The Effect of Business Group Affiliation and Diversification on the Pricing of New Equity Issues

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Abstract

This paper attempts to analyze the influence of diversification of a firm on the pricing of new equity issue. The study is aimed at identifying the influence of group affiliation and diversification of a business group on IPO underpricing. Large number of studies in literature links the firm diversification and performance. The positive effect of diversification on firm performance is largely noted in emerging markets. As a result, this study tries to link the degree of diversification with the pricing of new equity issue with argument that if the diversification is a value adding factor, then it will reflect its significance in terms of market valuation for new equity issues of a firm in emerging market. The argument is empirically tested for Indian data. The study reveals that the degree of diversification is insignificant in determining the degree of IPO underpricing. The study has also considered diversification of business group in analyzing its impact on pricing of IPO when a member firm of business group affiliated firm issues an IPO. The study reveals that the business group affiliation as well as degree of diversification of a business group is insignificant in determining the degree of IPO underpricing. Based on this study it is inferred that although the diversification strategy has resulted in improving the firm performance in emerging market, it is not necessarily valued by the investors while issuing new equity and does not reflect in its pricing.

Introduction

The reason of IPO underpricing is primarily attributed to information asymmetry. Some of the firm specific characteristics such as business group affiliation and diversification help in reducing information asymmetry due to its widespread operations. Business groups are commonly observed in many developed as well as emerging economies. Family controlled business groups are quite common and builds the basis for formation of business group in most of the emerging economies. Firms that are affiliated to business groups show some noteworthy differentiating characteristics such as capital structure, source of capital, governance and performance. In the process of expansion of business operations, business group diversify their business strategically. Therefore, it helps the business group to obtain economies of scale and scope. As a result, business group affiliated firms' exhibit better performance as compared to stand alone firms. Hence, it is very likely that the investors can perceive higher value for

group affiliated firms. In the context of IPO, literature points out that business group affiliation has influence on IPO underpricing. The studies reported in the literature have mixed results such as Japanese-keiretsu firms are less underpriced [1]. On the other hand, Korean chaebol and Indian business group affiliated firms are more underpriced as compared to stand alone firms [2, 3, 4]. However, other characteristic of business group such as degree of diversification is not linked with IPO underpricing. Since degree of diversification has influence on firm performance, identifying its relationship on IPO underpricing will enable the issuer and investors to evaluate the influence of diversification as one of the important factor while pricing the new equity issue.

This study is focused on understanding the influence of firm specific characteristics such as business group affiliation and degree of diversification on degree of IPO underpricing. Although the firm is not affiliated to a business group, firm specific diversification can influence the IPO underpricing since diversification has impact on firm performance. Similarly, firms that are affiliated to business group are likely to have influence of group diversification when the member firm is issuing an IPO. Therefore, this study explores the two features of group affiliation and diversification of a firm to understand their impact on IPO underpricing.

The results of this study reveal that business group affiliation is insignificant in determining the degree of IPO underpricing. In addition, the diversification of business group also does not have significant impact on IPO underpricing because the public going firms that are affiliated to business group show insignificant impact of contribution to its group sales, asset and profitability in determining IPO underpricing. The firms that are not affiliated to business groups also show insignificant impact of degree of diversification on IPO underpricing.

Business Group Affiliation and IPO Underpricing

The group affiliated firms are benefited from its network with the stakeholders. To minimize the risk, businesses are more diversified in terms of their operations in various segments, geographical reach and profile of stakeholders. The formation of business groups in India is mostly based on informal network such as religion and ethnicity. Firms that are affiliated to business group show many differentiating characteristics in terms of capital, ownership and corporate governance structure. These characteristics influence agency cost and firm performance after issuing an IPO by a member firm.

The study based on the sample from Philippines found that family owned business groups seeking foreign underwriter show greater degree of underpricing [5]. Studies based on Indian firms have concluded that IPOs of business group affiliated firms are more underpriced than the stand alone firms [3, 4]. Marisetty and Subrahmanyam [4] support greater underpricing of business group affiliated firm due to tunneling effect that outweighs the effect of certification of a business group firm. The study by Ghosh [3] supports signaling theory inferring that Indian business group affiliated firms are more underpriced because they would like to revisit the market to raise the capital in future. On the contrary, business group (keiretsu) affiliated firms of Japan resulted in lower degree of underpricing than that of others since they are expected to produce stable earnings in the future [1]. On the other hand the study related to Korean chaebol exhibit greater degree of underpricing in the interest of maintaining the controlling stake for private benefit by the promoters [2].

This study has explored group affiliation and diversification as important characteristics to identify its impact on IPO underpricing. There are two streams of literature link degree of

diversification with the firm value. One refers to diversification having positive impact on a firm value [6] and other studies observe diversification discount reducing overall value of diversified firm. The studies find evidence of value addition due to diversification because of economies of scale, scope and efficient allocation of resources. Business group affiliated firms exhibit some subtle characteristics which make them different from stand alone firms. From the financing aspect, business groups exhibit lesser constraint due to availability of internal capital market [7, 8], financial assistance extended by member firms [9], diversification of business group [10], cost sharing by group member firm [11] and tunneling and propping behavior [12]. The above mentioned characteristics of business group affiliated firms influence the firm performance. As a result, valuation of IPO is bound to get affected. Hence, the degree of IPO underpricing is expected to show the influence of group affiliation and degree of diversification. It is also observed that business group affiliated firms have better access to external funds because most often financial institutions are more willing to lend the funds to business group affiliated firms [8]. Hence, the business group affiliated firm show less constraints over the availability of capital funds in comparison with stand alone firms.

Chatterjee and Wernerfelt [13] support resource-based view where they empirically found that external financial resources are linked with more related diversification whereas internal financial resources are linked with unrelated diversification. Therefore, the diversified business groups are able to obtain the efficiency of internal financial resources and likely to add greater value to the affiliated firms. On the basis of these arguments, this study aims at analyzing the impact of group affiliation and diversification on IPO underpricing.

The availability of internal capital market helps group affiliated firms to go public relatively late since its inception. Longer operating history helps in reducing information asymmetry. As a result, valuation of initial equity issuance involves less uncertainty. Well established firms with longer operating history need less monitoring and are less underpriced [7]. The stage of organizational lifecycle of a firm is important to identify an urge of fund requirement raised through IPO issuance. Khanna and Rivkin [11] report that the performances of member firms belong to the same business group co-vary. As a result positive performance of any group affiliated firm will have positive spillover effect on the group performance.

The formation of Indian business groups are based on different social ties such as family, friends, cast, religion, language, ethnicity and geographical location. These types of bonding help in creating network effect resulting into improved performance and efficiency of a firm [14]. The cross holding of promoters' ownership stake in various firms within the group leads to decrease in agency cost and also lower the resource cost and transaction cost enabling the firm to post better results. Given the above facts associated with business group, investors should pay a higher price for the firms that are affiliated to business group. Many studies report that the performance of business affiliated firms is always better, because the value creating factors outweighs the effect over the factors that are quoted as disadvantages (tunneling and rent seeking behavior).

The study by Ghosh [3] supports the signaling theory and reports higher degree of underpricing with firms affiliated to business group. Another study by Marisetty and Subrahmanyam [4] report similar results as they found greater degree of underpricing with business group affiliated firms. The observed higher degree of underpricing is attributed to tunneling effect that negatively impacts the performance of business group affiliated firms. However, the evidence of underpricing due to tunneling is not clearly observed. Bertrand et al., [15], show that tunneling by Indian business houses is done through non operating profits of the

firm. They also find that valuation done by market forces also consider the phenomenon of tunneling for the purpose of valuation. Certification in relation to the reputation of business group can also have positive impact that enhances the value of the firm.

In addition, the firms that are affiliated to business group show higher age at the time of listing and this helps in reducing the information asymmetry due to longer operating history. Based on this premise the following hypothesis is proposed.

H_1: The degree of IPO underpricing of business group affiliated firms is less as compared to the stand alone firms

Diversification and IPO Underpricing

Myriad studies in the literature linked the relationship between degree of diversification and firm value. There are two different streams of research in the literature arguing positive effect of diversification to enhance firm value [16, 17] as well as negative effect that distorts the firm value known as diversification discount [18, 19]. One stream of literature supports value creation due to increase in productivity, reducing risk and efficient allocation of resources [6] and other one justifies diversification discount due to overinvestment problem, agency theory related arguments and other operational inefficiencies [20,18]. Although the relationship between the diversification and firm performance is conflicting, the emerging markets always have positive influence of diversification on firm performance [14, 21]. The study by Gomes and Livdan [6] analyze productivity of diversified firm and found that the diversification increases the firm productivity due to synergistic conditions and hence increases the value of the firm and maximizes shareholders wealth. However, through the same model they identify the possibility of rationalization of diversification discount and found that the value loss due to diversification is a function of firms leverage [22]. The resource based view suggests that the relationship between diversification and performance will be positive only if the firms are able to access the scarce resources which are costly otherwise [23].

Hadlock et al. [24] studied seasoned equity offerings and conclude that degree of diversification help the firms in reducing degree of information asymmetry. As a result, issuance of equity by more diversified firm receives less negative market reaction than low diversified or focused firms. They argue against the overinvestment hypothesis. If market perceives the equity issuance by diversified firms to raise the funds for undertaking less attractive project, then market reaction will be strongly negative towards its equity issuance. Therefore, diversification strategy can be adopted to reduce the information asymmetry while issuing the equity. They also point out that the misallocation of funds by diversified firm is normally in the context of internal funds and not for the funds that are raised externally. Since internal and external funds are not perfect substitute for each other the same will not hold true to the funds that are raised through equity.

The formation of business group more often results in building a big business empire and holding majority of the assets. In the process of growth and expansion adapted through forward and backward integration, it obtains greater degree of diversification. When the businesses are closely held with family ownership, it also diversifies promoters' investment portfolio. The formation of Indian business groups is largely based on family ownership. Therefore, higher degree of diversification of promoters' wealth exhibits less urge to go public for satisfying financing needs and helps in reducing overall operational risk. Hence, the degree of diversification can play important role in impacting the decisions related to equity issuance of

business group affiliated firms. As a result, it is argued that degree of diversification of a business group is one of the important features of business group affiliated firms that can influence the degree of underpricing. However, the literature is silent on identifying this relationship in the context of degree of IPO underpricing.

In emerging economies, capital markets are imperfect therefore there are various frictions in the market and raising funds through external capital market is relatively expensive than internal capital market. Therefore, availing internal capital market results in greater efficiency and reduces the cost of raising capital. Well diversified firms will have greater capacity of internal capital market. Hence, the valuation of diversified business group affiliated firms has value creation than the discount as studied by Khanna and Palepu [14] in the context of business group affiliated firm.

The decision of going public gives an advantage of diversifying the wealth by increasing liquidity to promoters' funds. The ownership dilution impacts the controlling right of the managers/promoters. Hence, the low diversified controlling shareholders exhibit greater urge to take firm public. Therefore, the firms that have low diversified controlling shareholders result in greater degree of underpricing. The degree of owner-shareholder's diversification and degree of IPO underpricing shows inverse relationship [25]. The degree of diversification influences the likelihood of the firm going public. Based on their results, it is inferred that urge to go public and degree of diversification of a firm play important role in influencing the degree of underpricing.

Therefore, this study proposes following hypothesis:

H_2: Firms with higher degree of diversification exhibit lower degree of underpricing

H_{2a}: Higher diversification of business group exhibit lower degree of IPO underpricing for business group affiliated firms

Data and Methodology

The data consists of IPOs issued from Jan. 2000 to Dec. 2010. There are total 452 IPOs considered for this study. The data of IPOs issued are obtained from SEBI website. The data for firm specific variables is obtained from Prowess database offered by Centre for Monitoring Indian Economy (CMIE). The data for oversubscription and the issuance method is obtained from Capitaline database. The data regarding the details of product wise sales information is collected from the IPO final draft prospectus from the website of SEBI.

To analyze the impact of business group affiliation the data of business group affiliation for each firm is obtained from CMIE.

The degree of underpricing is computed as,

$$Underpricing = \frac{Opening\ Price\ on\ Listing - Offer\ Price}{Offer\ Price} \times 100$$

The analysis of impact of group affiliation on degree of underpricing is proposed in H_1 and impact of diversification on underpricing is proposed in H_2. To test these hypotheses, following generalized model of cross section regression is applied.

$$Open\ Underpricing = Constant + LnFirmSpecificVariables + Business\ group\ affiliation + Diversification\ variables + error$$

Over a sample period, there are 99 IPOs issued by firms that are affiliated to business group (BG henceforth) and 330 are by firms that are not affiliated to business group (NBG henceforth).

To analyze the impact of degree of diversification on IPO underpricing, the study has used two different parameters to define the degree of diversification at firm level. The degree of diversification is quantified in the form of HHI and entropy as identified from the literature.

To compute the degree of diversification for a firm, this study used Herfindahl-Hirschman Index (HHI) for all the firms. This measure of diversification supported by Aw and Batra [26] where HHI is calculated as,

$$HHI = \sum S_i^2$$

where, S_i is value of sales of product i to total sales of the firm

Therefore, the value of HHI is 1 for the firms that are least diversified having only single product. The data for sales is obtained from the final prospectus filed with regulatory authorities (SEBI).

In addition to HHI, degree of diversification is also computed by considering entropy measure referred by Jacquemin and Berry [27]. The value of entropy is computed as follows:

$$\text{Entropy} = \sum P_i * \ln (1/P_i)$$

where P_i is proportion of sales of ith product to total sales.

HHI and Entropy, both measures of diversification are computed for listing year by considering product-wise sales of a firm that is going public. Sales data is collected from the prospectus.

The computed HHI is categorized in high, moderate and low diversified firm where HHI is lower than 33 percentile of the sample is categorized as high diversified, HHI between 33 to 66 percentile is classified as moderately diversified and HHI greater than 66 percentile is classified as low diversified firm.

The diversification of business group affiliated firms is computed by considering total number of industries in which the business group operates and total number of firms in a business group. The classification is based on two digits NIC code (equivalent to SIC in U.S.) Based on number of industries in which business group operates and number of companies, the degree of diversification is categorized into high, medium and low diversified business group as referred by Khanna and Palepu [14]. If the number of industries in a business group are less than 3, then it is referred as low diversified, between 4 to 7 is referred as moderately diversified and more than 7 is referred as high diversified business groups. Similarly, if number of companies are less than 5, then BG is considered as low diversified, between 5 and 15 is considered as moderately diversified and more than 15 is referred as high diversified business groups.

Results and Discussion

Table 1 presents the regression results for open underpricing as a dependent variable. In model 1, 2 we consider most of the issue specific characteristics with group affiliation as a

dummy variable. It is observed that most of the issue characteristic related variables such as issue size, issue mechanism (a binary variable based on IPO is issued through book building mechanism or fixed pricing mechanism) and oversubscription are highly significant however group affiliation is insignificant. In model 3 and 4 we try to analyze the interaction effect of various other variables with group affiliation. The results reveal that the interaction effect of group affiliation with issue mechanism and oversubscription are found significant.

Table 1: Regression Results in determining open underpricing to testing the influence of Group affiliation : Dependent Variable: Open Underpricing

	Model 1		**Model 2**		**Model 3**		**Model 4**	
Independent Variables	β	p	β	p	β	p	β	p
(Constant)								
Ln Issue Size	-.142	.003***	-.140	.005***	-.152	.002***	-.136	.133
Group affiliation	**-.053**	**.193**	**-.053**	**0.196**				
Ln Oversubscription	.556	.000***	.556	.000***	.566	.000***	.995	.000***
Issue Mechanism	0.098	.051*	.097	.054*	.245	.005***	.134	.017**
ListingYear	-.054	.239	-.053	.247				
Ln Age at Listing			-.003	.938				
Ln Sales							.028	.680
Ln Total Asset							-.026	.797
BG* IssueMechanism					**-.149**	**.079***		
BG*LnOversubscription							**-.444**	**.080***
N	416		414		416		349	
R Square	.349		.345		.348		.341	
Adjusted R Square	.341		.336		.341		.327	

In columns, ***, **, and * indicate significance at 1%, 5% and 10% level, respectively.

Table 2 Regression Results in determining open underpricing by considering HHI & entropy

Dependent Variable: Open Underpricing

	Diversification measure as HHI						**Diversification measure as Entropy**					
	Model 1		**Model 2**		**Model 3**		**Model 4**		**Model 5**		**Model 6**	
Independent Variables	β	p	β	p	β	p	β	p	β	p	β	p
Constant		.37		.424		.168	.526		.590		.245	
LnIssueSize	-.247	.000	-.251	.000	-.264	.000	-.231	.000***	-.234	.000***	-.245	.000***
Issue Mechanism	.023	.683	.021	.707	.017	.761	.028	.621	.027	.637	.023	.682
LnOversubscription	.671	.000***	.670	.000***	.667	.000***	.665	.000***	.664	.000***	.660	.000***
LnHHI	**.047**	**.322**	**.051**	**.297**	**.052**	**.286**						
LnAgeatListing			.020	.689	.027	.581			.015	.757	.021	.671
Group affiliation					-.056	.251					-.054	.274
LnEntropy							**-.007**	**.886**	**-.009**	**.858**	**-.009**	**.848**
N	244		243		243		238		237		237	
R Square	.461		.461		.464		.461		.461		.464	
Adjusted R Square	.452		.45		.450		.452		.450		.45	

In columns, ***, **, and * indicate significance at the 1%, 5% and 10% level, respectively.

Table 2 shows that the regression results in consideration with open underpricing as a dependent variable and HHI/entropy as a proxy measure of diversification. In different models

from 1 to 3, issue specific characteristic such issue size, issue mechanism are used as control variables to avoid the biasness. In these models, the diversification measure considered in the form of HHI is observed insignificant. This shows that although degree of diversification has influence on the firm performance as supported by literature, it does not have any impact on the degree of underpricing of IPO. Similar results are observed when degree of diversification is quantified in the form of entropy. The results are reported in model 4 to 6.

To study the impact of diversification of business group on IPO issued by its affiliated firm, the sample of only business group affiliated firms is considered. The regression results of open underpricing are reported in table 3. Empirically, it is observed that the degree of diversification of business group also does not impact the degree of IPO underpricing.

Table 3: Regression results for BG affiliated firms for open underpricing

	Model 1		**Model 2**		**Model 3**		**Model 4**	
Dependent Variable: Open Underpricing Independent Variables	**β**	**p**	**β**	**p**	**β**	**p**	**β**	**p**
Constant		.858		.638		.739		.530
LnIssueSize	-.188	.130	-.200	.106	-.157	.204	-.144	.241
Issue Mechanism	.102	.373	.107	.348	.119	.296	.115	.313
LnOversubscription	.582	.000***	.586	.000***	.587	.000***	.584	.000***
R No of companies	**.007**	**.944**	**.028**	**.779**				
LnAgeatListing			.111	.207	.098	.266		
R No of industries					**-.049**	**.622**	**-.071**	**.468**
N	91		91		91		91	
R Square	.359		.371		.372		.363	
Adjusted R Square	.33		.335		.336		.334	

In columns, ***, **, and * indicate significance at the 1%, 5% and 10% level, respectively.

All the results of cross section regression shows that the investors do not value the group affiliation and diversification of firm as well as diversification of business group while valuing the price of IPO.

Conclusions

Business group affiliation is one of the important firm characteristic of emerging markets. Due to various differentiating characteristics, the effect of business group affiliation is studied in influencing the degree of IPO underpricing. This study shows that business group affiliation does not have significant impact on IPO underpricing contradicting the results reported by Marisetty and Subrahmanyam [4]. However, interaction of group affiliation with oversubscription and issue mechanism is significant for determining open underpricing. This implies that group affiliation plays a role of mediator in determining the degree of underpricing. On the other hand, when the issue size is controlled, oversubscription is the only factor that significantly influences the degree of underpricing.

Although literature supports that the degree of diversification has greater impact on the firm value, this study reveals that the degree of diversification of a firm as well as business group does not have any impact on degree of IPO underpricing. Moreover, it supports that the issue characteristics are more significant in determining the degree of underpricing than the firm characteristics. Therefore, it can be inferred that though business group and diversification of

firm influence the firm value, it is not necessarily captured by investors for the valuation of IPO. Hence, group affiliation and diversification does not influence the IPO underpricing. The study contributes to the existing literature by linking the degree of diversification with IPO underpricing.

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