

# Relationship between Management Quality Certification and IPO Underpricing: Evidence from India

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## Abstract

The present study is an attempt to contribute to the extent literature on the Initial Public Offering (IPO) underpricing as it distinctively examines the relationship between the quality certifications used by issuers and the listing day returns of IPOs. The uniqueness of this study also lies in being one of the initial efforts to explore the quality certifications used by the issuers at the time of IPO in India. A sample period of 11 years, that is, 2004-2014, is examined. The average initial excess return (IPO underpricing) is observed at 21%. Taking a lead from the existing literature on IPO underpricing, various board-related, issue-related, and company-related variables were considered for an empirical analysis. It has been observed that the issue-related variables namely, issue size, listing delay, subscription ratio, and financial leverage, are significant. In addition, proxies used for management quality namely, professional associations of the board members, presence of female directors, and role duality, also significantly explain the IPO underpricing. These findings are consistent with Chemmanur and Paeglis (2005) and Reutzel and Belsito (2015).

**Keywords:** Management Quality, Initial Public Offering (IPO), Underpricing, India

## Introduction

A plethora of literature on the performance of IPOs suggests that the public issues are significantly underpriced and issuers prefer to leave money on the table to attract

a large number of investors<sup>1</sup>. In the empirical literature, numerous theories such as, ex-ante uncertainty<sup>1</sup>, info asymmetry<sup>2</sup>, signaling hypothesis<sup>3</sup>, informational cascades<sup>4</sup>, certification hypothesis<sup>5</sup>, and hot and cold issue periods<sup>6</sup> have been cited to explain the reasons for IPO underpricing.

Nonetheless, these theories have been widely accepted; whereas, in last two decades, in addition to issue related variables or theories, more emphasis is laid on the quality of the Top Management Team (TMT)<sup>2</sup>. Because, in the competitive era, quality and integrity of the TMT are critical in performance of the company, it should also have a reflection on market performance of public issues. Therefore, in last two decades, the focus of research on this subject is shifting from issue-related variables to the quality of the management.

As cited previously, a strand of literature examining the relationship between management quality and IPO performance is available however, the scope of most of

<sup>1</sup> Loughran T., Ritter J. R., and Rydqvist K. (1994). Initial Public Offerings: International insights. *Pacific-Basin Finance Journal*, 2(2), 165-199. Analysis updated by authors in 2016.

<sup>2</sup> Allen and Faulhaber, (1989); Chemmanur, (1993) and Welch, (1989) found that managers have their reputation at stake, highly reputed managers could convey intrinsic value of the firm more credibly to the investors, thus reducing the informational asymmetry between issuers and investors and therefore affects IPO performance. Further, higher quality managers are able to select better projects (characterized by a larger NPV) for their firm and also could be able to manage them more efficiently, hence, could affect the IPO performance (Chemmanur and Paeglis, 2005).

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the studies has been restricted to developed markets<sup>3</sup>. In the emerging markets like India, where, in the last one-and-a-half decade, over 450 IPOs have been floated in the equity market, but, academic literature examining the relationship between the management quality and IPO underpricing is not available. The present study is an attempt to bridge this gap.

The study will be organized in five sections. In section one, an introduction to the objective is discussed; section two reviews the literature related to the study; in section three, the details of database and research methodology are discussed; in the fourth section, findings are discussed, and in the last section, the conclusion of the study is presented.

## Review of Literature

IPO involves the original stakeholders selling a slice of their equity to outside investors. This process includes a great deal of uncertainty on the part of investors planning to invest in IPO. Existing literature suggests that investors rely on various signals while making the investment decision (Certo et al., 2009; Connelly et al., 2011). Traditionally, investors considered the financial performance of the company. However, from the past few decades, alternate ways to predict the future financial performance of the company are considered (D'Aveni, 1990; Hall, 1993; Higgins & Gulati, 2003). A growing body of research suggests the quality and reputation of Top Management Teams (TMTs) as a signal to mitigate the uncertainty surrounding the IPO (Cassia et al., 2010; Certo et al., 2007; Certo & Hodge, 2007).

Empirical research in the area suggests that TMTs are connected with the firm from its early days and guide its success by developing strategies based on their values, beliefs, and ideology (Baum et al., 2001; Beckman & Burton, 2008). Further, potential investors being unaware about the operations of the firm can rely upon the reputation and quality of the TMTs to differentiate between good and bad IPOs (Chemmanur & Fulghieri, 1994); therefore, reducing information asymmetry between issuers and investors (Chemmanur, 1993).

Similarly, Chemmanur and Paeglis, (2005) found that IPO firms with higher TMT quality would be characterized by lower underpricing, greater institutional interest, more reputable underwriters, and smaller underwriting expenses. Later, Baik et al. (2011) supported that higher ability managers are more likely (than low ability managers) to issue management forecasts to signal their ability, thereby increasing the quality of information. Furthermore, Agarwal et al. (2011) found the quality of management value relevant, as the well-managed firms have higher profitability, are able to sustain superior operating performance for longer, and rewarded by higher market valuations. In addition to this, Certo et al. (2007) observed that investor perceptions of both TMT prestige and organizational legitimacy are positively associated with their perceptions of future financial performance. Furthermore, Chemmanur et al. (2009) stated firms with better and more reputable managers would have an easy access to the equity market, lower leverage ratios. In addition, they would have less need to signal quality, using dividends. Taken together, these studies suggest that the prestigious TMTs help to certify IPO firms in the eyes of shareholders.

Few other researchers have extended the study on TMTs to study the effect of TMTs characteristics on the market performance of IPO firm. Zimmerman (2008) found a direct relationship of TMT's functional and educational heterogeneity with capital raised through an IPO. In the similar context, Cohen and Dean (2005) observed the negative effect of TMTs' prior industry experience and age on IPO underpricing. However, the education of TMTs was found unrelated with IPO underpricing. In contrast to this, Carmen et al. (2014) observed a negative impact of TMT's education-level diversity on corporate performance; however, no effects for functionality and education background diversity have been found. In addition, they also confirmed a greater influence of international experience diversity of TMTs on corporate performance. In a related study, Rakhmayil and Yuce (2013) found companies with managers having MBA degrees or degrees from the prestigious schools have higher market values than companies with non-MBA managers. In contrast to this, Xu and Xu (2012) indicated that public issue pricing has no significant correlation with TMT human capital (the average level of personal qualifications and degrees of TMT members).

<sup>3</sup> Please see Certo, (2003); Chemmanur and Paeglis, (2005); Welbourne and Andrews, (1995) and Certo et al., (2007).

## Database and Research Methodology

In India, during the pre-liberalization era, the Controller of Capital Issues (CCI) was the market regulator and there were many restrictions on the companies to raise capital. The CCI used to fix the price and size of the issue very conservatively, pricing the shares far below the market price<sup>4</sup>. Later, with the setup of the Securities Exchange Board of India (SEBI) Act, a widespread package of reforms were introduced in primary market. The main aim of SEBI was to reduce the asymmetric information between the issuers and investors. As a result, a mandatory book-building process was introduced by SEBI in 2003. Therefore, in the present study the sample period from 2004 to 2014 has been considered. As this study is a part of original work examining the 3-year long-run performance of the IPOs, we have restricted our sample until 2014.

During this period, 433 Public issues were floated from which 367 were included in the final sample. Out of the total 433 public issues, the issuers withdrew 20 public issues, 41 were Follow-on-Public issues, and for the four public issues, data were not available. Hence, 367 IPOs were considered in the final sample. The data have been compiled from the prime database and SEBI website. The listing day price related information was collected from the official website of Bombay Stock Exchange (BSE). The detail of the 367 IPOs is given in Table 1.

**Table 1: Year-wise Number of IPOs Listed on BSE**

Year	Total Public Issues	Issues Withdrawn	FPOs	Data not Available	Total IPOs
2014	7	1	1	0	5
2013	6	2	1	0	3
2012	13	2	0	0	11
2011	41	3	2	0	36
2010	71	2	6	1	62
2009	21	0	0	0	21
2008	36	3	0	0	33
2007	96	4	2	1	89
2006	73	3	12	0	58
2005	50	0	12	1	37
2004	19	0	5	2	12
TO-TAL	433	20	41	4	367

<sup>4</sup> Avadhani, V.A (1996), Investment Management. First Edition, Himalaya publishing house, pp. 327-328.

Because, the primary focus of the study is to examine the relationship between TMT quality and listing day performance of IPO, the following variables based on literature review will be considered.

## Description and Estimation of Variables

The variables in this research have been categorized as dependent and independent variables. Where dependent variable is IPO underpricing and independent variables are issue, firm-related variables, and management quality variables. Issue-related and firm-related variables have been used as control variables along with management quality variables to provide for their potential influence on the listing day market performance of the IPO.

## Dependent Variable

*IPO Underpricing*: To calculate the level of Underpricing Logarithm, the transformation of Market Adjusted Excess Returns (MAER) is used. The MAER of a stock has been defined as the excess of Initial Returns (IR) of the stock over the Market Return (MR) between the issue closure and the listing day. In order to calculate the market return, BSE Sensex as the proxy for the market return have been used.

$$\text{MAER} = \text{IR} - \text{MR}$$

where IR = Initial return of a stock:

$$\text{IR} = \frac{(\text{Closing Price of the stock on the listing day} - \text{Offer Price})}{\text{Offer Price}}$$

MR = Market return:

$$\text{MR} = \frac{(\text{Sensex on the listing day} - \text{Sensex on the issue closure day})}{\text{Sensex on the issue closure day}}$$

## Independent Variables

*Directors Diversity (DD)*: It is measured as the ratio of independent directors to the total number of directors on the board. Lin and Chuang (2011) indicate that the presence of independent directors is negatively and significantly related to underpricing. Filatotchev and Bishop (2002) in the UK found the similar results. Bushman et al. (2004)

also state that earnings of the corporation improve with the use of an independent director on board.

*Professional Associations (PA):* Chemmanur and Paeglis (2005) stated that the presence of lawyers and accountants on the board of an IPO firm helps in reducing the cost of issue and money left on the table in an IPO. Hence, in order to find the effect of presence of lawyers or accountants on the IPO underpricing, a professional association is used. It is measured as the ratio (percentage) of directors with professional association to total directors on the board.

*Foreign Directors (FD):* The presence of the foreign directors on the board has been measured as the ratio (percentage) of directors on board having the nationality of countries other than India. Mi et al. (2012) observed that the inclusion of foreign directors on board results in increasing firm value. Leblanc and Gillies (2005) found that the directors with international know-how empowered the board with an ability to make decisions with a wider perspective. Mak et al. (2003) observed the relation of foreign directors with IPO pricing.

*Founders on Board (FOB):* Chahine (2004) and Mcconaughey et al. (2001) observed the presence of founders on the board to be more enthusiastic in achieving firm performance than the board with the non-founding members. In contrast to this, Chahine et al. (2009) stated the external board experiences of TMT's reduce IPO underpricing. Similarly, the effect of founders on board and their influence on IPO underpricing is considered in the model. It is measured as a dummy variable with 1 denoting to the company having founders as their board members and 0 to all other boards.

*Other Boards Membership (OBM):* The presence of board members on the boards of the other companies signifies the reputation of board members in the industry (Fama and Jensen, 1983 and Higgins and Gulati, 2003). Similarly, Certo et al. (2001) observed inverse relationship of board reputation with IPO underpricing. Thus, to quantify it, the total number of additional directorships of the board members was measured.

*Board Members with MBA Degree (MBA):* Rakhmayil and Yuce (2013) indicated a higher value for the firms with top managers having MBA degrees. Hence, an effort is made to analyze the effect of the presence of board members with MBA degrees on the IPO underpricing.

It is measured as the total members on board with MBA degrees.

*Gender Diversity (GD):* With the increase in ongoing process of globalization in equity markets and enhanced governance regulations, the inclusion of female directors on board is taken as a supplementary signaling factor for the board. Accordingly, the Boards with females are denoted 1 and otherwise 0. Female directors to the total number of directors on board has been measured to test its influence on the IPO underpricing.

*Role Duality (RD):* The presence of board member in planning and implementation of a decision suggests the influencing ability of the respective board member in the company. So, the role duality variable is used to quantify this effect. It is measured as a dummy variable with 1 denoted to the company having board members also being (Chief Executive Officer) CEO and 0 to all other boards.

## Control Variables

*Listing Delay (LD):* Listing delay is measured as the difference between the issue closure date and listing on the stock exchange (BSE). Higher listing delay is expected to reduce underpricing as it enables investors to take more informed decisions about the listing company.

*Investment Banker Ranking (IBR):* It is expected that higher the reputation of the Investment Banker, more efficient will the pricing and lower will be the underpricing. It is a common practice to have more than one investment banker being associated with an IPO. There were total 80 investment bankers, which were involved in 367 IPOs of the sample.

Investment banker rank was measured using the following steps. First, the data related to ranking of investment banks were obtained from the prime database. An investment banker having highest market share (in terms of issue amount) is assigned a relative rank of 1 and so on.

Second, Rank 1 was given 10 value points, Rank 2, 9 value points, and so on as listed in Table II. Third, as every IPO is managed by a group of investment bankers, the values of the sum of the all-participating investment bankers combined is used, based on their ranks rather only taking the value of the lead investment banker. The ranking is listed in Table 2.

**Table 2: Investment Banker Rank (based on rank)**

<b>Rank</b>	1	2	3	4	5	6	7	8	9	10	11-15	16-20	Above 20
<b>Value</b>	10	9	8	7	6	5	4	3	2	1	0.5	0.25	0.125

Source: Authors' calculations

*Issue Size (ISIZE)*: Logarithm transformation of the proceeds received from issue of the new shares and calculated as issue price multiplied with the number of new shares issued. The size of the issue is expected to have an opposite relationship with IPO underpricing, with small-sized issued to be more underpriced, whereas large issues be less underpriced.

*Venture Capital (VC)*: The reputation and presence of the venture capital backing in an IPO effects the listing day price performance of the IPO. The companies in the sample having VC backing were denoted 1, whereas all other companies were denoted 0. Among the 367 companies, only 59 companies were having VC backing.

*Age of firm (AOF)*: The age of firm is measured as logarithm transformation of the difference between the year of incorporation and IPO issue year. The age of the firm is expected to have a direct relationship with the IPO underpricing due to the availability of the adequate information about the issuing firm.

*Subscription Level (SUB)*: It is the time by which the public issue has been oversubscribed. A company

with high subscription level is expected to have high underpricing on the listing date. Aggarwal et al. (2008) observed a direct relationship between IPO underpricing and its subscription rate.

*Debt Level of Firm (DEBT)*: The debt level of the firm is measured as the book value of debt to the equity capital of the company. A high debt to equity value signifies the financial risk of the company.

Using the previously mentioned dependent and independent variables, the following regression equation is formulated and the findings are discussed in section four.

$$\text{IPO Underpricing} = \alpha + \beta_1(DD) + \beta_2(PA) + \beta_3(FD) + \beta_4(FOB) + \beta_5(OBM) + \beta_6(MBA) + \beta_7(GD) + \beta_8(RD) + \beta_9(LD) + \beta_{10}(ISIZE) + \beta_{11}(IBR) + \beta_{12}(VC) + \beta_{13}(AOF) + \beta_{14}(SUB) + \beta_{15}(DEBT) + \epsilon.$$

### Data Analysis and Interpretation

IPO underpricing is measured by MAER. The descriptive statistics of all variables as discussed in Section 3 are discussed in Table 3.

**Table 3: Descriptive Analysis of the Variables**

<i>Variables</i>	<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Std. dev.</i>
MAER %	21.70599	-79.5091	334.929	46.57569
Directors Diversity (ratio)	0.52608	0	0.9	0.1053
Professional Associations (%)	23.94	0	83.33	23.94
Foreign Directors (%)	6.746977	0	71.42857	13.2045
Other Boards Membership	44.14714	0	332	44.49596
Board Members with MBA Degree	0.874659	0	5	1.040484
Listing Delay (No of days)	19.40054	6	174	8.932675
Investment Banker Rank	7.44	0.125	43.25	9.67
Issue Size (in million)	4281.572	105.5625	154750.9	12558.08
Age of the Firm (years)	15.02262	0.1	100	12.55881
Subscription Level (ratio)	18.89	0.91	143.99	25.08
Debt Level of the Firm (%)	1.17	0	11.05	1.47

Source: Authors' calculations

The mean underpricing as measured by MAER is 21%; whereas, the underpricing ranges widely across the sample public issues. This variation may be attributed to the fact

that issuers voluntarily underprice their issues to attract a large number of investors to participate in the issue. Similarly, directors' diversity has also been observed to

be widely scattered across the sample with the mean ratio of 0.52; whereas, there are some boards in the sample with very few or no independent directors present on the board at the time of the issue. In the same trend, professional associations of the board members, presence of foreign directors' on board, and board members with MBA degree are also widely spread in the sample, attributing to the fact that they are in proportion to the number of members on the boards of different companies. Additionally, other board membership variable is observed in a range of 0 to 332 in the sample. It is directly in relation to the reputation of each board member in the industry, which is higher the reputation higher will be the number and vice versa.

As per the SEBI regulations, a public issue has to be listed in 12 days<sup>5</sup> and the mean listing delay is 19 days; whereas, there are companies like Vaswani Industries

<sup>5</sup> SEBI in April 2010 announced a reduction in the time between issue closure and listing from 22 days to 12 working days. Later in November 2015, this period was further reduced to 6 days.

Limited with listing delay of 174 days<sup>6</sup>. The investment banker ranking is based on the ranking allocated to the 80 investment bankers as defined in Table 2. The age and issue size of the firm are directly related to each other with older firms having larger issue size. The subscription level of the firm is based on the Hot and Cold periods prevailing in the market, leading to higher subscription ratio during hot periods. Furthermore, financial leverage of the firm is also observed to be widely varying in the sample period owing to the fact that few companies have 0% leverage; whereas, companies like Jet Airways have 11.05% debt to equity ratio.

### Regression Analysis

The management quality variables, along with other firm and issue-related variables, were further probed using the regression analysis to find the relationship with IPO underpricing. The results of the regression analysis are presented in Table 4:

<sup>6</sup> [https://www.sebi.gov.in/sebi\\_data/attachdocs/1306487534544.pdf](https://www.sebi.gov.in/sebi_data/attachdocs/1306487534544.pdf)

**Table 4: Results of the Regression analysis**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.585643	0.140237	4.176101	0
Directors Diversity (DD)	-0.07001	0.121482	-0.57632	0.5648
Professional Associations (PA)	-0.00152	0.000785	-1.93348	0.054
Foreign Directors (FD)	-0.00102	0.001007	-1.00811	0.3141
Founders on Board (FOB)	-0.01503	0.011095	-1.35418	0.1766
Other Boards Membership (OBM)	0.000237	0.000358	0.661587	0.5087
Board Members with MBA Degree (MBA)	-0.01045	0.013394	-0.7804	0.4357
Gender Diversity (GD)	-0.04507	0.02691	-1.67498	0.0949
Role Duality (RD)	0.079927	0.036995	2.160506	0.0314
Listing Delay (LD)	-0.00555	0.001374	-4.03874	0.0001
Investment Banker Ranking (IBR)	0.000927	0.002079	0.446157	0.6558
Issue Size (ISIZE)	-0.12101	0.038514	-3.14188	0.0018
Venture Capital (VC)	-0.05742	0.034264	-1.67571	0.0947
Age of firm (AOF)	0.043145	0.036859	1.170545	0.2426
Subscription Level (SUB)	0.007207	0.00054	13.3429	0
Debt level of firm (DEBT)	-0.01969	0.008662	-2.27344	0.0236
R-squared	0.41476	Durbin-Watson stat		1.96162
Adjusted R-squared	0.388941	Prob. (F-statistic)		0

Source: Authors' calculations

To study the relationship of management quality variable along with issue- and firm-related variables on the IPO underpricing, the regression analysis is used. A sample of 367 Indian IPOs issued from 2004 to 2014 is studied. The dependent variable is taken as IPO underpricing; whereas, Directors Diversity, Professional Associations, Foreign Directors, Founders on Board, Other Boards Membership, Board Members with MBA Degree, Gender Diversity, and Role Duality variables are taken as independent variables. In addition, Listing Delay, Investment Banker Ranking, Issue Size, Venture Capital, Age of firm, Subscription Level and Debt level of firm are taken as control variables. Overall, the model explains 38% (Adjusted R-squared = 0.388) variation of the IPO underpricing.

Table 4 explains the results of the regression model; it is observed that Professional Associations, Gender Diversity, Role Duality, Listing Delay, Issue Size, Venture Capital, Subscription Level, and Debt level of firm are found to be significantly related to IPO underpricing.

Professional Associations of board members is observed to be statistically significant and coefficient is negative that suggests that higher the number of board members with professional associations, lower will be the IPO underpricing. This relationship is consistent with the findings of Chemmanur and Paeglis (2005). Role duality of the board members is another variable, which is significant with IPO underpricing. The coefficient of role duality is positive, which implies a direct relationship with IPO underpricing. In addition, Gender diversity is observed to be significant at 10% level, which is inversely related to IPO underpricing with a negative coefficient. It is consistent with findings of Reutzel and Belsito, (2015).

Among the control variables, Listing delay, Issue size, Debt level of the firm, Subscription ratio, and Presence of the venture capitalist support to the firm were found to be significantly related to the IPO underpricing. Positive coefficient of the subscription ratio implies that more the subscription level in an IPO, higher will be the initial day underpricing, which is in consistence with the empirical evidences in the literature provided by Koh and Walter (1989), Chen and Yang (2013), and Handa and Singh (2017). Furthermore, the issue size of the IPO also has a negative relationship with the dependent variable, which implies that higher the size of the issue, lower will be

the level of IPO underpricing. It is similar to the findings of Yu and Tse, (2006) and Hearn (2012). Furthermore, consistent with the findings of Lee et al. (1996), the listing delay is inversely related to IPO underpricing. Similar to the results of Ritter (1984) and Loughran and Ritter (1995), the debt level of the firm is negatively related to IPO underpricing. Presence of venture capital support to the firm during an IPO is observed to be negatively related to the IPO underpricing. Such relationship, as stated in the literature, highlights the fact that the presence of venture capitalists assures potential investors as a signal of the quality of the IPO. The results obtained from the analysis are in line with the results of Belghitar and Dixon (2012) and Sahoo (2014).

All the other variables of the regression model were not found to be related with the IPO underpricing. Overall, the results of the model suggest that investors do not consider the Management quality variables in Indian market context. However, the Professional associations, Gender diversity, and Role duality of the board members is found to be a significant factor.

## Conclusions

Present study examines the relationship between the quality certifications used by issuers and listing day returns of IPOs. Using a sample from year 2004–2014, the average initial excess return (IPO underpricing) is 21%. The results obtained from the study implies that Professional associations and Role duality of the board members is an important factor, which affects the investment decision of the investors in an IPO. Gender diversity of the board members is found to be weakly related to IPO underpricing. This may be due to the existence of biasness for women in the boardrooms, which is constantly reducing due to the awareness of female directors contributions in the board functioning.

In contrast, other management quality variables were not related to the IPO underpricing. Implying, Indian investors are not much influenced by the management quality signals while making their investment decisions. From the issue-related variables, Listing delay, Issue size, Debt level of the firm, Subscription ratio, and Presence of the venture capitalist support to the firm were found to be significantly related to the IPO underpricing.

Overall, the management quality variables have a minute contribution in explaining the variation in the listing day price performance of the IPO. Nevertheless, the present study suffers from certain limitations. It takes into account only the listing day price performance of the IPO; hence, the future research must also incorporate the aftermarket performance of the IPO returns so that a much deeper insight of the management quality variables and their relationship with IPO market performance can be observed.

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### (Endnotes)

<sup>1</sup> Beatty and Ritter, (1986)

<sup>2</sup> Rock, (1986)

<sup>3</sup> Allen and Faulhaber, (1989)

<sup>4</sup> Welch, (1992)

<sup>5</sup> Carter and Manaster,(1990) and Megginson and Weiss, (1991)

<sup>6</sup> Ibbotson and Jaffe, (1975) and Ritter, (1984)