

Determinants of IPO Pricing: A Case of Pakistan Stock Market

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Abstract

The study aimed to explore the determinants of initial public offering (IPO) pricing by evaluating the causal relationship between IPO pricing and various firm-related factors, including pre-IPO retention of ownership, age of the firm, firm size, offer size, and investor sentiments. To highlight the impact of factors on investing, data from 93 firms that became publicly listed on the Pakistan Stock Exchange between 2012 and 2017 were collected, using descriptive statistics, correlation, and multiple regression tests. The analysis results showed a mixed effect on IPO pricing. Offer size and pre-IPO retained ownership have a negative impact, while the age of the firm, firm size, and investor sentiments have a positive impact on IPO pricing. Among all the variables, only investor sentiment has a nearly significant value. Later, the model was re-specified through the redundancy process, which asserted that only the size of the firm and the offer size of the IPO have significantly positive and negative effects on IPO pricing, respectively. The mentioned results were specific to the Pakistani stock market, which is an emerging market and considered a volatile market among its counterparts. This research promotes awareness about the factors typically considered and advertised by the IPO firm and investors to inform their decision about investing in the firm going public.

Keywords: Initial Public Offering, Pre-IPO Retention, Firm Profile, Investor Sentiment.

Introduction

Funds are the backbone of every enterprise organisation. The need for substantial funds by a company can be fulfilled through two resources: debt and equity. Firms can borrow funds from Creditors. Debt borrowing of resources has its price, which is flat and known as the cost of debt. From a firm's point of view, debt obligation is riskier than equity because its price is not tied to the company's income (Gitman et al., 2015). Through capital, the financial specialist has the privilege to the benefits and gains of the organisation. In value, the expense is immediately identified with the acquisition of the organisation. There are three select privileges of financial specialists over the lessors. The first right is the pre-emptive right. This enables financial specialists to maintain the proportionate ownership in the organisation when a new share is issued. The second right is the right to cast a ballot. Through this, the correct investor has the right to choose the administration of the organisation. The third right is profit (Gitman et al., 2015).

Invertors of preferred stockholders are considered as senior as the common stockholders. Preferred stock is quasi-debt. In preferred par value stock, the dividend is specified as a percentage of the

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stock value, and in non-par value stock, the dividend is defined in terms of an amount (Van Horne & Wachowicz, 2000).

Common stockholders are the owners of the company, but they have a secondary right to the assets and earnings compared to the preferred stockholders. They have the right to the company's earnings after the payment of interest on debt and dividends to preferred stockholders (Jaffe & Westerfield, 2004). A public company is not only an association that raises funds and strengthens the power of shareholders in terms of their ownership. It is not only limited to having several applicants for their applications, but it is more than just creating new investors, as it is more helpful for creating "potential investors and also beneficial in carefully examining these potential investors. All this is accomplished through several essential steps, such as Initial public offerings (IPOs) (Qiao, 2008). A public issue is subdivided into two categories: a general cash offer and a rights offer. In the general cash offer, equity securities are initially issued to the general public, whereas in the general securities, the securities are initially issued to existing owners. Securities issued under a rights offer are very common in all countries, except in the United States (Jaffe et al., 2004).

Initial public offerings are also treated as an extravagant source of capital (Naik & Mayur, 2017). Secondary offerings are not limited to small businesses or developing businesses. When companies issue their shares to the general public, it is impossible to estimate how much investors can invest in their business accurately, and even underwriters sometimes make errors in such calculations (Brealey et al., 2012). Pagano et al. (1998) analysed that the Italian companies that went public between 1982 and 1991, while the average age of the U.S venture capital-backed firms was 3.7 years and non-venture capital-backed firms had gone public for 11 years (Gompers, 1996; Lerner, 1994)

Alternatively, firms use private sources to finance their projects, and this was the first approach when firms needed to fund their projects. This concept was first analysed in 1998, and Scharfstein and Stein (2000) recorded it in a series of their papers with the title "The Dark Side of Internal Capital Market". Theoretically, it is believed that capital markets are subdivided into two categories: the first is internal, and the second is external markets. In the event of any difficulty, companies face in financing their project, they also opt to be acquired by a holding group or a company group. Lamont (1997) explains that funds are easily moved and allocated across different divisions by the various multinational headquarters. The emergence of new holding groups in emerging markets, particularly in East Asia, such as Japan and South Korea, lends support to this evidence.

Rent seeking in holding groups is emphasised by Scharfstein and Stein (2000), who claim that managers in charge may take all benefits and allocate the rent-seeking outcomes to weak projects to maximise their returns. Investment spending may be misallocated due to rent-seeking, and an increase in the cost of financing is also recorded. This issue negatively affects diversified firms, as the trading price of such firms is recorded as much lower than that of their specialised peers (Shleifer & Vishny, 1997). Moreover, Khanna and Tice (2000) also analysed that managers are key persons, as they raise the value of the firms, have the authority to make decisions, and are more likely to lose their jobs than in less diversified firms. The result will increase the efficiency of the internal capital market in related diversified groups.

During the first few days, a 5% increase in the share price of IPOs is being recorded, ranging from 10% to 15% above the price in the primary market, and this increase is extensively encouraged and acknowledged by academic scholars and practitioners (Kipngetich et al., 2011). There is a need to analyse and compare the offer price with the fair value to determine whether IPO shares

are being underpriced. The concept of fair price extends the author's arguments to a large extent. Purnanandam and Swaminathan (2004) exercise different price ratios to define the term "Fair Value", including price-to-EBITDA (earnings before interest, taxes, depreciation and amortisation), price to earnings and price to sales by taking different samples from non-IPO firms in the same industries and also considering industrial peers as IPO firms. Based on this context, this study aims to explore the determinants of IPO pricing by evaluating the causal relationship between IPO pricing and various firm-related factors, such as pre-IPO retention of ownership, age of the firm, firm size, offer size, and investor sentiments.

Literature Review

Behavioural Finance Theory

There are several primary explanations available for the IPO-related puzzles. One of the significant explanations is that most investors are often emotional and overly optimistic about newly traded shares. Loughran and Ritter (2002) calculate that in the hot market period, the average rate of underpriced IPOs for non-natural resource companies is 21.0%, and 15.8% is recorded outside that period. IPOs in natural resources were underpriced at 110.9% in a hot market and 18.3% in a cold market. For the first time, Ritter (1991) analysed the underperformance in the long run by taking a sample of 1526 IPOs in the U.S. market from the decade 1975-1984. It is interpreted and analysed by the researcher that the competitors are performing well compared to the firms that are going public, regardless of the differences in size and industry. This will cause the theoretical interest to arise only when it confirms Ritter's reasons reported in his paper. Firstly, opportunities are given to arbitrageurs to create an arbitrage condition in the market. Second, the market efficiency in the IPO market supports behavioural finance. Third, the IPO variations are most likely concerned with long-term performance.

The long-term underperformance and IPO share are strongly associated with each other. Several researchers, including Stoll and Curley (1970) and Stern and Bornstein (1985), have provided evidence in this regard. It is analysed that in most cases, the highest IPO returns may be unenthusiastic. Meanwhile, the credibility of the underperformance puzzle is weakened by conflicting empirical findings. For instance, Ritter (1991) argues that underpricing and long-run underperformance are not positively related to each other. To support this argument, paying attention to the findings by Krigman et al. (1999) reveals a positive association between underpricing and long-term underperformance. The same evidence is also supported by another research study conducted by Affleck-Graves et al. (1996) for three-month returns. Behavioural finance, as summarised by Barberis and Thaler (2003), also indicates some risks that should not be ignored. The first fundamental risks include management risks in the industry, macroeconomic factors, and other linked policies. The second risk is the noise dealer risk, which was introduced by De Long et al. (1990) and further developed by Shleifer and Vishny (1997).

The agency issues also create some liquidity problems. An agency problem refers to the conflict between owners and management. The management uses funds for productive purposes; meanwhile, the investors use management to maximise their returns. This situation negatively affects their relations. To resolve this issue, investors may exercise their holdings in unexpected situations, such as when there is an abnormal inconsistency in the market. The liquidations of holdings restrict managers from allocating resources to uncertain assets. This agency problem is also referred to as the "separation of brains and capital" (Shleifer & Vishny, 1997).

The implementation cost includes commission, ask-bid spread, and all transactional expenses accrued during the trading process. This theory predicts that the implementation cost will be small,

but it cannot be ignored in the real world. Some evidence also supports this finding, as noted by D'avolio (2002).

Some psychological explanations also support the behavioural model. Beliefs and opinions vary from person to person, based on what they can see. The numbers of strange beliefs are discussed in this research. The first one is overconfidence. The confidence increases with the increase in success, as events that have occurred in people's minds are relatively more likely to be recorded, at 80%, compared to non-occurrence events, which are recorded at 20%, as noted in Fischhoff et al. (1977). Another reason for overconfidence is the combination of optimism and wishful thinking. Weinstein's (1980) research suggests that people's views are influenced by their abilities, leading to overoptimism. The remaining aspects include representativeness (Gilovich et al., 1985; Tversky & Kahneman, 1974), conservatism (Lord et al., 1979), anchor and accessibility biases (Tversky & Kahneman, 1974).

Information Irregularity Theory

Theories under such streams are also referred to as the adverse selection theory. It is argued that asymmetrical situations usually occur between different investors, as noted by Rock (1986). By examining the previous research conducted by Grossman (1976), Rock assumes that any information collected from the publicly observed equilibrium price is considered a paradox. The second assumption is that the market price fails to reflect the value of stocks accurately and misprices securities in financial markets. The model explains that issuers reveal information about the IPO share price because they know the significant outcome will occur shortly, and underwriters certify that all information contained in the prospectus is accurate in all respects. Secondly, IPO investors have greater knowledge than the firms and underwriters, irrespective of their superior market knowledge. Some other researchers find that this situation encourages adverse selection, as noted by Akerlof (1978). Beatty and Ritter (1986) and Carter and Manaster (1990) report similar findings, indicating that professional and well-educated investors earn a significant profit on IPO shares compared to other investors. By discussing the different streams of theories, some investors suggest that asymmetry of information also exists between investors and issuers, as noted by Allen and Faulhaber (1989).

Sherman and Titman (2002) argue that the underpricing of IPO shares is a type of information-gathering cost that is designed to compensate investors for having limited information about the financial markets. This model explains that underwriters can select different allocation mechanisms by arranging a set of groups of investors at a price to maximise the IPO information. Underpricing also encourages the underwriter to form a group that consists of a large number of investors by declaring that compensation will be very high when the information on the IPO shares is accurately collected (James, 1997). Schenone (2004) presents opposing views from previous research and argues that the information collected for underlying assets is unclear. Underwriters cannot get the right price of the IPO shares with this insufficient information. Underwriters can easily estimate the IPO share price in the primary market only when they have better knowledge of the issuers and their quality. Benveniste et al. (2002) argue that if pioneers must bear the primary cost of any market inefficiencies, then no one would want to be a pioneer in financial IPO markets. Market failure is only caused by making inefficient investment decisions and a lack of information, and both "pioneers" and "followers" remain private.

Shareholder Agreement Theory

Shareholders actively participate in managing companies. Shareholders make some agreements on several managerial issues, especially on financing. Several IPO puzzles were first discussed in shareholders' agreement theory by Bernstein in 1988. As Chemla et al. (2007) explain, shareholders' rights theory focuses on the four issues discussed below. The first issue is that shareholders are more concerned with the option of selling stakes to their business partners. Second, the treatment of "tag-along rights" is re-exercised by the shareholders on behalf of their partners. Third, partners are being encouraged by the shareholders to participate in the new issuance through "drag-along rights". Fourth, "demand rights", which require the new shareholders to agree on going public. This theory greatly encourages the decision to go public and facilitates the exploration of the nature of IPO puzzles. The other intention is that shareholders also attract such investors who are considered more potential for their business and management methods. IPO mechanisms greatly influence the shareholders' structure (Stoughton & Zechner, 1998). By using the model of the agency problem, it is analysed to what extent underpricing determines the shareholder structure. To resolve this issue, the services of active brokers are utilised for institutional investors.

Shareholders expect that the ownership structure will be dissolved, regardless of the intentions discussed above. Booth and Chua (1996) argue that, First, issuers significantly demand a dispersed shareholder structure; this situation creates the opportunity for underpricing, and second, market liquidity. It is also analysed that underpricing is directly related to ownership diffusion. In addition, Stoughton and Zechner (1998) also explain that underpricing increased the possibility of shareholders monitoring management. It is also noted that underpricing is more severe than expected, as it is recorded as harsh (Dawson, 1987). New shares are taken into consideration in the calculation of the dilution effect. The market price of the offering shares is very high in the absence of underpricing in the IPO market, but it is lower in the presence of underpricing. This situation creates a new measure named "issuer-oriented underpricing". The new measure explains that the level of underpricing is always greater than the current perceptions. Under Dawson's measurement, the amount transferred in IPO shares due to underpricing is not recorded as significantly as expected. Barry (1989) identifies that the underpricing of wealth for IPO shares is recorded as less severe because existing shareholders actively participate in the buying and selling of IPO shares in the financial market.

Bhagat and Rangan (2004) find a positive relationship between IPO retention and IPO pricing. McBain and Krause (1989) documented that firms that retain high ownership pre-IPO have higher values. This is also documented by Brealey et al. (1977). Prior to the IPO, the natural log of the price retains ownership of the shares. Carter et al. (1998) noted that firms with a more extended operating history tend to have less uncertainty. These types of firms tend to have greater value in an IPO. According to Ritter (1991), newly listed companies face greater uncertainty due to their shorter operating histories. Butler, Keefe, and Kieschnick (2014) examined the effect of IPO firm age on the IPO pricing. The age of the firm is used in the model by taking the natural logarithm of the IPO year minus the founding year. Kipngetich et al. (2011) stated that firms with significant assets have lower uncertainty, therefore, have greater value or price. Dalton documented that the size of an IPO firm has a significant impact on the pricing of IPOs.

The natural log of a firm's assets measures its size. Miller (1997) documented that the stock demand curve may have a downslope. In other words, the supply curve moves to the right when there is an increase in the supply price. Butler et al. (2014) use the natural logarithm of the number of IPO shares in their regression model. The offer size is calculated using the natural log of the

IPO offer price. The stock market index prior to the offer reflects the investment trends of the market, and stock market trends represent investor sentiments. Ljungqvist et al. (2006) stated that IPO pricing is affected by investor sentiment. The PSX 100 index is used as a proxy for investor sentiment. As Kipngetich et al. (2011) used the NSE-20 share index before the IPO offer Month.

Based on the literature, the hypotheses formulated for the practical test are as follows:

H1: The Amount of shares retained by the IPO firm has a significant positive impact on the IPO Offer price.

H2: Age of IPO firms has a significant positive effect on IPO pricing.

H3: Assets of IPO firms have a significant positive impact on IPO offer price.

H4: The Offer size of IPO firms has a significantly negative impact on the IPO offer price.

H5: Investor sentiments have a significant positive effect on IPO Offer Price.

Research Methodology

At the time of data collection, there were 574 listed companies at the Pakistan Stock Exchange (PSX) during the 2000 to 2017 time period, out of which data of 93 companies that got listed in PSX during the data period was used for analysis, sourcing the data from the database of PSX and the prospectus of companies. Specifically, concerning the variables, Retain Ownership and IPO pricing data were given in the flotation files of PSX; age of firm was collected from official website of the concern firm; assets data was collected from the annual reports of IPO firm; offer size was given in the prospectus of the IPO firms; data of PSX 100 index for investor sentiments was sourced from PSX. The firm was excluded from the sample study if its data was not available or it had gone for a green shoe issue or a seasonal public offering. The issue price of the IPO is the dependent variable of the study, and the rest are the predictors. The price of the IPO share is the main factor through which the over- or under-pricing of the IPO share is affected after it is offered to the market. The price of the initial public offering (IPO) shares is also given in the prospectus of the IPO firm.

Data Analysis and Discussion

Descriptive statistics of the variables used in the study are presented in Table 1. The basic purpose of descriptive statistics is to check the features of the data used in the study. A descriptive statistic is a summary statistic that quantitatively describes or summarises features of a collection of data concerning the mean, median, mode, standard deviation, skewness, etc. of the data. This data provides an overview of the information at a glance. It shows that the price of the IPO has an increasing trend over time. They also exhibit a positive and generally increasing trend over time, as the mean of all the variables is positive. The median of eviconfirms that all variables have an increasing trend on average over time. Standard Deviation shows the deviation of data from the average value. Skewness shows the normality of the data. This result shows that the skewness values for all variables are zero, except for the price. So, all the independent variables are normally distributed. Kurtosis is a measure of the combined weight of a distribution's tails relative to the centre of the distribution. Kurtosis refers to the peakness (Evans et al., 2007).

Table 1: Descriptive Statistics

	P	LN_PIPO	LN_AGE	LN_SIZE	LN_OS	LN_INVS
Mean	24.26478	6.841859	2.056788	8.152260	5.110393	9.185409
Median	15.00000	6.681789	2.197225	7.999126	5.100476	9.252505
Maximum	100.0000	10.66917	4.941642	12.97804	7.673437	10.80570
Minimum	3.000000	3.912023	0.000000	2.644045	2.525729	7.207571
Std. Dev.	22.01653	1.300332	1.301205	1.886138	0.872165	0.914438
Skewness	1.854646	0.538135	-0.052833	-0.258122	-0.113067	-0.372339
Kurtosis	5.902777	3.212091	2.263361	4.042668	3.909887	2.863341

Pairwise correlation analysis of the variables is given in tables 2. Correlation is used to show the mutual relationship or connection between two or more variables. (Evans et al., 2007; Gujarati, 2009; Lind et al., 2012). Price association with the PIPO (pre-IPO retain ownership) is negative and it is weak because its value is -0.07. Price association with the Age (age of the IPO firm) is positive with 0.13 showing a light relationship. Price relationship with the size (assets of the IPO firm) is positive again showing slight gesture. Price association with the OS (Offer size of IPO) is negative. Price association with the INVS (investor sentiments) is positive. IPO price with predictors showed mixed relationship.

Table 2: Correlation Analysis

	P	LN_PIPO	LN_AGE	LN_SIZE	LN_OS	LN_INVS
P	1.000000					
LN_PIPO	-0.074958	1.000000				
LN_AGE	0.126991	0.409710	1.000000			
LN_SIZE	0.094593	0.733962	0.340863	1.000000		
LN_OS	-0.197520	0.667811	0.084516	0.519040	1.000000	
LN_INVS	0.237309	0.164029	0.068968	0.126148	0.003151	1.000000

Predictors of the study have positive association between each other. Like, PIPO and Age has positive and somehow good relationship having value of 0.41. PIPO and size have a strong and positive relationship i.e. 0.73 and cross the limit of collinearity. Size and age are also positively correlated at 0.34. OS (offer size) is strongly and positively related to the PIPO as 0.67 and may depict collinearity and same is the case of offer size and asset size. Investor sentiment and PIPO relationship is weak. PIPO has very strong relation with age, size and OS of firm under study. Relationship of price of IPO firm, firm of age, size and investor sentiment is positive, and investor sentiment has strong relation with price of IPO than the others. Investor sentiment has higher association than the other independent variable approximately 24%. Overall independent Variables has low degree of correlation or association with price of IPO.

After conducting correlation test, ordinary least square method was used to test the given model where significance level is 5 percent and results are given in table 3. Using the following regression model, impact of the predictors was analyzed:

$$P_{it} = \beta_0 + \beta_1 \text{Ln_PIPO}_{it} + \beta_2 \text{Ln_AGE}_{it} + \beta_3 \text{Ln_FSIZE}_{it} + \beta_4 \text{Ln_OS}_{it} + \beta_5 \text{Ln_INVS}_{it} + \varepsilon$$

- P_o refers to offer price of share and obtain from the prospectus of IPO firm
- β_o refers to the intercept.
- Ln_PIPO refers to retain capital or equity by the existing stakeholders.

- Ln_AGE refers to natural logarithm of age. The age of the firm is calculated as (IPO year – Founding year)
- Ln_FSIZE refers to natural Log of Total assets provided on the balance sheet of the IPO Company.
- Ln_OS refers to Natural log of offer size in millions of IPO.
- Ln_INVS refers to investor sentiments which are measured by the natural Log of PSX 100 share index on the IPO offer period.
- β_n is the coefficient of regression or slope of each independent variable where $n = 1, 2, 3, 4, 5$
- ε is the error term.

As per the results given in table 3, coefficients of the variables show that Pre-IPO retained ownership and offer size has a negative impact on IPO price. However, age of the firm, size of firm and investors sentiment have positive impact on price of IPO. The p-value of all coefficients of variables is greater than 0.05 except investor sentiments. Age (Ln_AGE), firm size (Ln_SIZE) and retain ownership (Ln_PIPO) are those variables which do not have significant effect on IPOs pricing because its p-value is greater than 0.05. Investors sentiment p-value is also on the border line of significance 0.05 showing a slight significant effect on IPO price. Further R-Square is 0.161 which means that explanatory variable accounts for only 16.1% variation in respond variable. F-statistic value is significant because it is less than 0.05. One of the possible reasons for insignificance of result is that the Pakistan Stock market has highly volatile market and is considered weakly efficient among the investors. The investors are not given the whole information. The chance of earning abnormal profit always remains there. Most of investors do not for fundamental or technical analysis to select stock for investment. Rather, they chose based on recommendations aroused because of rumors. Therefore, the price of IPO is not affected by the Age (Ln_AGE), firm size (Ln_SIZE) and retain ownership (Ln_PIPO) as depicted in the hypotheses. All hypotheses are rejected. Our multiple regression model results are consolidated with Kipngetich et al. (2011), Daily et al. (2005) and Ritter (2006) explain that there is no relationship between disclose information in prospectus and IPO's offer price.

Table 3: Regression Analysis

Dependent Variable: P				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.791066	29.68317	-0.195096	0.8459
LN_PIPO	-4.625357	3.590744	-1.288133	0.2024
LN_AGE	2.189028	2.238522	0.977890	0.3319
LN_SIZE	3.762189	1.994014	1.886741	0.0638
LN_OS	-4.898352	4.135147	-1.184565	0.2406
LN_INVS	5.613434	2.849501	1.969971	0.0532
R-squared	0.161050	Mean dependent var		24.26478
Sum squared resid	27653.02	Schwarz criterion		9.199444
Log likelihood	-304.6785	Hannan-Quinn criter.		9.082247
F-statistic	2.418775	Durbin-Watson stat		1.944262
Prob(F-statistic)	0.045388			

Table 4: Augmented Dickey Fuller Test

Null Hypothesis: LN_INV_S has a unit root		
Exogenous: Constant		
Lag Length: 0 (Automatic - based on SIC, maxlag=11)		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.721835	0.8353

Because predictors showed insignificance results following variables were redundant: Age of the firm data is insufficient to run the Unit Root Test. The unit root test is used to check the stationarity of the variable, tabulated in table 4. The P-value of unit root test should be less than 0.05. If the p-value is less than 0.05, it shows the stationarity of the data. Investor sentiment results of unit root test show the insignificance.

Its P-value is 0.8353 which is greater than 0.05. Probability F-statistic of investor sentiment also insignificance which means that this variable disturbs the model fitness. Constant probability is also greater than 0.05, investor sentiment has stationarity. There is a potential problem collinearity between the PIPO and SIZE. The correlation value of 0.733962 shows a strong correlation. Therefore, Ln_PIPO is redundant from significance model. After dropping the age, Ln_PIPO and investor sentiments from the model, following model remain for the analysis for which results are given in table 5:

$$P_o = \beta_0 + \beta_1 \text{Ln_FSIZE} + \beta_2 \text{Ln_OS} + \varepsilon$$

Table 5: Regression Analysis: Dependent Variable: P				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	44.63255	15.27489	2.921955	0.0045
LN_SIZE	3.716779	1.521820	2.442325	0.0167
LN_OS	-9.824747	3.327672	-2.952439	0.0041
R-squared	0.107804	Mean dependent var		23.52212
S.E. of regression	22.86403	Akaike info criterion		9.131663
Sum squared resid	42866.64	Schwarz criterion		9.217874
Log likelihood	-385.0957	Hannan-Quinn criter.		9.166340
F-statistic	4.954041	Durbin-Watson stat		1.778772
Prob(F-statistic)	0.009308			

Results given in table 5 assert that firm size having positive impact and offer size of the firm having negative impact have statistically significance effect on the IPO price as P-value of the LN_OS (0.0045) and LN_size (0.0167) are less than 0.05. Model fitness is shown by F-statistics probability value 0.00908. Value of Durbin-Watson test is 1.78 which is between 1.75 to 2.25. Therefore, it can be said that there is no auto-correlation.

Table 6: Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.799207	Prob. F(2,82)	0.4532
Obs*R-squared	1.625212	Prob. Chi-Square(2)	0.4437
Scaled explained SS	5.419817		

Table 6 asserts the results of heteroskedasticity assumption of the model. The probability value of chi-square is insignificant which reflects that there is homoscedasticity in this model. Keeping above discussion in view, it can be proclaimed that all the assumptions of OLS are fulfilled in this model. Ramsey reset test is given in table 7 which is used to test the fitness of the regression model. Ramsey RESET Test result shows that there is no general misspecification in this model. The F-stat value is 0.14 which is greater than 0.05. If the f-Stat value is less than 0.05 it shows the misspecification of the regression equation.

Table 7: Ramsey RESET Test

	Value	df	Probability
t-statistic	1.475566	81	0.1439
F-statistic	2.177294	(1, 81)	0.1439
Likelihood ratio	2.254647	1	0.1332
F-test summary:			
	Sum of Sq.	df	Mean Squares
Test SSR	1122.101	1	1122.101
Restricted SSR	42866.64	82	522.7639
Unrestricted SSR	41744.54	81	515.3647
LR test summary:			
	Value	df	
Restricted LogL	-385.0957	82	
Unrestricted LogL	-383.9684	81	

Conclusion

At the start and through the life of the company, it is required to issue capital stock. At Initial Public Offering (IPO), a company's shares are sold to the public for the first time. A private company converts itself to a public company through the IPO process. Initial public offerings are used by companies to raise capital, to possibly to make money from the early private investors, and to become publicly traded enterprises. A company selling shares is never required to repay the capital to its public investors. After the IPO, when shares trade freely in the secondary market, money passes between public investors. IPOs have various benefits for the company which are going in it like extend and diversifying equity base, enlarging to capital, increase in exposures, attracting and retaining better management etc. During the first few days, a 5% increase in the share price of the IPOs is recorded from 10% to 15% than in the price in the primary market and this increase is widely encouraged and accepted by academic scholars and practitioners. There is need to analyze and compare offer price with fair value to sort out the matter whether IPOs share are being underpriced. The concept of fair price extends the author's arguments to a large extent. This study examined the determinants of IPO pricing in Pakistan. It was intended to investigate the extent to which the independent variables affect the explained variance in the dependent variable, the offer price. The data collected was presented using descriptive statistics and correlations and tested using multiple regressions. In our research, we analyzed the impact of five independent variables i.e. pre-ipo retention of ownership, age of firm, size of firm, offer size and investor sentiments on the price of IPO. After performing the statistical techniques like descriptive statistics, Co-relation and regression, we came to know that these all collective independent variable do not have significant effect on the IPO pricing and our results are consistent with Kipngetich et al. (2011), Daily et al. (2005) and Ritter (2006). After the statistical scrutiny of

variable through redundant variables, we came to know that the offer size of IPO and the size of the firm the significant variable which effect the IPO price.

One of the possible reasons for insignificance of result is that the Pakistan Stock market has is highly volatile market and is considered inefficient among the investors. The investors are not given the whole information. The chance of earning abnormal profit always remains there. Most investors do not for fundamental or technical analysis to select stock for investment. Rather, they chose on the basis of recommendations aroused because of rumors. The basic objective is to find that the disclose information through prospectus or publicity of the IPOs firm to public has any significant for IPOs pricing. This study will help the company to pricing their IPOs so they can get their desired capital amount by issuing limited number of shares at the right price. The company will be able to sell their shares at equilibrium point. The company will be able to know the value of its share before issuing the share. Another benefit of this research is to investors. The investor can evaluate the share price of IPO by using the research. Which will reward them in the shape of a higher stock return. The study is aimed to study the effect of the pre- IPOs retention, age of firm, assets size of IPOs, the impact of offer size of IPOs and investor sentiments on IPO pricing in Pakistan.

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