

Indian Firms and Double Exit Strategy – An Empirical Analysis



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Using a large database of firms across all sectors (Manufacturing , Mining , Information Technology , Hotel ,Utility), we analyze the determinants of Initial Public Offering firms (IPO) getting merged in the first 5 years of going public .We understand the likelihood of getting merged with respect to Company Size , Age , Leverage , performance characteristics , sector , Industry concentration (HHI) using Sequential Logit model. Promoters of the firm take the firm to public first and then set it up for acquisition resulting in double exit/premium (Initial Public Offering and Acquisition premium) and serving as an innovative financial model especially in an uncertain environment

Keywords: Merger, Double Exit Strategy, Initial Public Offerings (IPO)

1. Introduction

Primary Securities market in India is emerging. We are seeing progressive trends in confidence of investors on the Initial Public Offering (IPO) market and overall participation of investors including, retail, foreign institutional investors with expectations of strong government coming into power has lifted retail investor mood. Securities and Exchange Board of India (SEBI) has recently brought in key primary market reforms to bolster retail participation. Market timing is an important factor for firms to go public and for the firm to maximize their proceeds. Recent trend shows that Initial Public Offerings (IPOs) has become one of the popular and dependable methods of raising capital.

Promoters of the firm/insiders might hold on to most of their stock and then sell their shares in an acquisition after company goes public. Hence within 3-5 years of the IPO date, Insiders are able to sell their shares at a higher price compared to other alternate exit strategies resulting in Double exit. IPO also establishes a firm's market value and leads to better price discovery in comparison to private targets as there may be a private firm discount. Acquirers are typically less aware of the existence of private targets because those targets are less visible and transparent to the investment community than public targets, and are therefore more difficult to locate as exchange partners and to value (Deeds, De Carolis, and Coombs, 1999). Hsieh, Lyandres, and Zhdanov (2011) further argue that an IPO benefits the firm as a potential acquisition target by resolving its value uncertainty thus enabling it to credibly communicate its value with the bidders.

In this paper, we examine a sample of private and public firms across selected industry groups (Manufacturing, IT, Utility, Hotels and Mining) and these firms based on percentage of firms getting merged grouped by Industry. We look at firm's financial parameters, HHI Index of the industry and Age of firms that went IPO and then eventually got merged. We also study the timeline of IPO to Merger and classify it into three different time categories of firms getting merged within 5 years of going public, between 5-10 years and more than 10 years after going public.

The main objectives of the research and study are:

1. To study Indian IPOs for the period of 2000-2014 and which have merged after going public
2. To study the determinants of Indian firms for going public and eventually merging.
3. To determine the likelihood of firms using the double exit strategy and the variables that might affect the decision of choosing the strategy.

We collect annual performance data for all private and public firms across 5 major industry groups for the period of 2000-2014. We exclude firms that are delisted for other reasons than merger. We also exclude financial firms from the analysis.

We focus on firms that have gone public and got merged in the first 5 years of going public and look at these firm's characteristics in terms of their Profit/Sales ratio, Debt/Equity Ratio, Return on Assets (ROA), Return on Equity (ROE), and Age of the firm.

We also look at all firms that have got merged after going public across industry groups and derive the statistical significance of Sales, Debt/Equity, Profit/Sales , ROE ,ROA , Industry concentration (HHI Index) and Age using regression analysis for IPO unmerged versus IPO merged firms.

2. Background and Literature

The research question that is underlying this research is what motivates firms to go public and eventually become an acquisition target. Several researchers have studied the question but from different perspectives. Studies on why a firm would go public first and then get acquired has different findings. Brennan and Franks (1997) argue that firm insiders opportunistically take steps at the IPO to ensure that they will maintain their private benefits of control after the firm's stock is

publicly traded. This suggests that they could use takeover defences to help insulate themselves from the market for control. Another view is by Zingales (1995) and Mello and Parsons (1998), who argue that the IPO is the first stage in the eventual sale of the firm. The first formal theory of the going public decision appeared in Zingales (1995). However, No conclusion or empirical analysis done on firms that went public and get acquired 3-5 years after IPO.

He observed that it is much easier for a potential acquirer to spot a potential takeover target when it is public. Moreover, entrepreneurs realize that acquirers can pressure targets on pricing concessions more than they can pressure outside investors. By going public, entrepreneurs thus help facilitate the acquisition of their company for a higher value than what they would get from an outright sale. Brau, Francis, and Kohers (2003) suggest that an IPO may be a mechanism for obtaining currency (i.e., publicly traded stock) for subsequent merger activity Zingales (1995) also argues that an IPO can serve as a first step toward having a company taken over at an attractive price. Article doesn't draw any conclusion between the type of target firms and if they are more private or public firms and if they are young IPO firms or established firms

Brau et al. (2003) in their study find that IPOs may be important because they create public shares for a firm that may be used as "currency" in either acquiring other companies or in being acquired in a stock deal. Hsieh, Lyandres, and Zhdanov (2011) further find that an IPO benefits the firm as a potential acquisition target by resolving its value uncertainty thus enabling it to credibly communicate its value with the bidders. Focus is on characteristics of firms that will go IPO instead of being taken over by a public firms or sell out to public firm. The research is not continued for IPO firm to see if they got acquired later.

Another viewpoint in literature is provided in a study by Capron and Shen (2007). They mention that acquirers are less likely to acquire private targets than public targets when they make an acquisition outside their core business. They also mention that acquirers are more likely to acquire private targets than public targets when their acquisition experience in the targeted industry is high.

Literature also mentions characteristics of firms which are more likely to choose double exit strategy. Celikyurt et al. (2008) argues that the merger motive is a primary consideration for IPO firms. By examining a sample of mutual thrifts IPOs, Ciccotello, Field, and Bennett (2001) report that 36 percent of the IPOs were acquired within five years after being listed. On the other hand, Celikyurt, Sevilir and Shivdasani (2010) find that only 4.4 percent of the IPO firms in their sample become an acquisition target within five years after going public, which is significantly lower than a percentage of typically

Above 10 percent for seasoned companies. Plepu (1986) and Song and Walking (1993) document that acquisition likelihood is negatively related to firm size, and Field and Karpoff (2014) find a positive Relationship. Palepu, 1986; Ambrose and Megginson, 1992; Song and Walking, 1993; Field and Karpoff, 2014), the coefficients on growth are significantly positive. Overall, these findings suggest that firms with poor performance (as measured by low stock return) and severe financial conditions (as measured by high leverage) are vulnerable to takeovers, and those with high growth in sales and low market value are attractive to bidders in acquisitions

In understanding the role of industry in the ipo-acquisition decision, Brau, Francis, and Kohers (2003) report that IPOs are more likely under macroeconomic conditions such as a relatively high cost of debt and a "hotter" IPO market and industry characteristics such as in industries that are more highly concentrated and more high- tech, while sell-outs are more likely in higher market-to-book industries and highly leveraged industries. No correlation has been drawn with respect to characteristics of industry concentration using HHI index and higher propensity to merge or get acquired.

3. Methodology and Data

Primary objectives of the research are to study Indian firms – private and public firms during the period of 2000-2014 including delisted and merged firms and to study firm's performance characteristics, Age of the firms, HHI index of the industry and understand the underlying motivation and characteristics of firms getting merged and to study the likelihood of new public firms becoming acquisition target then seasoned firms.

We obtain data on private, public firms from CMIE prowest database. We select the following industries/sectors – Manufacturing, Information technology & Software services, Mining, Utilities and Hotels. We select private and publicly listed companies in both NSE and BSE. We choose the IPO year by looking at the first listing date on BSE and NSE. We exclude financial firms from the list. We choose the delisting date as an indication of merger/Acquisition and the prowest database does a "Merged" suffix to all company names that have merged.

We collect the following data for each private and public firm including Incorporated Date , First trading year in NSE/BSE, Industry Group ,Delisting date and we extract 14 years of financial data from 2000-2014 such as Sales, Profit after tax(PAT), Total Liabilities, Total Assets ,Total Capital, Total Borrowings, and Earning per Share(EPS). We calculate additional ratios using the financial data for each year including – PAT/Sales, Return on Assets (ROA), Return on Equity (ROE) and D/E (Debt/Equity).

We define two dummy variables – IPO Dummy, Acquired Dummy and the value is set to 0 or 1 based on going public or being private and got acquired or not. We calculate three Age variables – Incorporation-Merger, Incorporation-IPO, IPO-Merger using Incorporate Year, IPO Year and Merger Year. We calculate HHI Index for every industry group that is part of the data set from annual sales data.

Manufacturing sector is classified into following Industry types as per the Prowess classification and are under Chemical, Diversified, Food and Beverage, Machinery, Metals & Metal Products, Miscellaneous, Non-Metallic Mineral Products, Textiles, Transport Equipment industries

We classify the firms and group them by industry type and identify the trend of number of firms that have gone from private to public, number of firms that are public and have got merged and group them into three different sub categories of merged within 5 years of IPO, 5-10 years and more than 10 years of going IPO. We calculate mean, median, maximum, minimum and standard deviation of all performance variables across the complete data set for each individual Industry. We also calculate mean, median, max, min and standard deviation of all performance variables for IPO Unmerged and IPO merged data set. We calculate statistical data for public versus private firms using the same total data set.

We identify a year wise trend of number firms that going for an IPO at a particular year and how many of these firms get merged within the first 5 years , 5-10 years and more than 10 years of going IPO for each industry group.

We perform sequential logit regression as described in the Firm’s Decision Making model (Figure 1) where firms go through two stages of Decision Making and logit regression is used to understands the odds/Probability of a private firm going public first represented by Pipo and odds of a firm that has gone for an IPO to be merged/acquired by another firm represented by Probability (Pacq).

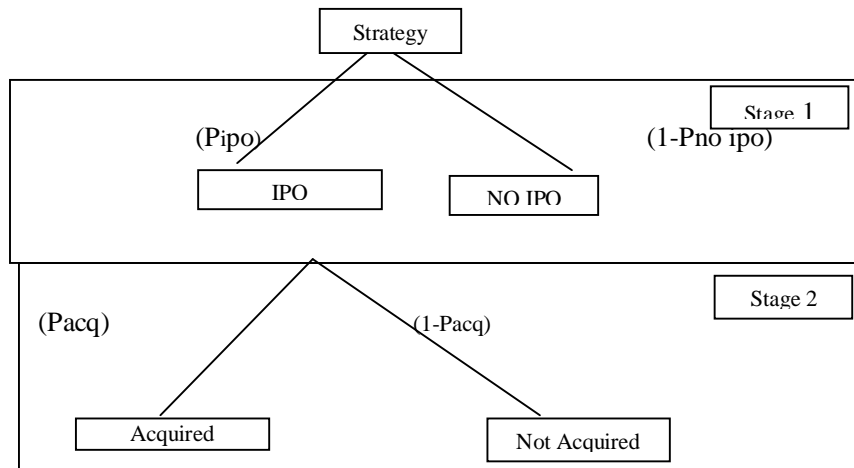


Figure 1 Firm’s Decision Making Model

The stage 1 Sequential Logit model will test the first Hypothesis.

Hypothesis 1(a)

H0: Firm, Performance and Industry characteristics of public firms do not differ from non-public firms.

The models test the log odds of a firm going for IPO Pipo v/s not going for an IPO Pnoipo.

$$\log \left[\frac{P_{ipo}}{P_{no ipo}} \right] = \beta + \beta_1 Age + \beta_2 Sales + \beta_3 Leverage + \beta_4 ReturnOnEquity + \beta_5 ReturnonAsset + \beta_6 HHI + \beta_7 ProfitToSales$$

Equation 1

(Refer to Annexure table for Variables Definition)

The stage 2 model will test the following hypothesis:

Hypothesis 1(b)

H0: Firm, Performance Industry characteristics of firms that go public and merge do not differ from those that go public and do not merge.

$$\log \left[\frac{P_{acq}}{P_{noacq}} \right] = \beta + \beta_1 Age + \beta_2 Sales + \beta_3 Leverage + \beta_4 ReturnOnEquity + \beta_5 ReturnOnAsset + \beta_6 HHI + \beta_7 ProfitToSales$$

Equation 2

(Refer to Annexure table for Variables Definition)

Our objective is to analyse the influence of fundamental financial data of Indian companies on their going public decision and mergers and likelihood of new versus established firms getting merged. Dependant variable is IPODummy and acquisition Dummy and there are both set to 1 if a firm has gone for an IPO and then subsequently got merged. Independent variables are firm’s performance characteristics namely – Sales , Profit/sales , Debt/Equity , Return on Equity , Return on Assets , Industry characteristics using HHI Index and Firm’s Age. (Refer to Figure 1 for Firm’s Decision Making Model)

4. Results and Interpretation of Results

Total data set (Table 1) of all private and public firms that form the basis of the study is 13000 firms across four industry groups – Manufacturing, Information Technology Services, Utility, Hotels and Mining.

Table 1 Industry Wise, Number of Firms that have Gone IPO and Subsequently Merged (1937-2014)

	IPO	IPO and Merged	Merged (within 5 years)	Merged (5 years -10 years)	Merged(After 10 years)
Manufacturing	4057	343	69	101	174
I.T	291	12	1	4	7
Utility	41	6	1	0	5
Hotels	92	7	3	1	3
Mining	58	4	1	1	2

Table 2 Industry Wise, Number of Firms that have Gone IPO and Subsequently Merged (2000-2014)

	IPO	IPO Merged	Merged (within 5 years)	Merged (5 years -10 years)	Merged (After 10 years)
Manufacturing	180	19	12	7	0
IT	80	3	1	2	0
Hotel	11	0	0	0	0
Utilities	16	0	0	0	0
Mining	7	0	0	0	0

Manufacturing sector in India has seen the maximum number of IPOs and has eventually seen the maximum number of mergers (Figure 2). Information technology which is considered a high growth sector that is catching up and is next to the manufacturing sector still is lagging in the number of IPOs and in the number of Mergers as well (Figure 2).

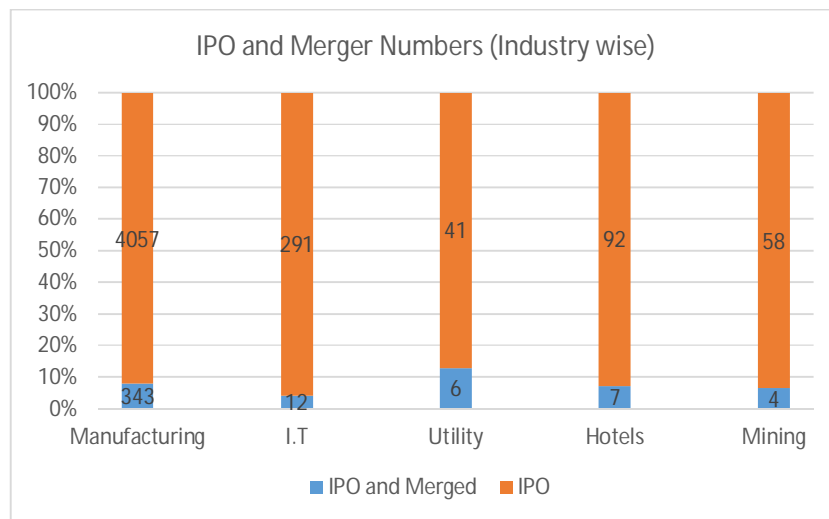
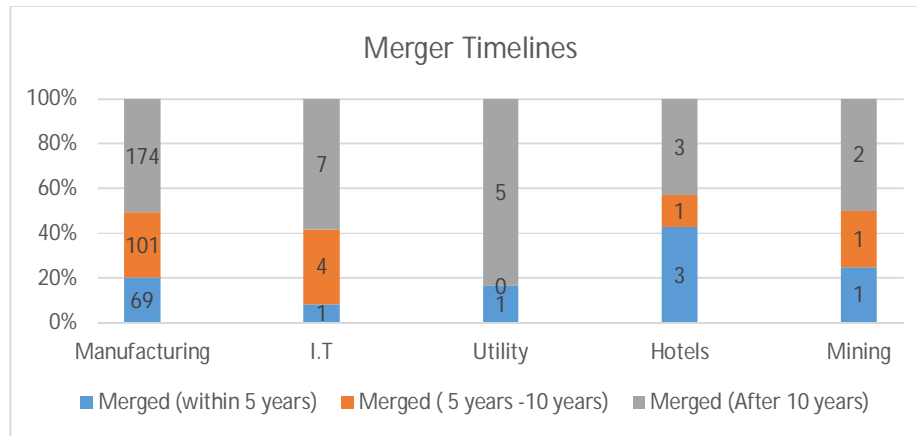


Figure2 Industry wise IPO and Merger Percentages (1937-2014)

Information technology sector is primarily dominated by private firms as supposed to Manufacturing sector. 20% of manufacturing firms that got merged have done so in the first five years of going IPO (Figure 3). Even though the number of IPO and subsequent mergers in Hotel industry is small. However the percentage of mergers that happened within 5 years of going IPO is significant and is 40% in the hotel industry (Figure 3). This is followed by the mining industry where the percentage of mergers within first 5 years of going IPO has been more than 20% even though the number of IPOs and number of mergers has been the lowest in the data set. (Figure 3). Majority of the mergers do happen more than 10 years after going IPO and has been a common thread across all major industry groups as indicated by the Table 1 below. However it is worth highlighting that the overall percentages of mergers have hovered between 2-10% across all the industry groups. (Figure 3)

(Figure 3) – Merged Companies industry wise and grouped by IPO-Merger timelines (1937-2014)

When we look at the average firm characteristics of IPO merged versus IPO unmerged across all the industry groups, Merged firms have lower leverage (D/E), higher equity capital, lower return on equity, lower assets, lower liabilities compared to unmerged firm. (See Table 3)

Table 3 Statistical Analysis of Key Performance Variables and Comparison between Merged Versus Unmerged Firms Across all Sectors

IPO Merged				IPO Unmerged		
Number of Companies	373			Number of Companies	4166	
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation
Promoters Shares held (%)	59.88	60.09	21.89	50.90	52.85	21.08
Income(in Million Rs)	6632.07	1160.05	23495.39	8839.99	636.35	93066.60
Sales(in Million Rs)	6410.77	1131.70	22557.74	8893.28	675.70	93233.76
PAT(in Million Rs)	228.14	12.30	2852.32	540.55	7.70	5723.53
Total Liabilities(in Million Rs)	7894.14	1274.80	31225.25	9023.19	592.10	73757.47
Total Assets(in Million Rs)	7894.14	1274.80	31225.25	9045.36	595.60	73846.65
Total Capital(in Million Rs)	792.97	132.80	3596.27	292.19	82.70	1413.56
Total Borrowings(in Million Rs)	2975.68	400.00	11237.22	2911.39	218.30	22564.19
EPS(in Million Rs)	496.29	0.89	11906.38	967.20	1.13	60649.48
Debt/Equity	1.09	0	9.39	15.22	0.00	311.52
Profit/Sales	-0.02	0	0.92	-0.50	0.00	14.25
ROE	0.21	0	2.92	0.80	0.00	63.04
ROA	0.00	0	0.20	-0.03	0.00	1.62

Manufacturing sector has emerged as the beacon light for IPOs and Mergers from the data analysis where the maximum number of mergers happened and maximum number of mergers happened with first 5 years of going IPO. Considering the number of merged firms contribution from manufacturing is 343 which is 90%, manufacturing sector has the primary influence on the statistical data analysis results in terms of the types and characteristics of firms that get merged. The average age of firms that get merged are 20 years. Age of firm here is calculated from Incorporation to Merger. The Average HHI index for manufacturing is 0.03 indicating almost no concentration or monopoly and a perfect competition market. (See Table 4)

Table 4 Industry Wise average value for all merged firms for HHI Index and Age

Industry Group	Average HHI Index	Average Age of Firms
Manufacturing	0.03	24.82
I.T	0.08	17.92
Utility	0.38	68.17
Hotels	0.05	21.71
Mining	0.19	20.50

When we further zoom in to the manufacturing sector , Out of the total of 69 firms that merged within the first 5 years of going IPO overall, 12 firms have gone IPO from 2000-2014 (See table 5) and got merged within the first 5 years.

Table 5 Manufacturing - Number of Firms that Got Merged Grouped by IPO year (2000-2014)

Manufacturing			
	IPO and Merged (Age < =5 years)	IPO and Merged(Age 5-15 years)	IPO and Merged (Age > 15 years)
2000	0	1	0
2001	0	0	0
2002	1	2	0
2003	4	2	0
2004	0	1	0
2005	2	1	0
2006	1	0	0
2007	1	0	0
2008	2	0	0
2009	0	0	0
2010	1	0	0
2011	0	0	0
2012	0	0	0
2013	0	0	0
2014	0	0	0

Table 6 details the performance characteristics of the 12 manufacturing firms that went for merger within 5 years of going IPO with IPO year on or after year 2000. The firms have a higher Equity Capital, lower D/E, higher EPS , higher profit/Sales, higher ROE , higher borrowings ,lower Sales and PAT compared to manufacturing firms that have gone IPO on or after year 2000 but have not merged.

If we look at the average age of these 12 manufacturing firms (See table 6 last row), it is 23 years. Age here is calculated in number of years between Incorporation – Merger. These firms are well established firms in the industry and have been in the industry prior to going IPO for more than 16 years. There is definitely a need for public capital considering their borrowings are very high .However their key motivation to go public and do a merger within 5 years is to facilitate double exit strategy first resulting in initial price discovery using IPO and then eventually doing a merger.

Table 7 Column 1 represents Logit regression results where the dependant variable equals to 1 if a firm has gone IPO and equal to 0 if firm is private. List of independent variables included in regression are log of sales, calculated Debt/Equity ratio, calculated Profit/Sales ratio, Return on Equity, Return on Assets, HHI of the industry calculated using Sales value of all companies in the industry, Age of the company from Incorporation Date to Merger.

Table 7 Column 2 represents Logit regression results where the dependant variable equals to 1 if a firm is merged and equals zero otherwise. List of independent variables included in regression are log of sales, calculated Debt/Equity ratio, calculated Profit/Sales ratio, Return on Equity, Return on Assets, HHI of the industry calculated using Sales value of all companies in the industry, Age of the company from Incorporation Date to Merger.

Sales, Debt/Equity, HHI index co-efficient are negative indicating inverse relationship to the dependant variable (Acquired Dummy) where the probability of company getting merged is lesser for companies with higher Debt/Equity, Companies in Industry having higher HHI index and higher sales are less likely to get merged.

Table 6 Manufacturing Sector – Firms that got merged within 5 years of IPO (2000-2014)

	Mean	Median	Standard Deviation
Sales (in Million Rs)	2942.83	1711.70	6323.32
PAT(in Million Rs)	235.56	59.70	832.58
Total Liabilities (in Million Rs)	14650.65	1396.10	53288.47
Total Assets (in Million Rs)	14650.65	1396.10	53288.47
Total Capital(in Million Rs)	2280.46	51.50	9476.20
Total Borrowings (in Million Rs)	6732.62	261.95	25143.15
EPS (in Million Rs)	1585.41	2.35	12633.83
D/E	4.53	0.00	46.88

Profit/Sales	0.02	0.00	0.04
ROE	1.51	0.00	11.90
ROA	0.02	0.00	0.06
HHI Index	0.03	0.03	0.01
Age	23.11	10.50	24.08

This table presents the results of a sequential Logit model with the firm and performance characteristics as independent variables. Column 1 presents the log odds of an IPO with no IPO as the base outcome and column 2 presents the log odds of firm getting merged with no getting merged after IPO. The superscript ***, **, and * denotes significance at the 1%, 5%, and 10% levels respectively. Standard errors are in parenthesis

Table 7 Sequential Logit Model – Firm & Performance Characteristics

VARIABLES	Logit Model	
	IPO	Merged
SALES	.0776***	-.128***
	(0.00432)	(0.031)
LEVERAGE	-.0004558***	-.000787***
	(0.000)	(0.000)
PROFIT TO SALES	-.000225	.001**
	(0.000)	(0.000)
RETURN ON EQUITY	-.000445	0.000
	(0.000)	(0.000)
RETURN ON ASSET	0.004	-.001
	(0.010)	(0.001)
HHI	-.312**	-.144**
	(0.105)	(0.051)
AGE	3.820***	.004***
	(0.026)	(0.000)
Constant	-3.6794***	-2.216***
	(0.020)	(0.010)
Observations	195000	

Results in Column 1 show that an Increase in the Size of the firm increases the odds of going IPO from a private firm. Higher borrowing levels of the firm negatively impacts odds of going IPO. Higher value of annual sales of the firm increases the odds of being merged. Odds of going IPO are higher in industry where level of market concentration is lesser.

Results in Column 2 show that an increase in Size of the firm increases the odds of being merged. Higher borrowing levels of the firm negatively impacts odds of being merged. Higher value of annual sales of the firm also negatively impacts odds of being merged. Odds of Merger are higher in industry where the level of market concentration is lesser.

5. Summary and Conclusion

We examined all private and public firms across all key industry groups/sector and in summary we found Indian Manufacturing sector as the current leader in number of IPOs and Mergers. We look at a large sample of firms across the last 60 years and identified common characteristics of firms that have merged after going IPO and we specifically found more Manufacturing firms getting merged within 5 years of going IPO. Overall the common characteristics of firms getting merged across different timelines represent high Equity capital, Lower Debt/Equity Ratio, Higher borrowings, lesser Sales and Profit after tax compared to unmerged firms. 10% of all firms that go for an IPO get merged and 60-70% of them get merged within the 5 years of going IPO in the manufacturing sector in a 14 year timeline of 2000-2014 and overall from a 60 years' timeline perspective about 20% get merged in the first 5 years of going IPO. Results of Logit regression also indicate that the likelihood of getting merged are for companies having lower Leverage(Debt/Equity) , Lower Sales , Higher Age , lower overall HHI of the industry to which the company belongs to.

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7. Annexures

Annexure 1

List of 12 companies in manufacturing sector that got merged in the first 5 years of going IPO for period of 2000-2014

- 1.) Glofame Cotspin Inds. Ltd
- 2.) Harleystreet Pharmaceuticals Ltd
- 3.) Indo Gulf Fertilisers Ltd
- 4.) Indo Rama Textiles Ltd
- 5.) Mawana Sugars Ltd
- 6.) Rane Engine Valves Ltd.
- 7.) Reliance Petroleum Ltd
- 8.) Samruddhi Cement Ltd
- 9.) Shri Ramrupai Balaji Steels Ltd.
- 10.) Solelectron E M S India Ltd
- 11.) Tezpore Tea Co. Ltd.
- 12.) Treadsdirect Ltd

Annexure 2

Variable Definitions

Variable number	Variable Name	Definition
1.	SALES	Annual Data from CMIE Prowess database and $\ln(\text{Sales})$ calculated.
2.	PROFIT AFTER TAX	Annual Data from CMIE Prowess database
3.	TOTAL CAPITAL	Annual Data from CMIE Prowess database – Total Equity Capital (book value) from Balance Sheet
4.	TOTAL ASSETS	Annual Data from CMIE Prowess database – Total Assets (book value) from Balance Sheet
5.	TOTAL LIABILITIES	Annual Data from CMIE Prowess database – Total Liabilities (book value) from Balance Sheet
6.	TOTAL BORROWINGS	Annual Data from CMIE Prowess database – Total Borrowings from Balance Sheet
7.	INCORPORATION YEAR	Year of Incorporation – Data from CMIE Prowess database
8.	IPO YEAR	Year of listing on NSE/BSE- Data from CMIE Prowess database
9	ACQUISITION YEAR	Year of Delisting on NSE/BSE - Data from CMIE Prowess database
10.	EPS	Earnings per Share - Annual Data from CMIE Prowess database
11	LEVERAGE (DEBT/EQUITY)	Calculated from Variable 6 and Variable 4
12	PROFIT/SALES	Calculated from Variable 2 and Variable 1
13	RETURN ON EQUITY(ROE)	Calculated from Variable 2 and Variable 3
14	RETURN ON ASSET (ROA)	Calculated from Variable 2 and Variable 4
15	INDUSTRY GROUP	Derived from Industry classification in Prowess database – Manufacturing, Information technology, Hotels, Mining and Utilities.
16	AGE(Incorporation-Merger)	Firms Age in Years on the date of Acquisition from incorporation(Calculated from Variable 7 and Variable 9)
17	IPO DUMMY	Derived from IPO year (variable 8) and set as 1 if IPO year has a valid value
18	ACQUISITION DUMMY	Derived from Variable 9 and suffix in the Name of the company as “Merged” (CMIE Prowess classification for Merged companies)
19	HHI	Calculated industry wise using Sales Data.