ADVANCES IN PACIFIC BASIN BUSINESS, ECONOMICS AND FINANCE

Edited by Dr. Cheng-Few Lee and Dr. Min-Teh Yu

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CONTENTS

LIMITED ATTENTION, MOTIVATED INSTITUTIONAL INVESTORS, AND IPO SURVIVABILITY

Haoyu Gao,[a] Ruixiang Jiang,[b] Wei Liu,[c] Junbo Wang[b] and Chunchi Wu[d]

ABSTRACT

Using initial public offering (IPO) involuntary delisting data, this chapter examines whether and how motivated institutional investors affect the survivability of IPO firms. The empirical evidence shows that the likelihood of future delisting is much lower for IPOs with more motivated institutional investors. This impact is more pronounced for firms with higher information asymmetry. The motivated institutional investors also facilitate better post-IPO operating performance. The results are consistent with the prediction of the limited attention theory.

Keywords: Motivated institutional investors; IPO survivability; information asymmetry; operating performance; monitoring effect; analyst coverage

JEL Classification: G12; G13

1. INTRODUCTION

Although there is a significant number of initial public offering (IPO) delisting in US stock market,[1] researchers paid considerably less attention on IPOs' "disappearance." The existing studies on the determinants of IPO survivability mainly focus on accounting performance, chief executive officer (CEO)–related features,

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information intermediaries, and IPO deal-related characteristics (see, for example, Demers & Joos, 2007; Gounopoulos & Pham, 2018; Kaneda, 2019; Schultz, 1993; Seguin & Smoller, 1997; Weber & Willenborg, 2003; Willenborg & McKeown, 2000). However, none of the existing studies has examined the potential effect of institutional investors' monitoring willingness on IPO survivability. This chapter aims to close this gap by studying the effect of motivated institutional investors on IPO involuntary delisting.

Prior studies find that institutional holding is associated with higher post-IPO abnormal returns as these sophisticated investors can either have private information and relation (Chemmanur, Hu, & Huang, 2010; Hwang, Zhang, & Zhu, 2019) or better use of available public information (Field & Lowry, 2009; Barber & Odean, 2008).[2] Moreover, both theoretical and empirical studies conclude that institutional investors play a significant role in monitoring corporate activities (Shleifer & Vishny, 1986; Bhojraj & Sengupta, 2003; Boone & White, 2015; Cheng, Lin, & Tung, 2018; Kahn & Winton, 1998). Our chapter expands the IPO literature by showing that institutional investors' monitoring willingness plays a significant role in IPO firms' likelihood of future survival.[3]

The unique feature that equity shares owned by institutional investors varies significantly across invested firms provides an ideal setting to investigate the impact of attention constraints.[4] As the willingness to monitor firms varies across different institutions (Maug, 1998; Kahn & Winton, 1998), a number of studies have investigated the value of "self-motivated" institutions.[5] In line with limited attention hypotheses, institutional investors are willing to make more monitoring efforts on firms in which they have larger holding (Masulis & Mobbs, 2014; Fich, Harford, & Tran, 2015). Thus, we predict that the involvement of these motivated institutional investors lead to higher IPO survivability. As the cost of information collection for monitoring varies across firms, the effect of monitoring willingness is expected to be stronger for firms with higher information asymmetry.

We provide several new findings that expand the current literature. First and foremost, we find that the likelihood of IPO firms' failure is significantly negatively associated with the ownership of motivated institutional investor. A one standard deviation increase in motivated institutional investors' ownership reduces the probability of being delisted within a 5-year horizon by 2.3%. Given the 5-year IPO delisting rate is around 14%, 2.3% is an economically significant number of reduction in IPO delisting. The result is robust to controlling for the year and industry fixed effects, traditional determinants of IPO failure, and characteristic variables related to institutional investors. Second, the monitoring effect of motivated institutional investors is more significant for an IPO firm with a poorer information environment, i.e., IPOs listed on the National Association of Securities Dealers Automated Quotations (NASDAQ), with smaller size, and less analyst coverage.[6] Third, the results show that higher ownership by motivated institutional significantly improves the post-IPO operating performance. These findings strongly support our hypotheses.

An alternative explanation for our findings is that the motivated institutional investors do not influence corporate governance but instead, they choose better IPO firms to invest. We take several steps to address this issue related to reverse causality.

Using the two-stage regression analysis and propensity score matching (PSM) method to mitigate the reverse causality and endogeneity concerns, our inference remains unchanged.[7] In addition, our results are robust to the use of different model specifications, such as the Cox proportional hazard model. Furthermore, our placebo tests rule out other possible explanations unrelated to monitoring.

To the best of our knowledge, this chapter is the first to investigate the role of motivated institutional investors in affecting IPO firm survivability. Our work complements previous studies on the heterogeneity of institutional investors (Bushee, 1998; Almazan, Hartzell, & Starks, 2005; Chen, Harford, & Li, 2007; Fich et al., 2015) by showing that higher "self-motivated" institutional ownership is associated with lower likelihood of involuntary IPO delisting. As it is difficult to measure investor attention and its allocation to different investments (Peng, 2005; Peng & Xiong, 2006; Corwin & Coughenour, 2008; DellaVigna & Pollet, 2009), direct evidence on the effect of limited attention is scant. This chapter contributes to the current literature by providing convincing evidence that supports the prediction of limited investor attention theory (Kahneman, 1973).

The remainder of the chapter proceeds as follows. Section 2 discusses the related literature and develops testable hypotheses. Section 3 describes the data, and Section 4 presents the empirical results and robustness tests. Finally, Section 5 summarizes our major findings and concludes the chapter.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Motivated Institutional Investors

Several theoretical models show that large shareholders (e.g., institutional investors) play an important role in influencing firms' operating performance through monitoring and intervention. Shleifer and Vishny (1986) show that the monitoring of large shareholders is a potential solution to the free-rider problem (Grossman & Hart, 1980). Huddart (1993) demonstrates that only large shareholders have an incentive to monitor managers due to the fact that monitoring is a public good, whereas monitoring costs are privately incurred. Given that institutional investors have to bear information production and liquidity costs (e.g., Kahn & Winton, 1998; Maug, 1998), prior research shows that institutions' willingness to take efforts for monitoring varies across institutional investors. For example, Admati, Pfleiderer, and Zechner (1994) show that large shareholders' incentives to monitor firms are lower for portfolios with multiple risky securities and risk-averse investors.

A number of empirical studies show that only certain types of institutional investors expend monitoring efforts. Bushee (1998, 2001) finds that different types of institutional investors have a differential effect on firms' corporate activities. Almazan et al. (2005) group institutional investors into active and passive institutional investors and find that active institutional investors provide more effective monitoring on corporate management. Chen et al. (2007) classify institutional investors into long- and short-term investors and show that independent institutions with long-term investments will specialize in monitoring.

As attention is a limited resource, it is difficult for investors to perform well in multiple monitoring tasks simultaneously. The theory of limited attention predicts that most finance professionals cannot allocate the same amount of time to different tasks; instead, they are more likely to invest more time and efforts on the tasks perceived to have higher potential. In line with this prediction, Masulis and Mobbs (2014) find that independent directors with multiple directorships value a position in larger firms more. Investigating the role of institutional investors in mergers and acquisitions (M&A) activities, Fich et al. (2015) find that firms with highly motivated institutional investors are more likely to be effectively monitored. In this chapter, we expand the literature by investigating the role of institutional investors in influencing IPO performance.

2.2 IPO Survivability

Fama and French (2004) document that the ten-year delisting rate for new stock listings during the 1980–1991 cohort is over 44.0%. Doidge, Karolyi, and Stulz (2017) examine the time evolution of delistings in the United States and find that the average delisting rate is around 9.49% during the period from 1997 to 2012. A large amount of literature studies the "birth" of IPO firms from different angles with fewer studies investigating the causes of their "disappearance" and its cross-sectional determinants (Gao, Ritter, & Zhu, 2013).

Among a small set of studies on IPO firms' delisting, most of them focus on its determinants. Schultz (1993) finds that firms issuing unit IPOs are far more likely to fail than those issuing shares alone. Seguin and Smoller (1997) document a higher mortality rate for lower-priced stocks. Willenborg and McKeown (2000) and Weber and Willenborg (2003) find that auditors' opinions have predictive power for IPO delisting. Demers and Joos (2007) develop an IPO failure prediction model and show that accounting fundamentals, information intermediaries, and IPO-related characteristics are informative for the failure of IPOs. Li and Zhou (2006), and Alhadab, Clacher, and Keasey (2015) show that earnings management is positively related to the IPO failure. Gounopoulos and Pham (2018) examine the role of CEOs in IPO future survivability. Despite an increasing interest in the issue of IPO failure, to our knowledge, the role of motivated institutional investors in post-IPO delisting has not been explored.

2.3 Hypothesis Development

Past studies typically use the aggregated institutional investors' holding in a firm's stock as a control variable. However, institutional investors are more likely to obtain more benefits by distributing different monitoring efforts across multiple holding firms (Masulis & Mobbs, 2014; Fich et al., 2015). Prior research shows that investors' limited attention or attention allocation affects financial market performance and investor behavior (Peng & Xiong, 2006; Corwin & Coughenour, 2008; DellaVigna & Pollet, 2009). Due to limited resources and attention, institutional investors should balance their monitoring efforts strategically and allocate more efforts to firms that are relatively important in their portfolio.

Using the method of Fich et al. (2015), we construct the measure of motivated institutional ownership in an IPO firm. In line with the theory of limited attention, we posit that institutional investors will expend more monitoring efforts on firms in which they invest a larger fraction of their portfolio. More monitoring from motivated institutional investors will mitigate the moral hazard problem and reduce the likelihood of forced delisting due to a firm's poor performance. This leads to our first testable hypothesis.

H1. The likelihood of IPO delisting is negatively associated with the ownership of motivated institutional investors.

Managers' self-discipline and external monitoring can improve firms' operating performance. The marginal benefit from monitoring by investors is smaller for well self-disciplined management as agency problems are less likely to occur for these firms. Prior studies show that firms with more severe information asymmetry are more likely to have moral hazard problems. As such, the benefit of monitoring by motivated institutional investors is expected to be stronger for informationally asymmetric firms.

Several firm characteristics are proxies for information asymmetry. Duarte, Han, Harford, and Young (2008) suggest that NASDAQ firms, on average, have higher information asymmetry than New York Stock Exchange (NYSE)/American Stock Exchange (AMEX) firms. Atiase (1985) shows that larger firms tend to have a better information environment. In addition, analysts are among the most important information producers in the financial industry, and analyst following is positively related to firm's voluntary disclosure frequency (Jensen & Meckling, 1976; Lang & Lundholm, 1996; D'Mello & Ferris, 2000). Thus, firms with more analysts following tend to have a better information environment.

The preceding analysis leads to our second hypothesis that is linked to the information asymmetry channel of the effect of motivated institutional investor ownership.

H2. The negative association between motivated institutional ownership and IPO delisting is expected to be stronger for IPO firms with higher information asymmetry, such as those listed on NASDAQ, with smaller size and less analyst coverage.

Ahn and Choi (2009) show that bank monitoring plays an important role in the corporate governance of bank-dependent firms. Chhaochharia, Kumar, and Niessen-Ruenzi (2012) find that the distance from the firms to their institutional investors is inversely related to firms' operating performance as longer physical distance impedes the effectiveness of monitoring. Thus, the monitoring activities and intensity of motivated institutional investors can improve firms' corporate governance and operating performance. This leads to the third hypothesis we test in this chapter:

H3. The motivated institutional ownership of IPO firms is positively associated with post-IPO operating performance.

3. DATA AND VARIABLES

3.1 Data

We collect data from several different sources. IPO data are collected from the Securities Data Company (SDC) over the period from January 1980 to December

2014. Following the literature, we drop rights issues, unit offerings and spin-offs, American Depositary Receipts (ADRs), Shares of Beneficial Interest (SBIs), Real Estate Investment Trusts (REITs), companies incorporated outside the United States, Americus Trust Components, closed-end funds, and firms not listed on AMEX, NYSE, or NASDAQ. To avoid possible outliers, we also exclude IPOs with an offer price lower than $5 per share. After filtering firms that cannot be matched with Center for Research in Security Prices (CRSP) delisting event file and are not reported on CRSP within 6 months after the offering date, we have a total of 7,767 IPOs in our sample.

Institutional holdings data are collected from Thomson Reuters 13F Institutional Holdings (13F) database.[8] We collect the quarterly institutional holdings data for the period from January 1980 to December 2014. Stock return data are from the CRSP database, and firm-level characteristics are from the Compustat database. Firms' founding dates and IPO underwriter reputation ranking data are downloaded from the website of Jay Ritter.[9]

After merging IPOs with institutional ownership variables and excluding IPOs issued after 2009, our final sample includes 5,834 IPOs,[10] of which there are 842 failures within 5 years after the IPO date.

3.2 Main Variables

3.2.1 IPO Failure

We define our main variable for the failure of the IPOs, Delist5Y (Demers & Joos, 2007), based on the delisting code in CRSP. If the firm has been delisted within 5 years since the IPO date and the CRSP delisting codes are in the 400 range ("liquidations") or the 500 range ("dropped," exclude 501, 502, 503, and 573), we set Delist5Y equal to one and 0, otherwise. For robustness check, we also measure the failure of IPOs within 3 years, Delist3Y. We also follow the methodology of Beatty (1993), Schultz (1993), and Weber and Willenborg (2003) to characterize the IPO failure.[11] Our main results are robust to different measures of IPO failure.

3.2.2 Motivated Institution Investors

Since there are no direct data on IPO allocations of institutional investors, we use reported institutional holdings data in the first quarter after the IPO.[12] Prior studies show a close relation between 13F holdings data and actual allocations (see, Hanley & Wilhelm, 1995). Fich et al. (2015) define the motivated institutional investors as those whose holding value in the firm is in the top 10% of their portfolios.[13] Using this method, we construct several motivated institutional ownership variables for each IPO firm. MnitorNum is the number of motivated institutional investors. MnitorInstiR is the proportion of motivated institutional investors' holding over all institutional investors' holding. MnitorOutstR is the proportion of motivated institutional investors' holding over the firm's total outstanding shares.

3.2.3 Other Control Variables

We select several control variables in light of the literature. Schultz (1993) shows that firm size is negatively associated with the probability of IPO failure. We use

the total assets of the firm (*Assets*) as a proxy for firm size. Altman (1968) and Hillegeist, Keating, Cram, and Lundstedt (2004) show that leverage is an important predictor of firm failure. Leverage (*Leverage*) is calculated as the ratio of total debt divided by total assets. Schultz (1993) shows the probability of firm failure is negatively associated with underwriter prestige. Following Loughran and Ritter (2004), we construct *Rank* to proxy for underwriter reputation. Titman and Trueman (1986) show that higher-quality firms will employ higher-quality auditors to send a positive signal to the market during their IPOs. We, therefore, include *Auditor*, which is a dummy variable that equals one if Compustat annual data item Auditor (item 149) equals to 1–8, 11, 17, 19, 20, 21, 24, or 27, and zero otherwise. Shumway and Warther (1999) and Beaver, McNichols, and Price (2007) find that the incidence of delisting of NASDAQ stocks is much higher than that of NYSE/AMEX firms. So, we include a dummy variable (*NASDAQ*) as a control variable.

We also include some firm characteristics (age, profitability, growth opportunity, liquidity, and volatility), IPO-related variables (offer price, underpricing), market-wide variables (degree of the hot market), and traditional institutional investor variables (block holders and dedicated institutional investors, Herfindahl–Hirschman index (HHI)) in our regressions. Table A1 in the appendix provides a detailed definition of variables.

4. EMPIRICAL RESULTS

In this section, we first provide summary statistics of the sample and then conduct portfolio analysis and multivariate regressions to test our hypotheses.

4.1 Summary Statistics

Table 1 reports the yearly distribution of the sample. The average number of IPOs during 1980–2000 is 238, while the number drops to 93 sharply for the period 2001–2009. Gao et al. (2013) find a similar pattern. The five-year delisting rate is higher for the periods of 1996–1999 and 2007–2008, which coincide with the internet bubble (Lowry & Schwert, 2002) and the global financial crisis of 2008. The average number of IPOs listed on NASDAQ (148 IPOs per year) is much larger than that of IPOs listed on NYSE/AMEX (46 IPOs per year). The five-year delisting rate on NASDAQ is also significantly higher than that on NYSE/AMEX (16.05% vs. 9.20%), consistent with the findings of Beaver et al. (2007).

Table 2 provides descriptive statistics of the main variables used in our empirical analysis. In line with Demers and Joos (2007), about 14% of IPOs fail within five years after going public (16.7% of nontech IPOs and 9.2% of high-tech IPOs failed within five years after going public). The mean values of our three main variables: MnitorNum, MnitorInstiR, and MnitorOutstR are 0.51, 0.06, and 0.02, respectively, which are comparable to those reported in Fich et al. (2015).[14]

We also report summary statistics of two IPO subgroups: IPOs with and without motivated institutional investors. About 16% of IPOs without motivated

Table 1. Calendar Year Distributions of IPO Failures.

	All Sample			NYSE/AMEX			NASDAQ		
Year	# IPOs	# Failures	Percentages	# IPOs	# Failures	Percentages	# IPOs	# Failures	Percentages
1980	43	4	9.30%	16	1	6.25%	27	3	11.11%
1981	123	10	8.13%	29	2	6.90%	94	8	8.51%
1982	53	6	11.32%	9	0	0.00%	44	6	13.64%
1983	335	41	12.24%	64	6	9.38%	271	35	12.92%
1984	138	27	19.57%	32	2	6.25%	106	25	23.59%
1985	150	20	13.33%	36	0	0.00%	114	20	17.54%
1986	322	41	12.73%	92	6	6.52%	230	35	15.22%
1987	214	31	14.49%	54	2	3.70%	160	29	18.13%
1988	107	18	16.82%	31	3	9.68%	76	15	19.74%
1989	98	7	7.14%	25	1	4.00%	73	6	8.22%
1990	81	8	9.88%	30	1	3.33%	51	7	13.73%
1991	214	16	7.48%	60	3	5.00%	154	13	8.44%
1992	305	28	9.18%	83	3	3.61%	222	25	11.26%
1993	416	41	9.86%	102	6	5.88%	314	35	11.15%
1994	312	37	11.86%	71	3	4.23%	241	34	14.11%
1995	330	37	11.21%	52	2	3.85%	278	35	12.59%
1996	520	105	20.19%	107	8	7.48%	413	97	23.49%
1997	350	77	22.00%	78	11	14.10%	272	66	24.27%
1998	228	49	21.49%	57	10	17.54%	171	39	22.81%
1999	385	88	22.86%	45	5	11.11%	340	83	24.41%
2000	276	43	15.58%	23	1	4.35%	253	42	16.60%
2001	61	7	11.48%	23	0	0.00%	38	7	18.42%
2002	58	4	6.90%	18	0	0.00%	40	4	10.00%
2003	61	8	13.12%	17	2	11.77%	44	6	13.64%
2004	152	7	4.61%	36	1	2.78%	116	6	5.17%
2005	138	16	11.59%	49	5	10.20%	89	11	12.36%
2006	144	19	13.19%	46	11	23.91%	98	8	8.16%
2007	168	40	23.81%	68	28	41.18%	100	12	12.00%
2008	23	6	26.09%	12	4	33.33%	11	2	18.18%
2009	29	1	3.45%	15	0	0.00%	14	1	7.14%
All	5,834	842	14.43%	1,380	127	9.20%	4,454	715	16.05%

Note: This table summarizes the calendar year distributions of the initial public offerings (IPOs) and the IPOs' failure within 5 years for all sample and subsamples based on the listed exchanges NASDAQ and NYSE/AMEX.

institutional investors fail within five years after going public, while only 10% of IPOs with motivated institutional investors fail. The mean asset value of firms for IPOs without motivated institutional investors is 0.14 billion, which is much smaller than that of 0.86 billion for IPOs with motivated institutional investors. The average age of IPOs without motivated institutional investors is 17 years, while it is 22 years for IPOs with motivated institutional investors.