

## **Restaurant Firms' IPO Motivations and Post-IPO Performances: Staying Public, Being Delisted, or Merged?**

### **Abstract**

**Purpose** – This study intended to identify why restaurant firms go public (IPO) despite high financing costs and which factors make firms stay public for the long term after an IPO. Also, this study aimed to link and compare restaurant firms' pre-IPO and post-IPO accounting information and how IPO proceeds were used.

**Design/methodology/approach** – This study used random-effects regression analysis with a number of dependent variables for a sample of 1,347 unbalanced panel data. In addition, logistic regression analyses were used to identify why restaurant firms were delisted within short-time periods after going public.

**Findings** – First, rebalancing financial structures was the most important reason for IPOs, whereas financing future growth was only a minor motivation. Second, post-IPO performance significantly differed between restaurant firms based on their pre-IPO financial conditions, as well as how they used IPO proceeds. Third, restaurant firms with low profitability, inefficient non-operating expenses, and difficulties in generating revenue increased their financial burdens, which ultimately caused restaurant firms to be delisted within a short time period after an IPO. Furthermore, the reasons for merging included cash shortages, large short-term liabilities, and increased major operating expenses together with increases in capital expenditures.

**Originality/value** – This study is unique in that it explains the relationships between motivations for going public and post-IPO performances by directly linking the usages of IPO proceeds with firms' operational performances. To the best of our knowledge, this study is the first to examine the effects of IPOs on restaurant firms' operational, non-operational, investment, and financial activities on firms' performances.

### **Keywords**

*restaurant firms' IPO, post-IPO performance, IPO motivations, being delisted, merged*

## **1. Introduction**

An initial public offering (hereafter IPO) is expected to accelerate a firm's growth potential through raising sufficient capital. However, being a public company through an IPO is a challenging decision for a private firm because it drastically changes the firm's ownership structure and management environment (e.g., Ibbotson & Ritter, 1995). Public firms must follow the federal Securities Exchange Act of 1934 and publish their audited financial information for shareholders, which may make useful business secrets available to competitors. Further, investors' impatience and high expectations for growth would create substantial pressure and interference for management as they undertake long-term business goals after going public. In this sense, the empirical evidence reveals that an IPO entails higher performance risks post-IPO at the expense of fast growth.

In addition, the IPO process in itself is incredibly complex and expensive. In pecking order theory, stock financing is considered the most expensive and least favorable external financing option for firms (Shyam-Sunder & Myers, 1999; Frank & Goyal, 2003). Indeed, the financing expenses associated with IPOs are especially high for restaurant firms. Firstly, even though underpricing is considered common and necessary for IPOs (Canina & Gibson, 2003), higher first day returns on IPO shares for investors imply higher financing expenses for restaurant firms because the potential wealth of initial shareholders is transferred to new shareholders. In this respect, underpricing is a significant indirect expense for restaurant firms when they go public that is not necessary if firms use either internal or debt financing. Secondly, investment banks usually charge

high commission fees, which is a considerable direct expense for IPO firms. Therefore, restaurant firms have to endure substantial direct and indirect financial costs to obtain external funds through IPOs.

Nevertheless, the IPO market has peaked investors' interest in the restaurant industry in recent years. Between 2012 and 2015, twenty restaurant firms successfully went public, including among others Ignite Restaurant Group Inc., Noodles & Company, Potbelly, Zoe's Kitchen, Bojangles, El Pollo Loco, The Habit Restaurants, Fogo de Chao, Inc., and Shake Shack. Noodles & Company ignited investors' interest with first-day IPO returns that more than doubled the IPO price in 2013. Further, the following restaurant firms' IPOs yielded frantic three digit returns on the first day of issue (NRN, 2015): Noodles & Company (104%, 2013), Potbelly (119%, 2013), The Habit Restaurants (120%, 2014), and Shake Shack (119%, 2015). Investors were particularly searching for small investment targets with tremendous growth potential and hoped to find the next Chipotle, whose stocks have increased more than 1,000% since its IPO in 2006.

Despite these restaurant firms' successful IPO stories, Ignite Restaurant Group Inc. filed for Chapter 11 bankruptcy protection within 5 years after their IPO, while Fogo de Chao, Inc. was merged by Rhone capital for 21.25% lower than its IPO price only 2 years after their IPO. Furthermore, only nine out of twenty IPO restaurant firms are currently trading at higher than their IPO price and several have lost at least half of their value. Along similar lines, recent sales growth and operational performance of these IPO restaurant firms were also much lower than their IPO prospectuses.

Surprisingly, many restaurant firms have also been delisted a few years after going public, although some firms remained public for a long time. This raises a

question: why do restaurant firms go public even though the costs are substantially higher than other options and potential post-IPO performance risks exist? Regardless of the varied motivations for an IPO, firms obtain significant IPO proceeds when they issue new stocks that can then be used for rebalancing capital structures (Pagano et al., 1998) or for further growth (Ritter & Welch, 2002). Undeniably, substantial cash inflows after an IPO can benefit a firm's operational and financial flexibility. However, this raises another question: why have past studies reported underperforming operations after an IPO even though the firm should be able to exploit the benefits of a substantial financial surplus due to the IPO? The empirical evidence for post-IPO stock performance does not clearly answer this critical question.

To better answer these questions, this study linked restaurant firms' pre- and post-IPO financial conditions with how IPO proceeds were used, which makes this study unique and significant. Post-IPO accounting information can suggest important clues about motivations for IPOs for two reasons (Pagano et al., 1998). First, identifying real business and financial conditions may not be possible using only pre-IPO information due to firms' window-dressing their operational performance prior to going public. Thus, post-IPO information should be used as complementary evidence to understand an IPO firm's pre-IPO conditions more accurately. Second, management's intentions for an IPO may not be fully understood before an IPO, but ex-post accounting information may implicitly or explicitly reveal why a firm pursued the IPO. The usage of IPO proceeds is another vital piece of accounting information that can connect a firm's IPO motivations to performance. Thus, the strategic directions and phases of an IPO firm can be understood by tracing back the usage of IPO proceeds over time.

Despite the numerous benefits of post-IPO accounting information, the majority of past studies have focused on firms' post-IPO stock performance (Ritter, 1991; Jain & Kini, 1994). Therefore, this study aimed to fill these research gaps by investigating restaurant firms' pre-IPO and post-IPO accounting information and how IPO proceeds were used. More specifically, the objective of this study was to identify restaurant firms' motivations for going public using firms' pre- and post-IPO accounting information. In addition, this study intended to directly connect those IPO motivations with post-IPO performance by tracing back the usage of IPO proceeds. This study also aimed to detect factors that contribute to whether an IPO restaurant firm remains public for the long term or is delisted or merged not long after the IPO. Hence, this study is expected to broaden the existing literature and is exploratory in nature. By achieving these objectives, shareholders could have a better understanding of the risks involved in the strategic directions of IPO firms. This enhanced understanding could prevent tragic investment decisions.

## **2. Literature review**

### *2.1 Motivations for IPOs*

Going public is one of the most important financial and strategic decisions for private firms. The decision significantly changes firms' financial conditions and business strategies (Mikkelsen et al., 1997; Alavi et al., 2008). On one hand, large amounts of capital inflows from an IPO can benefit a firm's operational and financial flexibility. On the other hand, firms have to disclose their business to the public and ownership stakes

are diluted once a considerable number of new shares are issued. Financial theories explain that firms go public for various reasons or incentives, such as to overcome loan constraints (Pagano et al., 1998; Bancel & Mittoo, 2009), finance investments (Ritter & Welch, 2002), increase stock liquidity (Black & Gilson, 1998), facilitate acquisitions (Kumar & Ramchand, 2008), improve investor recognition (Merton, 1987), and enhance external monitoring (Pagano & Roell, 1998). In contrast, going public could also produce some problems, such as adverse selection costs (e.g. underpricing IPOs to keep investors in the market uninformed through information asymmetry between outside investors and inside managers) (Brealy et al., 1977), loss of confidentiality (Yosha, 1995), and loss of control (Burkart et al., 2003).

Among these various incentives for IPOs, reducing financial constraints and raising capital for growth were the most frequently cited motivations for going public (Pagano et al., 1998; Brau & Fawcett, 2006; Bancel & Mittoo, 2009; Alsan & Kumar, 2011). These two most important motivations for IPOs can be identified by examining firms' capital structures before and after going public. For instance, Degeorge and Zeckhauser (1993) revealed that firms that went public through reverse-leverage buy out (LBO) tended to be more highly financially leveraged than common IPO firms. Thus, the primary motivation for going public in reverse-LBO firms was debt reduction rather than raising capital for growth opportunities. Although reverse-LBO is a special type of IPO and differs from common IPOs in terms of motivation and procedures, Degeorge and Zeckhauser's (1993) findings highlighted that pre-IPO capital structures can be a critical determinant of whether a firm goes public.

According to Pagano et al.'s (1998) widely-cited study of IPO motivations, firms primarily go public to rebalance their capital structure after large investments rather than to finance future investment or growth. More specifically, they revealed that independent IPO firms' financial leverage and capital investments significantly declined after an IPO but did not find any significant changes in sales growth after going public. In addition, they provided evidence that the cost of credit decreased significantly for firms after an IPO due to improved access to an alternative source of external funds. Based on optimal capital structure theory (Modigliani & Miller, 1963), if a firm is too leveraged its bankruptcy costs increase. Thus, equity financing would be a better choice. In this context, if firms achieve successful growth predominantly due to large debt financing, then an IPO would be a good option for rebalancing their financial structures.

In contrast, Aslan and Kumar (2011) suggested capital investments increase the probability of going public. They indicated that IPO firms continually increase capital investments not only during the first 5 years after an IPO but also beyond that time period, which is contrary to Pagano et al. (1998). Instead, Aslan and Kumar (2011) suggested that firms' main motivation for going public is to finance capital investments for growth. Similarly, Kim and Weisbach (2008) highlighted the fact that firms' capital structures significantly change within a short time period after an IPO. They noticed that firms retain the largest portion of funds raised from an IPO as cash for at least 4 years. Over the years firms use the cash from IPOs for R&D and capital expenditures rather than paying off existing long-term debts. Specifically, Kim and Weisbach (2008) examined the use of IPO proceeds over time and indicated that investment financing was one of the primary motivations for IPOs.

Along with pre-IPO capital structures, firms' post-IPO capital structures provide complementary evidence concerning motivations for going public. Particularly, firms' post-IPO accounting information allows researchers to link IPO motivations and strategic management decisions. For example, if a firm has a strong motivation to grow through an IPO, then their capital expenditures would significantly increase after an IPO. That is, the amount of capital investments after an IPO is a good indicator of growth. In contrast, if a firm is under severe financial stress, then cash raised from an IPO would be used to retire existing debts. Thus, the amount of retired debt represents the degree of financial burdens. Consequently, a firm's financial leverage and asset size would change depending on their motivations for the IPO. Therefore, variances in pre- and post-IPO measures from financial statements should be simultaneously and comprehensively investigated to capture a better picture of the motives that drive IPOs.

## *2.2 Long-term performance of initial public offerings*

If the manager of an IPO firm was asked why they wanted to go public, the typical reply would be, "we needed money." Thus, the logical next question should be, "what do you need the money for?" Surprisingly, other than a few studies (e.g., Kim & Weisbach, 2008; Wyatt, 2014, and Andriansyah & Messinis; 2016), little research has addressed this fundamental question concerning how firms actually use the capital raised from IPOs.

According to Mikkelsen et al. (1997), firms tend to raise considerably large amounts of capital, even above their book value of assets, through IPOs (\$7.9 million vs. \$5.8 million). Thus, IPOs result in substantial changes to a firm's financial and



operational flexibility. However, a firm's post-IPO performance is also influenced by how IPO proceeds are used (Wyatt, 2014; Andriansyah & Messinis, 2016). For example, if a firm uses the proceeds for capital investment, research and development, or advertising, then the firm's debt level would not decrease but their assets and sales may grow quickly. In contrast, if a firm uses the proceeds to pay off existing debts, then the firm's financial leverage would significantly decrease but its sales would not significantly increase. In this regard, the IPO itself would immediately change a firm's financial structures, while post-IPO performance depends on how IPO proceeds are used. Thus, it is evident that the impact of an IPO on long-term performance can be differentiated by how firms use the capital from IPOs.

Jain and Kini (1994) suggested that IPO firms showed a decline in both operating profits over assets and operating cash flows over assets after the IPO compared to pre-IPO levels. In addition, they also identified increases in sales growth and capital expenditures above pre-IPO levels. Combining these two findings suggests that a decline in post-IPO operating performance is not caused by lack of growth opportunities or cutbacks in capital investment after the IPO. Instead, the operating performance of IPO firms was higher before going public, which signifies that firms may exploit window dressing to carry out an IPO. However, they also pointed out that the operating performance of IPO firms continuously improved over time even though their post-IPO operating performances significantly declined for a few years after the IPO. Therefore, even though more studies have supported a decline in post-IPO operating performance, the true effects of IPOs on operating performance still remain unclear.

Mikkelson et al. (1997) also examined IPO firms' overall capital structures and suggested that they did not significantly change after going public except for an increase in asset size. Mikkelson et al. (1997) explained that firms' current assets and fixed assets over total assets did not significantly change from pre-IPO to 10 years after the IPO, despite a drastic increase in total assets. However, there was a sizable drop in the ratio of liability over total assets between the pre-IPO year and 1 year after the IPO. Consequently, they confirmed that declines in operating performance were limited to the first year of the IPO. In fact, after controlling for industry and size effects no further decline occurred between 2 and 10 years after public trading. These findings signify that when a firm goes public mainly to reduce financial burdens, it does not change the firms' fundamental operational practices and, thus, long-run operational performance does not deteriorate significantly.

From another angle, little attention has been paid to the relationship between the use of IPO proceeds and its impact on a firm's post-IPO performance. While most studies focused on post-IPO stock returns, this study instead used accounting information. Past studies found significant underperformance relative to the stock market during the three-to five-year period following an IPO (Brav et al., 2000; Alvarez & Gonzalez, 2005; Chen et al., 2013). IPO firms' underperformance in terms of stock returns is not limited to developed countries such as the United Kingdom, Germany, Switzerland, and Australia but has also been found in developing countries such as Brazil, Chile, and Singapore (Finn & Higham, 1988). Thus, the long-term underperformance of stock returns is predominant in IPO firms regardless of the economic development of the country. Underperforming stock returns have also been identified in the restaurant industry in

either the short term (Canina, 1996) or long term (Ozdemir, 2017; Ozdemir & Kizildag, 2017). Nevertheless, previous studies have not examined operational performance from both pre- and post-IPO perspectives.

However, Ritter (1991) pointed out that significant underperformance of stock returns during the first three years after an IPO was due to the worst post-IPO performing firms pulling down the average long-run performance of the sample. Similarly, Hensler et al. (1997) argued that post-IPO performance is related to the probability of survival. Accordingly, underperformance was most severe for small and young firms (Brav & Gompers, 1997; Houge et al., 2001). Later, Bhabra and Pettway (2003) confirmed that overall poor stock returns for IPO firms were driven mainly by extremely underperforming firms that failed to survive. In this respect, it is necessary to distinguish firms that have stayed public for long time periods from firms that were delisted within a short time period after an IPO. Therefore, this study intended to verify the causes of negative post-IPO performances by examining the uses of IPO proceeds and investigating extremely underperforming firms separately.

### **3. Methodology**

#### *3.1. Samples and data*

This study used pre-IPO and post-IPO financial data for U.S. restaurant firms from the COMPUSTAT database with a Standard Industry Code (SIC) of 5812 that went public between 1982 and 2015. This study included restaurant firms' pre-IPO (only t-1 year) and post-IPO (from t+1 year to delisted year or t+n year) financial information from

1981 to 2017. 188 firms that did not have a record of an IPO year (168 firms) or financial information on cash, revenues, total assets, short-term liabilities, or long-term debts in a pre-IPO or post-IPO year (20 firms) were excluded, while 1,393 observations from 125 restaurant firms were included. The final sample comprised 1,347 firm-year unbalanced panel data for 121 restaurant firms after deleting observations with variables in the 1<sup>st</sup> and 99<sup>th</sup> percentiles in order to alleviate the effect of extreme values in the sample.

### *3.2 Variables and models*

#### *3.2.1. Random-effects regression analysis*

In order to check post-IPO performances, this study used a number of dependent variables. Net profit over total assets (ROA) and net profits over revenue (ROS) were both used as dependent variables. This study also used the ratios of cash, short-term liabilities, long-term debts, total liabilities, capital expenditures, and retired long-term debts over total assets as dependent variables to examine changes in financial conditions from pre-IPO to post-IPO. All models used total assets as a denominator after subtracting the amount of cash on hand to eliminate the effect of substantial cash increments the year the IPO occurred.

In addition, the ratios of operating expenses and non-operating expenses over sales were used as dependent variables to identify changes in operational efficiency after an IPO. Lastly, the turnover ratios of total assets (total assets-cash) and other assets (total assets-cash-PPENT (net amounts of property, plant, & equipment)) were used as dependent variables to estimate the efficiency of asset management after an IPO.

In all models, the independent variables were all dummy variables equal to 1 if  $t$  is the IPO year, as shown in model (1):  $\beta_0$  for the IPO year ( $IPO_{t+0}$ ),  $\beta_1$  for 1 year after the IPO ( $IPO_{t+1}$ ),  $\beta_2$  for 2 years after the IPO ( $IPO_{t+2}$ ),  $\beta_3$  for 3 years after the IPO ( $IPO_{t+3}$ ), and  $\beta_4$  for more than 3 years after the IPO ( $IPO_{t+n}$ ). In all models, the condition of the firm in the pre-IPO year was used as a basis for comparison after the IPO. This study focused on changes in accounting measures within the first 3 years after an IPO because restaurant firms were expected to use most of their IPO proceeds during the year the IPO occurred or the following year. First, a Hausman test was performed to choose between Fixed-effects and Random-effects models. The test results showed that the unobserved errors ( $u_i$ ) were not correlated with the regressors and, thus, the models preferred random effects to fixed effects ( $\chi^2 = 0.20$ , p-value>0.10 for ROA;  $\chi^2 = 2.08$ , p-value>0.10 for short-term debts;  $\chi^2 = 2.61$ , p-value>0.10 for long-term debts;  $\chi^2 = 9.04$ , p-value>0.10 for capital investment). In all models, the cluster-robust standard errors were used to obtain heteroskedasticity-robust estimators.

$$Y_{it} = \alpha + \sum_{j=0}^3 \beta_j * IPO_{t+j} + \beta_4 * IPO_{t+n} + u_i + d_t + \varepsilon_{it} \quad (1)$$

### 3.2.2. Logistic regression analysis

This study also used logistic regression analyses to identify why restaurant firms delist within short time periods (less than 5 years) after going public, as shown in model (2). The dependent variable in the logistic regression was a dummy variable coded 1 for restaurant firms that stayed public for 5 years or more after an IPO and 0 for restaurant firms that were delisted or merged (i.e., merged firms were separated from the delisted

model) within 5 years after an IPO. This study used 5 years after an IPO as the separating criterion because the majority of firms that were delisted did so within 5 years after their IPO. Further, the number of delisted firms dropped noticeably after 5 years, as shown in Figure 1. Among the 84 delisted restaurant firms, 39 companies were delisted within 5 years (46.4%). More specifically, approximately three out of ten IPO restaurant firms were delisted within 5 years after going public (32.2% or 39 out of 121 firms), while more than half of IPO restaurant firms were delisted within 10 years (66.7% or 56 out of 121). Ratios of cash, short-term liabilities, long-term debts, and capital expenditures over total assets were all independent variables used to measure the impact of financial management strategies on whether or not a firm remains public after an IPO. In addition, the ratios of operating expenses, SG&A (selling, general, & administrative expenses), and non-operating expenses over sales were used to examine the effects of operational performance on the probability of remaining public after an IPO. We also used the ratio of sales over other assets (total assets-cash-PPENT), including current assets, as a proxy for the efficiency of other assets on revenue. Lastly, firm size was controlled with the natural log of total assets.

(Insert Figure 1 here)

In this model, OPEX was the ratio of operating expenses over sales. SG&A was the ratio of selling, general, and administrative expenses over sales. Non-OPEX was the ratio of the difference between earnings before interest and taxes (EBIT) and net profits over sales. STL was the ratio of short-term liabilities over total assets after subtracting

cash, while LTD was the ratio of long-term debts over total assets after subtracting cash. Otherassetturnover was the turnover ratio of other assets excluding cash and PPENT (Sales/Other assets). CAPEX was capital expenditures over total assets excluding cash, while Size was the natural log of total assets. The model was developed by combining the ratios of financial conditions (Cash, STL, LTD, CAPEX, and Size), profitability including non-operating expenses (OPEX, SG&A, and NonOPEX), and operating efficiency (Otherassetturnover) to reflect the specific aspects of the restaurant industry. All variables are summarized in table 1. The following model was estimated to determine the probability of a firm staying public for 5 years or more after an IPO:

$$\text{Log}\left(\frac{1-p}{p}\right)_i = \alpha + \beta_1 \text{OPEX}_i + \beta_2 \text{SG\&A}_i + \beta_3 \text{NonOPEX}_i + \beta_4 \text{Cash}_i + \beta_5 \text{STL}_i + \beta_6 \text{LTD}_i + \beta_7 \text{Otherassetturnover}_i + \beta_8 \text{CAPEX}_i + \beta_9 \text{Size}_i \quad (2)$$

(Insert Table 1 here)

## 4. Results

### 4.1 Descriptive financial information

Table 2 shows descriptive information about the financial conditions before and after each firm's IPO. Both net profits over assets (ROA) and net profits over sales (ROS) for IPO firms were slightly higher than pre-IPO conditions until 2 years after an IPO. More specifically, the ratio of operating expenses over sales was slightly lower than pre-

IPO levels until 2 years after an IPO. Yet the ratio of non-operating expenses over sales was higher than pre-IPO levels during the same periods.

The most noticeable changes after going public were observed in firms' financial leverage ratios, which decreased drastically after going public. The short-term liabilities ratio decreased by 14.38% (from 38.71% to 24.33%), while the long-term debt ratio declined by 16.67% (from 35.40% to 18.73%) in the IPO year. Consequently, financial leverage was reduced by 31.18% (from 81.15% to 49.97%) in the IPO year. The figures showed that restaurant firms use the capital raised from IPOs to reduce long-term debts and repay short-term liabilities. As a result, interest expenses decreased until 1 year after an IPO (from 3.20% to 2.37% and 1.78%). The second major change after going public was the large amount of capital expenditures in the IPO year (29.02%) and the year following (27%) the IPO. Overall, the results showed that restaurant firms used most of their IPO proceeds to either retire their debts in the IPO year (t) or increase capital investments until the year following (t and t+1) an IPO.

(Insert Table 2 here)

#### *4.2 Random-effects Regression analyses of all IPO restaurant firms*

As shown in Table 3, overall restaurant firms' net profitability over total assets (ROA) decreased in years 1 to 3 after an IPO. However, net profitability over sales (ROS) did not change significantly compared with pre-IPO levels. The coefficients of the post-IPO year dummy for ROS showed both positive and negative signs although they were not statistically significant. Why did ROA and ROS differ? ROA could decrease



without decreasing ROS if a firm's inefficient assets increased. This proposition was supported by significantly decreased total asset turnover ratios after an IPO (-0.3815 in year 0, -0.5458 in year 1, and -0.4159 in year 2). Inefficiency was also found in the turnover ratio of other assets, excluding PPENT (-2.0247 in year 0, -2.5135 in year 1, and -1.5056 in year 2).

More specifically, operating expenses over sales did not significantly differ from pre-IPO levels, except for the IPO year. In the IPO year operating expenses decreased by 2.51%, but non-operating expenses over sales increased by 1.00% at the same time. Non-operating expenses over sales showed all positive signs and increased continuously after an IPO (0.98% in year 1, 1.18% in year 2, and 4.15% in year 3), although the changes in operating expenses were not statistically significant. In this regard, while this study examined restaurant firms, its results were similar to Jain and Kini's (1994) in that the decrease in firms' ROAs after an IPO was mainly due to an increase in inefficient assets that did not generate corresponding sales.

The biggest change in IPO firms' financial structures was their financial leverage. The ratios of short-term liabilities and long-term debts decreased significantly after an IPO. The ratio of long-term debts decreased by 16.60% in the IPO year, while the ratio of short-term liabilities decreased by 14.73% in the IPO year. In addition, the ratios of short-term liabilities and overall financial leverage were persistently lower than pre-IPO levels even 3 years after an IPO (-9.98% and -10.62%, respectively). Results indicated that restaurant firms' large amounts of short-term liabilities (38.71%) and long-term debts (35.40%) before going public could have been severe financial burdens that they sought to remove. The decrease in short-term liabilities was larger than the decrease in long-term

debts for the whole period except the IPO year itself. Consequently, interest expenses decreased continuously even 3 years after an IPO. Thus, this study confirmed that reducing financial burdens was the most important motivation for restaurant firms' IPOs.

The other noticeable change in post-IPO firms was that they had much larger capital expenditures (4%) in the IPO year relative to the pre-IPO year. However, this increase in capital expenditures did not continue after the IPO year. Instead, the ratios of capital expenditures decreased starting 2 years after an IPO (-5.54% in year 2, -7.90% in year 3, -12.65% more than 3 years after an IPO). The results showed that restaurant firms used IPO proceeds for capital expenditures for a short period after an IPO, which indicates that financing capital investments was only a minor motivation for restaurant firms' IPOs.

(Insert Table 3 here)

#### *4.3 IPO restaurant firms remaining public for less than 5 years after an IPO vs. 5 years or more*

Despite improved financial conditions, including lower interest expenses, restaurant firms' operational performances were not enhanced after an IPO. But why is this the case? To answer this question, this study further investigated restaurant firms' accounting variables after separating firms that stayed public for 5 years or more from firms that were delisted within 5 years after going public. Further, firms that experienced significantly poor post-IPO performances could be misleading in terms of overall post-

IPO performance. Thus, this study divided restaurant firms into two sub-groups based on past studies (e.g., Hensler et al., 1997; Bhabra & Pettway, 2003).

As shown in Table 4, the coefficients of the IPO year dummy for ROA were not statically significant for firms remaining public beyond 5 years, except 1 year after the IPO (-6.98% and significant at 10% level). In contrast, ROA significantly decreased until 3 years after the IPO for firms that were delisted within 5 years (-9.74 % in year 1, -16.77% in year 2, and -15.69% in year 3 and they were statistically significant). Thus, the results of this study indicated that deterioration of ROA is a critical reason firms were delisted within 5 years after their IPO. Nevertheless, ROS did not significantly differ between pre-IPO and post-IPO at all in either sub-group.

Meaningful contrasts between the two groups were found in other accounting ratios as well. First, firms that stayed public over 5 years reduced more long-term debts than short-term liabilities (-18.78% vs. -11.70% in the IPO year), while firms that were delisted within 5 years reduced more short-term liabilities than long-term debts (-19.69% vs. -18.78% in the IPO year). The differences continued to persist even 3 years after an IPO. For firms that were delisted within 5 years, the decrease of the long-term debt ratio was significant only in the IPO year. In contrast, the decrease in long-term debts was statistically significant at the 1% level for the whole period for firms that remained public more than 5 years after their IPOs. Accordingly, interest expenses significantly decreased after an IPO only for firms that remained public for 5 years or more, but not for firms that were delisted within 5 years.

Second, firms that remained public for 5 years did not use as much of their IPO proceeds for capital expenditures. Capital expenditures increased by only 2.19% in the

IPO year compared to pre-IPO levels, which was not statistically significant. Instead, the main use for IPO proceeds was to reduce long-term debts and short-term liabilities. Not surprisingly, total assets turnover and other assets turnover ratios did not significantly decrease except in the IPO year. In contrast, firms that were delisted within 5 years appeared to use much of their IPO proceeds for capital expenditures. Thus, their capital expenditures significantly increased by 7.96% in the IPO year compared to pre-IPO conditions. Consequently, total assets turnover and other assets turnover ratios significantly decreased during the whole period after the IPO. Interestingly, non-operating expenses significantly increased years 1 through 3 (4.32 in year 1, 5.46 in year 2, and 7.40% in year 3) only for firms that were delisted within 5 years.

(Insert Table 4 here)

#### *4.4 Logistic regression analyses: IPO restaurant firms remaining public 5 years or more vs. firms that were delisted (or merged) within 5 years after an IPO*

To check the robustness of the above results, this study used logistic regression to identify the factors related to firms remaining public for 5 years or more after their IPO versus firms that were delisted within 5 years after their IPO. Table 5 shows that non-operating expenses (-4.4793), long-term debts (-1.4490), and operating expenses (-1.9797) significantly decreased the probability of a restaurant firm staying public more than 5 years after an IPO. Conversely, this also means that significant increases in non-operating expenses, long-term debts, and operating expenses increased the chances of a restaurant firm being delisted within 5 years after an IPO. In contrast, turnover ratio of

other assets (0.0747) and firm size (1.3105) significantly increased the probability of a restaurant firm staying public more than 5 years after an IPO. Surprisingly, capital expenditures were not a significant determinant of delisting (business failure) within 5 years after an IPO.

Therefore, if the results of Tables 4 and 5 are interpreted in a consolidated way, small restaurant firms were more likely to be delisted (fail) after an IPO if they faced deterioration of profitability (an increase in operational and non-operational expenses) and financial burdens (long-term debts) but not due to rapid increases in capital expenditures compared with their counterparts. Specifically, non-operating expenses turned out to be the most serious challenge to remaining public after an IPO. In addition, long-term debts were a severe financial hurdle for restaurant firms remaining public in the long term, but short-term liabilities were not. Both Tables 4 and 5 show that restaurant failures within a short-time period after an IPO could be due to difficulties in refinancing long-term debts, which also increases non-operating interest expenses.

Furthermore, this study used the same logistic regression model with firms that were merged within 5 years after an IPO. The results differed from firms that were delisted (failed) within 5 years after an IPO. Operating expenses (-11.3301), amount of cash (-2.5679), short-term liabilities (-4.1345), and capital expenditures (-3.1092) significantly decreased the probability of a restaurant firm merging within 5 years after an IPO. Long-term debts, turnover ratio of other assets, and firm size were not significant determinants of mergers, which differs from delisted firms. That is, difficulties refinancing long-term debts were not a critical issue for restaurant firms that were merged within 5 years after an IPO. Instead, liquidity issues from increased operating expenses,

short-term liabilities, or capital investments were the major reasons for being merged. Therefore, this study revealed that restaurant firms that remained public more than 5 years after an IPO had different post-IPO operational and financial features from both restaurant firms that were delisted within 5 years after an IPO and restaurant firms that were merged within 5 years after an IPO.

(Insert Table 5 here)

## **5. Conclusions and discussions**

### *5.1 Summary of findings*

This study examined restaurant firms' post-IPO performance to understand which pre-IPO factors and IPO motivations impact firms' various post-IPO performances, including staying public for the long term or being delisted or merged. Firstly, this study confirmed that reducing financial burdens and financing for capital investments were two important motivations for IPOs in the restaurant industry. More specifically, by tracing back IPO firms' post-IPO accounting information this study revealed that rebalancing financial structures was the most important reason to go public (Pagano et al., 1998; Bancel & Mittoo, 2009), whereas financing future growth turned out to be only a minor motivation for restaurant firms. Before going public, restaurant firms had very high financial leverage (75% of total assets) with more short-term liabilities than long-term debts (30% vs. 27% of total assets). Restaurant firms needed equity financing in order to balance the unfavorable financial conditions of debt financing (13% of total assets) and capital investments (20% of total assets) in pre-IPO years.

Secondly, this study identified that post-IPO performance significantly differed among restaurant firms not only by their pre-IPO financial conditions but also by how they used IPO proceeds. In addition, restaurant firms tended to use IPO proceeds mainly to reduce their short-term and long-term debts. In this case, post-IPO performance (ROA and ROS) did not change much from pre-IPO conditions, but they remained public more than 5 years after an IPO. On the other hand, when restaurant firms used IPO proceeds mostly for capital investments (or growth) rather than paying off existing debts (or improving financial flexibility), their post-IPO performance (ROA) was significantly worse compared to pre-IPO levels. Consequently, these firms were more likely to be delisted within 5 years after an IPO. Among the 121 IPO restaurant firms, 39 (32.2%), or approximately three out of ten IPO restaurant firms, were delisted within 5 years and 56 (66.7%) were delisted within 10 years (refer to Figure 1). Delisted IPO restaurant firms showed substantially decreased turnover ratios in total assets and other assets after an IPO, which could be explained by the existence of pressure for high growth (Jain & Kini, 1994) or agency costs (Jensen & Meckling, 1976). The findings revealed that the pressure from investors for high growth forced IPO restaurant firms to continue investing in even less prominent projects, which caused insufficient sales growth after an IPO and the restaurant's failure.

Lastly, this study identified that the financial conditions and post-IPO performance of delisted restaurant firms significantly differed from those of restaurant firms that were merged within 5 years after an IPO. More specifically, an increase in capital expenditures was not a direct cause for delisting (failure), whereas it was a significant cause of mergers and acquisitions. Firms delisted within 5 years after an IPO

did not have substantial capital expenditures after an IPO but instead had small firm size, inefficiency in non-operating expenses (including interest expenses), and other assets with heavy financial burdens in long-term debts after the IPO. In contrast, inefficiency of non-operating expenses, low turnover ratio of other assets, and massive financial burdens from long-term debts were not observed in firms that merged within 5 years after an IPO even though they significantly increased capital expenditures. Instead, merged firms showed liquidity concerns, such as holding more cash, increased short-term liabilities, and higher operating expenses, compared to firms that remained public.

In summary, IPO restaurant firms' depressed profitability, inefficient non-operating expenses, and difficulties in generating revenue after fast growth augmented their financial burdens and led to business failure within a short time period after an IPO. Hence, smaller restaurant firms with large amounts of long-term debt showed a significantly lower probability of remaining public more than 5 years after an IPO compared to larger restaurant firms with small amounts of long-term debt. In contrast, the reason for being merged within 5 years after an IPO was limited liquidity due to large short-term liabilities and increased major operating expenses together with increases in capital expenditures.

## *5.2 Implications*

This study provided various findings in relation to IPO restaurant firms. The financial condition of very high financial leverage in pre-IPO restaurant firms was consistent with the pecking order theory: the restaurant firms tended to initially use internal and debt financing before using costly equity financing (Shyam-Sunder & Myers,



1999; Frank & Goyal, 2003). According to Kizildag and Ozdemir (2017), the hospitality firms tended to use more debt than firms in other industries when they exhausted funds for capital investment. However, the higher level of short-term liabilities than long-term debts clearly indicated the serious difficulty of debt financing in the restaurant industry. Under this circumstance, the cost of financial constraint would be larger than the cost of equity financing. Therefore, both findings showed the evidence that restaurant firms mostly went public to overcome financial constraints despite the higher cost of equity financing than internal or/and debt financings.

This study also proved the usefulness of accounting measures to connect the motivations for restaurant firms' IPOs and post-IPO performance. Specifically, the uses of IPO proceeds could provide complementary information about the management's intentions for the additional capital (Wyatt, 2014; Andriansyah & Messinis, 2016). Conversely, management's motivations for IPOs were closely related to how the capital was used, which eventually impacted post-IPO performance. Although various theories, such as the winner's curse (Rock, 1986), signaling (Allen & Faulhaber, 1989), and market incompleteness (Mauer & Senbet, 1992), have been proposed to explain the underperformance of stock returns after IPOs, those studies were not directly linked to firms' operational performances.

In this regard, this study contributed to the literature in that it explained the relationship between IPO motivation and post-IPO performance well with the multifaceted comparisons of restaurant firms' pre- and post-IPO financial conditions in conjunction with the usages of IPO proceeds. Furthermore, the approaches were also beneficial for enhancing the shareholders' awareness of the IPO firms' strategic

directions and their potential risks and/or challenges: they explained different post-IPO business practices between restaurant firms that were staying public for the long-term and delisted or merged within 5 years. To the best of our knowledge, this study is the first to examine the effects of IPOs on restaurant firms' operational, non-operational, investment, and financial activities on firm performance.

### *5.3 Limitations and future studies*

Even though this study makes several contributions, some limitations were unavoidable. First, accounting information is ultimately limited in identifying the motivations for IPOs. Thus, the scope of motivations for an IPO did not extend to facilitating acquisitions, improving investor recognition, or enhancing external monitoring. Further, this study examined firms that stayed public, were delisted, or merged separately, but did not examine whether the IPO motivated the merger or the business failure (e.g., being delisted). In general, firms with a better financial status can carry more long-term debts than their counterparts. However, this study did not directly test why restaurant firms with large amounts of long-term debt had a much lower chance of staying public 5 years after an IPO because it was beyond the objectives of this study. Also, although the restaurant firms showed interesting capital investment practices through the IPO process, such as a huge increase in capital expenditures just before an IPO and then a drastic drop off in following years, this study did not examine the reasons for these practices. However, these topics would be valuable for future studies to examine.

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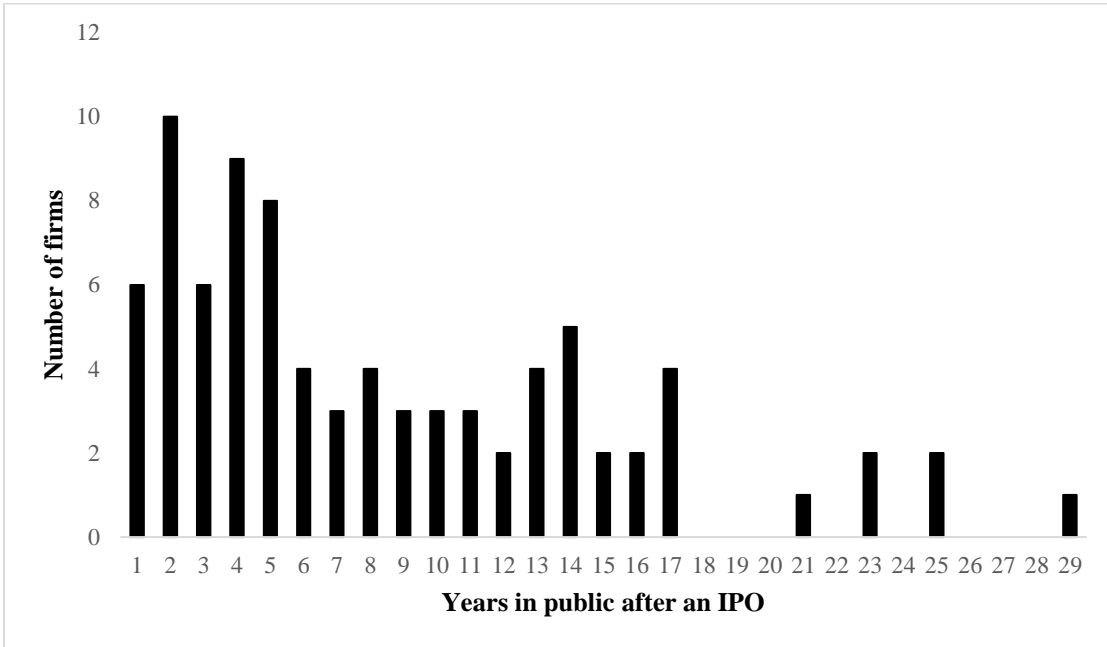
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**Figure 1. Years in public after an IPO (all delisted IPO firms)**



**Table 1. Summary of variables**

Measurement	Variable
Changes in IPO performance	ROA (Net profit / Total assets) ROS (Net profit / Revenue)
Changes in financial conditions	Short term liability / (Total assets-Cash) Long term liability / (Total assets-Cash) Total liabilities / (Total assets-Cash) Capital expenditure / (Total assets-Cash) Retired long-term debts / (Total assets-Cash)
Changes in profitability	Operating expenses / Sales Non-operating expenses / Sales Interest expenses / Sales
Changes in efficiency (turnover ratios)	Sales / (Total assets-Cash) Sales / (Total assets-Cash-PPENT)

**Table 2. Financial information for restaurant firms during pre- and post-IPO periods**

	Pre-IPO vs. Post-IPO						
	T-1	T	T+1	T+2	T+3	T+4	T+5
ROA	0.0071	-0.0149	-0.0690	-0.0554	-1.4127	-0.0599	-0.0664
ROS	-0.0563	-0.0416	-0.0761	-0.0383	-0.0770	-0.0189	-0.0331
Total Sales	261.13	269.14	300.81	340.33	360.07	414.18	511.73
ST liabilities/(TA-Cash)	0.3871	0.2433	0.2235	0.2183	0.4506	0.2537	0.2604
LT debts/(TA-Cash)	0.3540	0.1873	0.2003	0.2361	0.2178	0.1986	0.2025
Total liabilities/(TA-Cash)	0.8115	0.4997	0.4970	0.5300	0.7573	0.5471	0.5675
Operating expenses/Sales	0.7746	0.7470	0.7642	0.7681	0.7738	0.7739	0.7772
Non-operating expenses/Sales	0.0376	0.0476	0.0463	0.0478	0.0767	0.0508	0.0684
Interest expenses/Sales	0.0320	0.0237	0.0178	0.0181	0.0203	0.0188	0.0231
CAPEX/(TA-Cash)	0.2478	0.2902	0.2700	0.1973	0.1791	0.1738	0.1668
Observations	118	118	114	109	98	83	68

Note: ROA is net profit over total assets; ROS is net profit over total assets; ST is short-term; LT is long-term; TA is total assets; CAPEX is capital expenditures; T-1 is pre-IPO year, T is the IPO year and T+5 is 5 years after the IPO.



**Table 3. Random-effects regression analysis of all IPO firms**

Post-IPO Performances (Dependent variables)	Year of and after IPO				
	T	T+1	T+2	T+3	T+3>
ROA	-0.0220 (0.0207)	<b>-0.0761**</b> <b>(0.0324)</b>	<b>-0.0626**</b> <b>(0.0317)</b>	-1.4199 (1.3273)	0.1195 (0.1217)
ROS	0.0216 (0.0203)	-0.0086 (0.0299)	0.0204 (0.0228)	-0.0192 (0.0290)	0.0340 (0.0218)
ST liabilities /(TA-Cash)	<b>-0.1473***</b> <b>(0.0228)</b>	<b>-0.1977***</b> <b>(0.0409)</b>	<b>-0.1986***</b> <b>(0.0446)</b>	0.0350 (0.1908)	<b>-0.0998***</b> <b>(0.0332)</b>
LT debts /(TA-Cash)	<b>-0.1660***</b> <b>(0.0235)</b>	<b>-0.1498***</b> <b>(0.0285)</b>	<b>-0.1168***</b> <b>(0.0284)</b>	<b>-0.0942***</b> <b>(0.0296)</b>	-0.0507 (0.0354)
Total liabilities /(TA-Cash)	<b>-0.3143***</b> <b>(0.0318)</b>	<b>-0.3466***</b> <b>(0.0500)</b>	<b>-0.3081***</b> <b>(0.0539)</b>	-0.0456 (0.1877)	-0.1062** (0.0451)
Operating expenses/Sales	<b>-0.0251***</b> <b>(0.0079)</b>	-0.0118 (0.0102)	-0.0048 (0.0114)	-0.0020 (0.0135)	0.0249* (0.0148)
Non-operating expenses /Sales	<b>0.0100*</b> <b>(0.0054)</b>	0.0098 (0.0086)	0.0118 (0.0097)	0.0415*** (0.0141)	0.0040 (0.0076)
Interest expense/Sales	<b>-0.0085***</b> <b>(0.0022)</b>	<b>-0.0142***</b> <b>(0.0048)</b>	<b>-0.0142***</b> <b>(0.0039)</b>	<b>-0.0119***</b> <b>(0.0042)</b>	<b>-0.0125***</b> <b>(0.0041)</b>
CAPEX /(TA-Cash)	<b>0.0400***</b> <b>(0.0155)</b>	0.0194 (0.0213)	<b>-0.0554***</b> <b>(0.0198)</b>	<b>-0.0790***</b> <b>(0.0226)</b>	<b>-0.1265***</b> <b>(0.0222)</b>
Retired long-term debts /(TA-Cash)	<b>0.1021***</b> <b>(0.0251)</b>	-0.0586** (0.0262)	-0.0217 (0.0379)	<b>-0.0568**</b> <b>(0.0266)</b>	0.0031 (0.0253)
Sales/(TA-Cash)	<b>-0.3815***</b> <b>(0.0905)</b>	<b>-0.5458***</b> <b>(0.1468)</b>	<b>-0.4159***</b> <b>(0.1465)</b>	0.2573 (0.6201)	-0.1536 (0.1389)
Sales/ (TA-Cash-PPENT)	<b>-2.0247***</b> <b>(0.5983)</b>	<b>-2.5135***</b> <b>(0.7646)</b>	<b>-1.5056*</b> <b>(0.8433)</b>	-1.1239 (1.0283)	<b>-2.0186**</b> <b>(1.0188)</b>
Observations	1,345				

Note: ROA is net profit over total assets; ROS is net profit over total assets; ST is short-term; LT is long-term; TA is total assets; CAPEX is capital expenditures; PPENT is net amount of property, plant, & equipment; Bracket is the value of robust standard errors; \*significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%.

**Table 4. Remaining public 5 years or more vs. within 5 years after an IPO**

Post-IPO Performances (Dependent variables)		Year of and after IPO				
		T	T+1	T+2	T+3	T+3>
ROA	≥5	-0.0123 (0.0198)	-0.0698* (0.0365)	<b>-0.0424</b> <b>(0.0295)</b>	<b>-1.8110</b> <b>(1.7130)</b>	0.0980 (0.1238)
	<5	-0.0407 (0.0424)	-0.0974* (0.0583)	<b>-0.1657**</b> <b>(0.0717)</b>	<b>-0.1569**</b> <b>(0.0764)</b>	-0.0874 (0.1117)
ROS	≥5	-0.0007 (0.0169)	-0.0122 (0.0306)	0.0273 (0.0176)	-0.0268 (0.0289)	0.0247 (0.0184)
	<5	0.0600 (0.0519)	-0.0190 (0.0722)	-0.0282 (0.0650)	-0.0235 (0.0751)	0.0651 (0.0680)
ST debts /(TA-Cash)	≥5	-0.1170*** (0.0252)	-0.1243*** (0.0264)	-0.1298*** (0.0279)	<b>0.1776</b> <b>(0.2916)</b>	<b>-0.0414</b> <b>(0.0507)</b>
	<5	-0.1969*** (0.0459)	-0.2227*** (0.0543)	-0.2038*** (0.0696)	<b>-0.2096***</b> <b>(0.0638)</b>	<b>-0.1862***</b> <b>(0.0606)</b>
LT debts /(TA-Cash)	≥5	-0.1878*** (0.0284)	<b>-0.1828***</b> <b>(0.0327)</b>	<b>-0.1686***</b> <b>(0.0296)</b>	<b>-0.1360***</b> <b>(0.0334)</b>	<b>-0.0775**</b> <b>(0.0387)</b>
	<5	-0.1230*** (0.0422)	<b>-0.0792</b> <b>(0.0520)</b>	<b>0.0207</b> <b>(0.0646)</b>	<b>0.0174</b> <b>(0.0577)</b>	<b>-0.0498</b> <b>(0.0478)</b>
Total liabilities /(TA-Cash)	≥5	-0.3010*** (0.0362)	-0.3367*** (0.0529)	-0.3222*** (0.0533)	-0.0096 (0.2548)	-0.0903** (0.0487)
	<5	-0.3405*** (0.0622)	-0.3165*** (0.0670)	-0.2011** (0.0905)	-0.1439 (0.0883)	-0.2470*** (0.0727)
Operating expenses /Sales	≥5	-0.0172** (0.0071)	-0.0048 (0.0084)	-0.0036 (0.0083)	0.0006 (0.0104)	0.0303** (0.0139)
	<5	-0.0406** (0.0187)	-0.0242 (0.0276)	-0.0003 (0.0358)	-0.0005 (0.0439)	0.0013 (0.0484)
Non-operating expenses /Sales	≥5	0.0062 (0.0059)	<b>-0.0064</b> <b>(0.0090)</b>	<b>-0.0069</b> <b>(0.0101)</b>	0.0261* (0.0157)	-0.0055 (0.0077)
	<5	0.0169 (0.0112)	<b>0.0432**</b> <b>(0.0194)</b>	<b>0.0546**</b> <b>(0.0232)</b>	0.0740*** (0.0287)	0.0047 (0.0862)
Interest expenses /Sales	≥5	<b>-0.0113***</b> <b>(0.0028)</b>	<b>-0.0220***</b> <b>(0.0044)</b>	<b>-0.0210***</b> <b>(0.0044)</b>	<b>-0.0193***</b> <b>(0.0048)</b>	<b>-0.0173***</b> <b>(0.0047)</b>
	<5	<b>-0.0033</b> <b>(0.0035)</b>	<b>0.0035</b> <b>(0.0127)</b>	<b>0.0018</b> <b>(0.0074)</b>	<b>0.0071</b> <b>(0.0088)</b>	<b>0.0006</b> <b>(0.0091)</b>
CAPEX /(TA-Cash)	≥5	<b>0.0219</b> <b>(0.0175)</b>	0.0128 (0.0210)	-0.0366* (0.0198)	-0.0590*** (0.0222)	-0.1152*** (0.0235)
	<5	<b>0.0796***</b> <b>(0.0305)</b>	0.0361 (0.0512)	-0.1153** (0.0461)	-0.1429** (0.0565)	-0.2256*** (0.0511)
Sales/(TA-Cash)	≥5	-0.2817** (0.1184)	-0.2971** (0.1515)	<b>-0.2091</b> <b>(0.1627)</b>	<b>0.6639</b> <b>(0.9050)</b>	0.0361 (0.1812)
	<5	-0.5094*** (0.1491)	-0.7164*** (0.1850)	<b>-0.4866**</b> <b>(0.1929)</b>	<b>-0.4408**</b> <b>(0.1950)</b>	-0.3375 (0.2239)
Sales/ (TA-Cash-PPENT)	≥5	-1.7489** (0.7352)	-1.8859** (0.9525)	<b>-0.6797</b> <b>(0.9837)</b>	<b>-0.3532</b> <b>(1.2497)</b>	-1.5697 (1.1683)
	<5	-2.5231** (1.0512)	-3.9093*** (1.2599)	<b>-3.6777**</b> <b>(1.6598)</b>	<b>-3.2783***</b> <b>(1.6341)</b>	-2.7576 (2.1128)
Observations		1,169 vs. 176				

Note: ROA is net profit over total assets; ROS is net profit over total assets; ST is short-term; LT is long-term; TA is total assets; CAPEX is capital expenditures; PPENT is net amounts of property, plant, & equipment; Bracket is the value of robust standard errors; \*significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%.

**Table 5. Logistic regression analyses: remaining public vs being delisted or merging**

	Remaining Public vs. Delisted (1)		Remaining Public vs. Merged (2)	
	$\beta$	Odds ratio	$\beta$	Odds ratio
Constant	1.6519* (0.9325)	5.2169* (4.8651)	11.0893*** (3.0357)	65466.97*** (198739.9)
Operating expenses/Sales	-1.9797** (0.9763)	0.1381** (0.1348)	-11.3301*** (3.5295)	0.00001*** (0.00004)
SG&A/Sales	-0.5846 (0.6496)	0.5573 (0.3620)	-1.4096 (1.1641)	0.2442 (0.2843)
Non-operating expenses/Sales	<b>-4.4793***</b> <b>(1.4697)</b>	<b>0.0113***</b> <b>(0.0167)</b>	<b>5.6418*</b> <b>(2.9423)</b>	<b>281.9817*</b> <b>(829.6677)</b>
Cash/(TA-Cash)	<b>-0.7833</b> <b>(1.3016)</b>	<b>0.4569</b> <b>(0.5947)</b>	<b>-2.5679**</b> <b>(1.2760)</b>	<b>0.0767**</b> <b>(0.0979)</b>
ST liabilities /(TA-Cash)	<b>1.3260</b> <b>(1.0688)</b>	<b>3.7661</b> <b>(4.0253)</b>	<b>-4.1345*</b> <b>(2.4368)</b>	<b>0.0160*</b> <b>(0.0390)</b>
LT debts /(TA-Cash)	<b>-1.4490**</b> <b>(0.6001)</b>	<b>0.2348**</b> <b>(0.1409)</b>	<b>-1.1033</b> <b>(0.8961)</b>	<b>0.3318</b> <b>(0.2973)</b>
Sales /(TA-Cash-PPENT)	<b>0.00747***</b> <b>(0.0252)</b>	<b>1.0776***</b> <b>(0.0272)</b>	<b>0.0442</b> <b>(0.0299)</b>	<b>1.0452</b> <b>(0.0312)</b>
CAPEX /(TA-Cash)	<b>0.2037</b> <b>(0.9951)</b>	<b>1.2259</b> <b>(1.2199)</b>	<b>-3.1092***</b> <b>(1.2060)</b>	<b>0.0446***</b> <b>(0.0538)</b>
Size (control variable)	<b>1.3105***</b> <b>(0.2825)</b>	<b>3.7080***</b> <b>(1.0474)</b>	<b>0.4133</b> <b>(0.3872)</b>	<b>1.5119</b> <b>(0.5854)</b>
Observations	358		225	
LR chi2 (10)	50.19***		33.75***	

Note: OPEX is operating expenses over sales; SG&A is selling, general, & administrative expenses over sales; NonOPEX is non-operating expenses over sales; STL is short-term liabilities; LTD is long-term debts; TA is total assets; ST is short-term; LT is long-term; PPENT is net amounts of property, plant, & equipment; CAPEX is capital expenditures; Size is log of total assets; Bracket is the value of robust standard errors; \*significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%.