IPO issues.

Our evidence demonstrates that PE sponsored IPOs are on average, larger in terms of amount raised, market capitalization, sales and assets, and tend to concentrate in certain industries related to consumer services and consumer goods

5. Empirical Results

Table 4 reports the cross-sectional analysis of the short run and long-run performance of the entire sample of IPOs. For each IPO, the daily BHARs are estimated by compounding daily returns up to the end of the month, twelve months and thirty-six months. If a firm delists, then returns are compounded until the date of delisting. The results are reported for one month, one year and three-year for the whole sample of IPOs and each of the three sets using two alternative benchmarks: (a) BSE benchmark and (b) the industry sector described in section 3.4.

Table 4 here.

Panel A in Table 4 presents the equally weighted and value weighted BHAR results of the entire sample of IPOs for the BSE and industry benchmarks. We find that the one month, twelve months and thirty-six-month BHARs for the entire sample is negative and significant which is consistent with the previous findings of long-term underperformance.

Panel B reports the equal weighted and value weighted buy and hold abnormal returns for the non-sponsored issues. The NS group has a much worse short run and long-run performance than the other two sets of VC and PE sponsored. Here, we can conclude that the negative results for the full sample (Panel A) are principally attributable to the weaker performance of NS IPOs. The finding supports the argument that the prevalence of underperformance in the NS IPOs is more pronounced than that in the sample of PE and VC sponsored IPOs.

Panel C reports the equally weighted and value weighted BHARs for the VC sponsored IPOs. Between the equally weighted and value weighted measures, we find that the equally weighted BHARs measures to be marginally better. Also, the performance

against the marked index benchmark (BSE) at -1.25 percent is better than the industry benchmark of -3.26 percent. But, the long-run underperformance is still prevalent.

Panel D presents the performance of the PE sponsored IPOs. Here, we find that the PE sponsored IPOs outperform both benchmarks in the one year and three-year interval period. For example, the significant and positive returns in the industry benchmark is 4.28 percent as opposed to 3.32 percent with the BSE benchmark. It should also be noted here that the PE sponsored IPOs have outperformed the NS and VC sponsored IPOs.

The results above show striking differences in the long-term performance across the three groups of IPOs. The findings demonstrate that PE sponsored IPOs outperform the two benchmarks. PE sponsored IPOs attain positive and significant buy and hold abnormal returns, both in equal and value-weighted terms, in the thirty-six-month period. However, VC sponsored IPOs and NS issues appear as poor performers. The evidence supports the widespread market perception that since PE involvement facilitates closer monitoring and reduces information asymmetries, it leads to relatively enhanced operating performance of the firms. This, in turn, leads to better share price performance in the long run. These results imply that investors would benefit in the form of earning abnormal returns if they were to invest in PE sponsored issues. This finding is consistent with Katz (2009).

From the discussion above, we can conclude that the results indicate marked differences in the short-term and long-term returns amongst the three sets of IPOs with the PE sponsored issues outperforming the benchmark. Cao and Lerner (2009) and Levis (2011) document that the differences in the IPO performances may be due to the various inherent features of the firms. Cao and Lerner (2009) argue that in order to minimize any biases from composition effects of the sample, it is essential to undertake performance robustness checks by restricting the sample to revenues(sales), size(assets) and leverage. Thus, following Cao and Lerner (2009) and Levis (2011), Table 5 presents a few performance robustness checks where we constrain each of the sets with total assets of Rs.40 Crore ($60.5 million USD) or more, total sales Rs.10 Crore ($15.1 million USD) or more, and a leverage ratio of 10% or more. The BHARs are reported relative to the BSE Index. BHARs are calculated for thirty-six months after the listing. All accounting variables are as of the financial year of the issue.

Table 5 here.

Panel A examines the performance distinctions for the three sets by constraining the size of assets to more than Rs.40 Crore ($60.5 million USD). The top 43.2% of the PE sponsored IPOs continue to perform well in terms of assets.

Panel B tests the returns differences for the three sets by restricting the sales to more than Rs.10 Crore ($15.1 million USD). The results are distinct as PE sponsored IPOs clearly outperform its counterparts.

Panel C refers to the restriction placed on firm leverage of higher than 10%. Here, we observe that the marked differences amongst the three sets become more distinct. 78.2% of the PE sponsored IPOs above this leverage level perform better than the VC sponsored and NS issues with similar levels of leverage.

The evidence suggests that the positive performance of PE sponsored IPOs is consistent across the various dimensions of operational characteristics. We find that the performance of PE sponsored IPOs appear to be the best in terms of debt utilisation. This finding supports the argument that leverage is the core of the PE business model and that the performance of the firm increases with higher levels of leverage (Jensen,1989).This is also consistent with the findings of Johan and Zhang (2016) who identify high levels of debt as one of the factors that leads to improved operational efficiencies of PE sponsored firms.

5.1 Performance Differences across sponsored and non-sponsored IPOs

The characteristics of the firms or investors' future expectations are the possible reasons for the positive performance of PE sponsored IPOs (Levis, 2011). Table 6 reports regression results for the performance of the overall sample of IPOs and then for each of the three sets of IPOs for the thirty-six-month period. The natural logarithm of wealth relative to the BSE 500 as the benchmark is the dependent variable. This is calculated as the buy-and-hold cumulative return for each of the groups of IPOs divided by the equivalent buy-and-hold return of the BSE 500 Index. The explanatory variables are the market capitalization, first day returns, price to book ratio, asset turnover, leverage, PE and VC dummy variables. For the full sample of IPOs, the coefficient estimate for the intercept is negative and significant. On the other hand, the coefficient estimate for the PE dummy is positive and significant. This confirms the positive performance for PE sponsored IPOs. Although the coefficient estimate for the VC dummy is also positive, it is not significant.

Furthermore, the first day returns are negative for the whole sample and NS group but positive for the VC and PE sponsored sets. We find that the coefficient estimate for market capitalization is positive for the PE sponsored issues. This is consistent with the results in Table 4.

The evidence relating to operational indicators are also of interest as each of the set of IPOs emerges with a different pattern. The coefficients for market capitalization and leverage are positive for the entire group. Notably, PE sponsored IPOs have a higher leverage value compared to its counterparts. This is also consistent with evidence from the study on leveraged buy outs (Acharya et. al, 2013). PE sponsored IPOs have performed significantly better than its non-sponsored counterparts. They further show better returns in the long run up to 36 months and increased profitability and leverage consistent with Levis (2011)'s findings in the UK.

Overall, the regression results show that the performance of PE sponsored IPOs is significantly better than that of the NS and VC sponsored IPO issues. Our findings clearly demonstrate that there is a positive and significant relation between leverage and long-run performance for the PE sponsored issues. This conclusion is consistent with Jensen (1989)'s concept of value creation by PE. It also lends credence to the argument that the high utilization of debt is possibly one of the key drivers for the PE model. This evidence also further establishes that an investor would earn positive returns by investing in PE sponsored issues.

Table 6 here.

6. Conclusion

Since the liberalisation reforms of 1992, the landscape of the Indian financial system has undergone significant and positive changes. Indian VCs and PEs which are private entities have entered the foray as key players in the field of financing. IPOs remain a popular exit route for these entities. The primary aim of this paper is to examine the performance of IPOs from a sponsorship perspective i.e. PE and VC sponsored IPOs and ascertain which sponsored issue fare better. We find that the performance of PE sponsored IPO is significantly better than that of the NS and VC sponsored IPO performance.

Our paper contributes to the existing literature in the following ways: First, it fills the gap by providing econometric analyses on the performance of Indian IPOs based on

sponsored versus unsponsored issues. To the best of our knowledge, Raghupathy et al., (2015) and Gohil et al., (2015) are the only ones who provide an analysis of VC and PE sponsored issues respectively. However, Raghupathy et al., (2015) examine only VC sponsored issues and similarly, Gohil et al., (2015) investigate only PE sponsored issues in their study. This study fills the gap by distinguishing between PE and VC sponsored issues in the sample to gain a better understanding of the performance of sponsored IPOs. Secondly, previous studies that examine sponsored issues in India do not consider characteristics of the firms prior to listing. This study offers evidence on key differences in the operating characteristics of the firms prior to listing. Finally, the findings of this paper also present another perspective on the underperformance of IPOs by examining the classification of the overall IPO sample in terms of PE and VC sponsored and non-sponsored issuances from a developing economy outlook.

Sponsored IPO issues convey favourable information to investors about future earnings and prospects of the firm. We contend that our findings indicate that sponsored issues and, in particular the PE sponsored issues are perceived by investors positively. Investors view PE participation in firms to have a positive impact on the operational performance of firms relative to the constituents of the index. This superior operational performance over time also leads to relatively better performing share prices and lead investors to earn abnormal returns by investing in PE sponsored IPOs. We argue that any PE involvement in an IPO convey favourable information to investors about future earnings and prospects of the firm's better management relative to VC or non-sponsored issues. We also argue that the favourable institutional framework has encouraged PE and VC investments to gain momentum in India hence making it a viable alternative investment destination.

The main challenge in this research was the limitation posed by the availability of data from an emerging economy such as India. As observed, given that India is an emerging economy, this study has had to deal with much smaller samples of PE and VC when compared to similar studies conducted in the developed markets such as UK and US. Further robustness tests on the market performance using factor models posed a problem due to limitation of the availability of the factors. Unlike the extensive studies conducted in the UK and USA and other developed markets, limited availability of data at firm level and a developing capital market did pose challenges. Moreover, the vital question related

to the factors that underline the performance variances between venture capital and private equity-sponsored IPOs remains open. A detailed analysis of their management and operational strategies may prove useful. Future scope of research may include analysis of the performance of PE and VC sponsored IPOs by examining the reputation of the underwriter and sponsors, book building activity and its impact on the performance of sponsored IPOs. Nevertheless, the findings of this study with its limited samples and other limitations do have an implication and contribution to the existing literature on IPOs from an emerging market perspective.

References

Acharya, V. V., Hahn, M., & Kehoe, C. (2013). Corporate governance and value creation: Evidence from private equity. The Review of Financial Studies,26(2), 368-402.

Ang, J. and Boyer, C., (2009). Performance differences between IPOs in new industries and IPOs in established industries. Managerial Finance, 35(7), 606-623.

Bain Consulting. Indian Private Equity Report (2018)

Bansal, R. and Khanna, A., 2013. Vector Auto-regressive Analysis of Determinants of IPO Underpricing: Empirical Evidence from Bombay Stock Exchange. Global Business Review, 14 (4), 651-689.

Bergstrom, C., Nilsson, D and. Wahlberg, M., (2006). Under-pricing and Long-Run Performance Patterns of European Private Equity-Sponsored and Non-Private Equity-Sponsored IPOs, Journal of Private Equity, 9, 16-47.

Bhatia, S. and Singh, B., (2012). Examining the performance of IPOs: An evidence from India. Management and Labour Studies, 37 (3), 219-251.

Brav, A., & Gompers, P. A. (1997). Myth or reality? The long-run underperformance of initial public offerings: Evidence from venture and non-venture capital-sponsored companies. Journal of Finance, 52, 1791–1821.

Brav, A., Geczy, C., & Gompers, P. A., (2000). Is the abnormal return following equity issuances anomalous? Journal of Financial Economics, 56, 209–249.

Barv, O., (2009). Access to Capital, Capital Structure, and the Funding of the Firm. Journal of Finance 64(1),263-308.

Cai, X., Liu, G. S., and Mase, B., (2008). The long-run performance of initial public offerings and its determinants: the case of China. Review of Quantitative Finance and Accounting, 30 (4), 419-432.

Campbell, T. L., and Frye, M. B., (2009). Venture capitalist monitoring: Evidence from governance structures. The Quarterly Review of Economics and Finance. 49(2): 265–282.

Cao, J. and Lerner, J., (2009). The performance of reverse leveraged buyouts. Journal of Financial Economics, 91 (2), 139-157.

Clarke, J., Khurshed, A., Pande, A., and Singh, A.K., (2016). Sentiment traders & IPO initial returns: The Indian evidence. Journal of Corporate Finance,37,24-37.

Dayanandan, A., and Sra, J. K., (2018) Accrual management and expected stock returns in India. Journal of Accounting in Emerging Economies, 8(4), 426-44.

Dhamija, S., and Arora, R., (2014). The Long run performance of graded IPOs in the Indian Capital Market. Global Business Review, 15 (2), 317-337.

Didier, T., and Schmukler, S.L., (2013). The financing and growth of firms in China and India: Evidence from capital markets, Journal of International Money and Finance, 39,111-137.

Espenlaub, S., Khurshed, A., and Mohamed, A., (2015). VC investments and global exits. European Journal of Finance, 21(7), 608–628.

EY Global Trends Report (2017). Global IPO trends: Q4 2017.

EY Global Trends Report (2018). Global IPO trends: Q4 2018.

Ghosh, S., (2005). The post-offering performance of IPOs in the Indian banking industry. Applied Economic Letters, 12 (2), 89-94.

Gohil, R., and Vyas, V., (2015). Performance of Private Equity Backed Initial Public Offerings: Empirical Evidence from India. Journal of Private Equity,18(4), 56-64.

Givoly, D., and Shi, C., (2008). Accounting for Software Development Costs and the Cost of Capital: Evidence from IPO Underpricing in the Software Industry. Journal of Accounting, Auditing and Finance, 23(2), 271-303.

Goergen, M., Khurshed, A and Mudambi, R., (2007). The long run performance of UK IPOs: can it be predicted? Managerial Finance, 33 (6), 401-419.

Groh, A.P., Liechtenstein, von H., and Lieser, K., (2010). The European Venture Capital and Private Equity country attractiveness indices. Journal of Corporate Finance, 16(2), 205-224.

Harris, R. S., Jenkinson, T., and Kaplan, S., (2014). Private Equity Performance: What Do We Know? Journal of Finance, 69(5), 1851-1882.

Hensler, D.A., Herrera, M. J., and Lockwood, L. J., (2000). The performance of initial public offerings in the Mexican stock market, 1987–1993. Journal of International Money and Finance, 19, 93-116.

Jaitley, S., (2004). Pricing of IPOs and Their After-Issue Performance in the Indian Equity Market. Managerial Finance, 30 (1), 29-45.

Jelik, R., Saadouni, B. and Wright, M., (2005). Performance of Private to Public MBOS: The Role of Venture Capital. Journal of Business Finance and Accounting ,32, 643-681.

Jenkinson, T and Jones, H., (2009). IPO pricing and allocation: a survey of the views of institutional investors. Review of Financial Studies, 22 (4), 1477-1504.

Jensen, M.C., (1989). Eclipse of the Public Corporation. Harvard Business Review, 67, 61-74.

Johan, S., and Zhang, M., (2016). Private equity exits in emerging markets. Emerging Markets Review 29 ,133–153.

Katz, S., (2009). Earnings Quality and Ownership Structure: The Role of Private Equity Sponsors. Accounting Review, 84, 623-658.

Kiymaz, H., (2000). The initial and aftermarket performance of IPOs in an emerging market: evidence from Istanbul stock exchange. Journal of Multinational Financial Management, 10(2), 213-227.

Khurshed,A., Paleari, S., Pande, A., and Vismara, S., (2014). Transparent book building, certification and initial public offerings. Journal of Financial Markets, 19, 154-169.

Killins, R., and Egly, P.V., (2018). The long run performance of US firms pursuing IPOs in foreign markets, Review of Accounting and Finance, 17(1), 58-77.

Kirkulak, B., (2008). The initial and long-run returns of Japanese venture capital-sponsored and non-venture capital-sponsored IPOs. International Journal of Managerial Finance, 4(2), 112 – 135.

Kooli, M., and Suret, J., (2004). The aftermarket performance of initial public offerings in Canada. Multinational Financial Management, 14 (1), 47-66.

Krishnamurti, C. and Kumar, P., (2002). The initial listing performance of Indian IPOs. Managerial Finance, 28 (2), 39-51.

Lalwani, V. and Chakraborthy, M., (2018). Quality investing in the Indian Stock market. Managerial Finance, 44(2), 127-141.

Lee, P.J., Taylor, S. L., and Walter, T.S., (1996). Australian IPO pricing in the short and long run. Journal of Banking and Finance, 20 (7), 1189-1210.

Lee**,** P. and Wahal, S., (2004). Grandstanding, Certification, and the Underpricing of Venture- Capital Sponsored IPOs. Journal of Financial Economics, 73, 375-407.

Levis, M., (2011). The Performance of Private Equity-Sponsored IPOs. Financial Management, 40(1), 253-277.

Liao, W. M., Lu, C., and Wang, H., (2014). Venture capital, corporate governance, and financial stability of IPO firms. Emerging Markets Review 18, 19–33.

Loughran, T., and Ritter, J. R., (1995). The New Issues Puzzle. Journal of Finance, 50(1),23-51.

Lyon, J.D., Barber, B.M., and Tsai, C.L., (1999). Improved Methods for Tests of Long-Run Abnormal Stock Returns, Journal of Finance 54, 165-201

Marti, J., Menéndez-Requejob, S., and Rottke, O, M., (2013). The impact of venture capital on family businesses: Evidence from Spain. Journal of World Business, 48(3), 420-430.

McKinsey and Company, (2018). Indian Private Equity: Route to Resurgence.

Megginson, W. and Weiss, K., (1991). Venture Capitalist Certification in Initial Public Offerings. Journal of Finance, 46, 879-903.

Minardi, A. M. A. F., Ferrari, G, F., and AraújoTavares, P. C., (2013). Performances of Brazilian IPOs sponsored by private equity. Journal of Business Research, 66 (3), 448-455.

Nahata, R., (2008). Venture capital reputation and investment performance. Journal of Financial Economics, 90(2),127-151.

Naifar, N., (2011). Explaining IPOs Under-pricing in the Tunisian Market. Journal of Emerging Market Finance, 10 (3), 311-336.

Neupane, S., Paudyal, K and Thapa, C., (2014). Firm quality or market sentiment: What matters more for IPO investors? Journal of Banking and Finance, 44, 207-218.

Otchere, I., and Vong, A. P. I., (2016). Venture capitalist participation and the performance of Chinese IPOs. Emerging Markets Review 29, 226-245.

Pandey, A., and Sehgal, S., (2016). Explaining Size Effect for Indian Stock Market. Asia-Pacific Financial Markets 23 (1), 45-68.

Phylaktis, K., (2009). Emerging-Markets Finance: Overview of the special issue. Journal of International Money and Finance, 28(4), 549-553.

Preqin Private equity Venture capital in India Report 2019.

Raghupathy, M. and Thillairajan, A., (2015). Financial Value Creation: A Comparative Study of VC-Sponsored IPOs and Non-VC-Sponsored IPOs in India. Journal of Private Equity, 18 (3) ,55-71.

Ritter, J.R., (1991). The long run performance of Initial Public Offerings. Journal of Finance, 46 (1), 3-27.

Rock, K., (1986). Why new issues are under-priced, Journal of Financial Economics 15 (1986) 187-212.

Sahoo, S., (2015). Subscription Rate and Volatility: An Investigation for Indian IPOs Journal of Emerging Market Finance, 14(1), 20-58.

Saith, A., (2008). China and India: The Institutional Roots of Differential Performance. Development and Change, 39(5), 723-757.

Sayed, S.A., (2017). How much does valuation model choice matter? Target price accuracy of PE and DCF model in Asian emerging markets. Journal of Accounting in Emerging Economies, 7(1), 90-107.

Shette, R., Kuntluru,S., and Korivi, S,R., (2016). Opportunistic earnings management during initial public offerings: Evidence from India, Review of Accounting and Finance, 15(3), 352-371.

Smith, S.C., and Chun, H., (2003). New Issues in Emerging Markets: Determinants, Effects, and Stock Market Performance of IPOs in Korea, Journal of Emerging Market Finance,2(3), 253-285.

Smolarski, J., Wilner, N., and Yang, W., (2011). The use of financial information by private equity funds in evaluating new investments. Review of Accounting and Finance, 10(1),46-68.

Subrahmanyam, M. and Marisetty, V., (2010). Group affiliation and the performance of IPOs in the Indian stock market. Journal of Financial Markets, 13**,** 196-223.

Suchard, J., (2009). The impact of venture capital backing on the corporate governance of Australian initial public offerings. Journal of Banking and Finance, 33 (4), 765-774.

Sucharda, J.A. and Singh, B. M., (2007). Determinants of the Pricing of Privatization IPOs in the UK and Australia. International Journal of Business, 12(3), 361-384.

Tiwari,R., and Vidyarthi, H.,(2018).Intellectual capital and corporate performance: a case of Indian banks. Journal of Accounting in Emerging Economies, 8(1), 84-105.

Syamala Reddy, S., (2018). Market-timing and pseudo market timing: an empirical examination of IPOs in India, Managerial Finance, 44(2), 160-177.

Weisman, L., (1996). The advent of private equity in Latin America. The Columbia Journal World of Business, 31(1), 60-68.

Zhang, J., and Pezeshkan, A., (2015). Host country, industry experience, and international alliance formation: evidence from the venture capital industry. Journal of World Business, 51(2), 264-277.