The Factors Affecting the Money Left on the Table by Pakistani IPO Issuers

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Abstract: This study is about the level of under-pricing of 30 IPOs of eleven different sectors listed on Karachi Stock Exchange from the period 2006 to 2013. We also examined the factors that influence the money left on the table by IPO issuers in Pakistan. Like other countries, the under pricing was also found among the Pakistani IPOs. The sectors consist of Close Ended Mutual Fund, Commercial Banks, Modarabas, Investment Banks/Investment Companies, Textile Spinning, Miscellaneous, Chemicals, Engineering, Cement, Telecommunication and Power. The entire sample shows that market adjusted abnormal return of 68.22% is there in the sector of commercial bank, 14.88% in sector of Modarabas, 38.31% in investment banks and investment companies sector, 97.51% in Miscellaneous sector, 66.99% in Chemicals sectors, 143.66% in Engineering sector, 25.36% in Cement sector and 251.24% in power sector while investors have faced loss -21.45% in Close-End Mutual Funds sector, -32.89% in textile spinning sector and -19.84% in telecommunication sector. We have used the regression analysis to observe the level of under-pricing regarding eleven different sectors. Among the variables we use in our study ex-ante uncertainty and over-subscription variables showed significant effect while the other variables which include proportion of shares offered to general public, log of offer size and market volatility did not show great effect on the under-pricing.

Keywords: IPO (Initial Public Offering); MV (Market Volatility); MAAR (Market Adjusted Abnormal Returns); EAU **(**Ex-ante Uncertainty)

JEL Classification: G1, G2

1. Introduction

Initial Public Offering (IPO) is said to take place when any company floats its shares in the public and thus finances itself through equity financing. The amount of money left on the table is defined as the difference between the offer price and the closing price of the first trading day for a given stock. It can also be given as

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the decreased offer price and what actually should be the price of the IPO. That is the price less than its fair market value. This is also called under-pricing of IPOs.

This can be explained as when companies float its shares in the public, they offer their shares at a price which is dropped to a certain level that it creates a significant level of under-pricing. When IPO is issued it is considered to be a risky venture and companies do not really want that their shares are not purchased by general public due to its excessive price. This is the amount which is left by the IPO issuer on the table. The issuer could have gained more returns if the IPO was priced at its intrinsic fair market value. But by pricing low it has left some significant amount of money on the table which could have otherwise been gained. Furthermore, some companies hire underwriters and these underwriters join together to form a syndicate. These underwriters have the liability to sell the shares at a particular price. If the shares are not purchased by the general public as it was anticipated in the book building process, then all the loss will be borne by the underwriter or the syndicate. In order to avoid this liability and the risk associated with it, the price is lowered to such an extent that investors will purchase these securities and may find it undervalued. A share is considered to be underpriced if the offer price is considerably low as compare to the closing price of that IPO. The market adjusted abnormal return is given as the difference between the returns of the Initial Public Offering (IPO) and the market returns during the same time period.

Initial public offering (IPO) can be issued at any time in the life of corporation. IPO is issued when the stock of the company is issued for the first time. But when the stock is issued second time, it is called seasoned equity or second issue. Many companies throughout the world have gone public and they have offered its shares to the investors. In Pakistan, there are number of companies which are going public and floating its shares for the general public. These companies have chosen the method of financing itself through equity. The trend of issuing IPO is increasing as more and more companies are issuing IPOs in Pakistan. In the past, the Stock Market has seen a rapid growth taking the stock market index (KSE-100 index) above the 15000 points. But if you look at the most recent past, the Stock market has crashed and reached as low as 5000 points. The uncertainty and high volatility has resulted high risk as well as high returns in the stock market. The risk in the stock market is due to many reasons and different policies. These anomalous behaviors of stocks are very unusual in nature. No definite reasons are there to explain the trends in the stock market of Pakistan. Some of these issues regarding the level of under-pricing of IPO in Pakistan are addressed in this research.

1.1. The Objectives of this Study

The objectives of this study are as follows**:**

1. to identify the factors which affect the money left on the table by the IPOs of Pakistan issuing firms and which variable is significantly affecting its level;
2. to measure the performance of Pakistani IPOs in the short run which is the performance on the first trading day in the Karachi Stock Market

2. Literature Review

Inseok Shin (2009) in his article compares the price support mechanism between the Korean Stock Market and US Stock Market. The book building method was present in Korean as an official IPO method for a long time period, in Korea the underwriter's role was severely limited as compare to the US. The underwriter could only select prices within the given interval around the weighted average of the prices. This restriction was lifted later on. In Korea, the price support regulation is direct cost associated with the underwriters. There is a bargain between the underwriter syndicate and the issuing company. In his study, he constructed a model which determines the price of an IPO through interactions of the underwriter syndicate and the issuing firm. He further argues that the regulatory change in 2003 affected the mechanism of under-pricing because it changes the cost associated with underwriters.

In his hypothesis 1 he argues that the level of the underwriter's effort increases as the level of the IPO prices decreases. When it raises the IPO price it increases the effort of the underwriter to lower the price of the IPO. In hypothesis 2, he states that the level of the underwriter's effort well as the level of the issuer's effort increases with the passage of time. This shows a positive relationship between the two variables. However, there is a significant relationship between effort of the issuer and the underwriters as well as the under-pricing. In Hypothesis 3, he states that after the regulatory change in August 2003, the magnitude of the relationship between the newly issued shares is less than IPO returns.

The result shows that the coefficient estimates are significant. The regressions are quite higher for sample data. The coefficients of interest display the changes in magnitudes, as predicted by the hypotheses. Hypothesis 1, had been proved with (significant at the 5% significance level), but became insignificant there after. Hypothesis 2 had been proved valid also. When the investors are expecting that the prices will exceed their own valuations of future dividends. The results of the paper suggest that the same study can be done with different variables and even different

exogenous environment that changes the decisions of underwriters. Therefore, the key to this study and move further is to understand the external environmental conditions and other factors.

Muhammad Khalid Sohail and Abdul Raheman (2009*)* studied the level of under pricing of companies of Pakistan. In Pakistan under-pricing was present in majority of the IPOs as it was there in IPOs other countries. They also discussed the long run performance of Pakistani IPOs by using Cumulative Abnormal Returns (CAR) and Buy and Hold Abnormal Returns (BHAR) models. They also showed analysis on these models by applying yearly data. The collected sample data consisted of 50 IPOs under which the majority of new issues of companies floated on the KSE from year 2000 through year 2006 falls. Data was collected from the website of Khistocks and business recorder, while the KSE data base, company's annual reports were also used as a source of information and relevant data. Out of this data the financial sector and the non financial sector covered the 50% of the total sample size.

Variables include the Market adjusted abnormal returns, which is used as dependent variable and under-pricing is calculated through this variable. Some other independent variables include the ex-ante uncertainty and this is the standard deviation of daily returns of IPOs. Log of Market Capitalization is the natural log of market capitalization of the IPO issuing firm. Another variable is the Incidence of secondary market issues. Market volatility is another variable and is calculated as standard deviation of daily market return of stock market.

The offer size variable is also given as Log of offer size. Among the other variables include the proportion of shares offered to general public, and oversubscription variable which describes the over subscription of shares. Price to earnings ratio is used as a proxy variable to measure the firm's value. The last variable is market adjusted return after one year. They used four hypotheses in order to measure the under-pricing of IPOs, IPO's performance after 1-year and Cross-sectional Regression Analysis. The model they specified were market adjusted model, cumulative abnormal returns, buy and hold abnormal returns and cross sectional regression analysis.

The results are similar to the previous researches conducted in the other countries. The under-pricing is also shown in IPOs of Pakistan. The results show that the IPOs give significant initial excess returns in line which verifies the under-pricing of IPOs.

3. Methodology

In this portion of research, all the variables are equally important that determine the amount left on the table by IPO issuers by applying statistical techniques.

3.1. Sample Data

The sample data consists of 30 IPOs which covers 86% of the total number of IPOs listed on the Karachi Stock Exchange. The data has been collected from year 2006 to 2013. The data for our variables is gathered from the KSE official website, the website of business recorder and khistocks website. All these data consisted of 11 different sectors which include Close Ended Mutual Fund, Commercial Banks, Modarabas, Investment Banks/Investment Companies, Textile Spinning, Miscellaneous, Chemicals, Engineering, Cement, Telecommunication and Power.

3.2. Variables

All the variables are factors that equally affect the level of under-pricing in Pakistani IPOs. All these variables have been selected from research work of M. K. Sohail and Abdul Rehman (2009). Out of these variables, only one variable is dependent which the Market Adjusted Abnormal Returns is. The hypothesis is studied by using these variables.

MAAR: Market Adjusted Abnormal Returns is the only dependent variable and the amount of money left on the table is calculated by this variable.

EAU: Ex-ante Uncertainty is the independent variable which measures the volatility of new issue on KSE for over one month from the date of formal listing. It is the standard deviation of these above mentioned daily returns.

LMC: This variable is Log of Market Capitalization, which is the Market Capitalization of IPO gathered on the 10^{th} day of listing in the stock exchange. The log taken is the natural of each value.

MV: This variable is the Market Volatility of the Karachi Stock Exchange returns for two months before the closing date of subscription. It is also calculated as standard deviation of these daily market returns.

LOS: Log of Offer Size, is another independent variable which is measured as number of shares offered multiplied by the offering price of that share. The log taken in this variable is the natural log for each offer size value.

PSO: Proportion of Shares Offered is measured as the percentage of shares offered to employees and general public.

OS: Oversubscription Variable measures that how many times the offered shares are oversubscribed. It is calculated as dividing the number of shares subscribed by number of shares offered.

All the above mentioned independent variable affects the Market Adjusted Abnormal Returns which is the dependent variable in a positive or negative way. As we have discussed in the literature review that there will be positive relationship with PSO, EAU, MV, OS and negative with LMC and LOS.

3.3. Hypothesis and its Testing

1. the amount of money left on the table (under-pricing) regarding IPOs is different from zero is tested. This hypothesis is tested by regression analysis;
2. there is a positive relationship with variable MAAR and variables PSO, EAU, MV and OS. This hypothesis is tested by regression analysis;
3. there is a negative relationship with variable MAAR and variables LOS and LMC. This hypothesis is tested by regression analysis.

3.4. Model Specification

3.4.1. Short Run Performance

The Pakistani IPOs short run performance is measured by market adjusted model and it is calculated for money left on the table.

$$\mathbf{R_{i,1} = \frac{P_{i,1}-P_{i,0}}{P_{i,0}}} \quad \text{and} \quad \mathbf{R_{m,1} = \frac{I_{m,1}-I_{i,0}}{I_{i,0}}}$$

Where *P* is the price of stock 'i' at the close of the first trading day of the issuing stock, *i*, 0 *P* is the offer price of the issuing stock and *i, 1 R* is the total first-day return which is the simple return on the stock 'i'. *m*,1 *I* is the market index value at the close of first trading and *m*,0 *I* is the market index value on the offer day of the appropriate stock, while *m*,1 *R* is the first day's equivalent market return. The under pricing is calculated by taking the difference of both the above mentioned returns. It is given by the formula;

Market Adjusted Abnormal Return (MAAR) = $\mathbf{R_{i,1} - R_{m,1}}$

3.4.2. Regression Analysis

MAAR*i*: It is the Dependent variable used for amount of money left under the table by IPO issuers.

a: The intercept of the model

ß: Coefficient of the X variables (independent variables)

X*i:* Independent variables used to determine amount of money left under the table by IPO issuers.

$$MAAR_i = \alpha + \beta_1 EAU_i + \beta_2 LMC_i + \beta_3 PSO_i + \beta_4 MV_i + \beta_5 OS_i + \beta_6 LOS_i + e_i$$

4. Data Analysis & Discussion

Descriptive and quantitative analysis is discussed in this portion of study. In this part, we provide an analysis of under-pricing. Second, we use regression analysis to find the determinants of under-pricing in different sectors.

4.1. Measure of Under Pricing

In our research it is observed that on average, under pricing of IPOs is there in the market. The investors gain abnormal returns by purchasing shares at subscription price and then selling them at close of the first trading day of their listing on the Karachi Stock Market. Our results show that 64% IPOs have given abnormal market return which shows that the IPOs were underpriced. As in the developed market the underpricing is still present among the IPOs of Pakistan. The investors have earned profit of 68.22% in the sector of commercial bank, 14.88% in sector of Modarabas, 38.31% in investment banks and investment companies sector, 97.51% in Miscellaneous sector, 66.99% in Chemicals sectors, 143.66% in Engineering sector, 25.36% in Cement sector and 251.24% in power sector while investors have faced loss -21.45% in Close-End Mutual Funds sector, -32.89% in textile spinning sector and -19.84% in telecommunication sector.

The entire sample shows that market adjusted abnormal return of 68.22% is there in the sector of commercial bank, 14.88% in sector of Modarabas, 38.31% in investment banks and investment companies sector, 97.51% in Miscellaneous sector, 66.99% in Chemicals sectors, 143.66% in Engineering sector, 25.36% in Cement sector and 251.24% in power sector while investors have faced loss -21.45% in Close-End Mutual Funds sector, -32.89% in textile spinning sector and -19.84% in telecommunication sector. These findings disprove our null hypothesis 1. Based on our these findings, we may say with a confidence level of 95% that if investors subscribed for shares in the new issues of Close Ended Mutual Fund they would have faced loss of -21.45%, profit of 68.22% in Commercial Banks, 14.88% in Modarabas, 38.31% in Investment Banks/Investment Companies, loss of -32.89% in Textile Spinning, profit of 97.51% in Miscellaneous, profit of 66.99% in

Chemicals, in Engineering 143.66% 251.24%, 25.36% in Cement, loss of -19.84% in Telecommunication and profit of 251.24% in Power sector.

For the period of 2006-2013 the market adjusted abnormal return for the initial first day of IPOs is computed. It is calculated by calculating the Initial Raw Returns, Market Returns and then taking the difference to obtain the Market Adjusted Abnormal returns. It is shown in the data that the average first day return of Pakistani IPOs is positive for every year from 2006-2013. Sector-wise analysis is also shown in results of our study. The under-pricing is present in every sector except Close-End Mutual Funds sector, textile spinning sector and telecommunication sector. The average market adjusted abnormal rate of returns that is given for all sectors lies between -32.89% and 251.24%. From all these sectors under study the sector of Power has given maximum level of returns. Furthermore, high initial raw returns have been observed in sectors Engineering, Commercial Banks, Chemical and Miscellaneous. In these sectors, the average market adjusted abnormal returns is more than 66%, which is higher than the average market adjusted abnormal return of whole the sample of 30 IPOs. While the remaining sectors indicate lower average market adjusted abnormal returns.

4.2. Regression Analysis and its Results

Regression Analysis has been used to explain variation in under pricing. The results are shown in **Table 1.**

Regression Statistics					
Multiple R	0.7559				
R Square	0.5711				
Adjusted R Square	0.4596				
Standard Error	0.5972				
Observations	30				
ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	10.940	1.823	5.112	0.0018
Residual	23	8.2032	0.3566		
Total	29	19.143			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*
Intercept	-1.7429	5.6417	-0.3089	0.7601	-13.413
PSO	0.0312	0.0498	0.6338	0.5324	-0.0713
EAU	-5.4827	2.2830	-2.4012	0.0248	-10.204
OS	0.17592	0.03434	5.1227	3.442	0.1048
LMC	-0.01184	0.0858	-0.1378	0.891	-0.1894
LOS	-0.0518	0.0917	-0.5658	0.577	-0.2415
MV	-672.35	1170.2	-0.5745	0.571	-3093.2

The results indicate that regression model is highly significant with F-statistic 5.11. The adjusted R square at 57.14 percent and at 45.96 percent shows that a large variability of under-pricing of IPOs listed at KSE.

The results of regression model show that a positive and highly significant relationship between Over Subscription and the level of under-pricing. This is due to the fact that investors are buying those shares in larger quantities which they expect to perform well in the market. This result supports M. K. Sohail and Abdul Raheman (2009). While the only other significant variable is Ex Ante Uncertainty but it is showing negative relationship. The investors are willing to pay more for the uncertainty for a particular stock. This result supports M. K. Sohail and Abdul Raheman (2009). As the results of variable LMC suggests, there is an insignificant and negative relationship between LMC and the level of under-pricing variables. These results are contrary to M. K. Sohail and Abdul Raheman (2009). Negative and insignificant relationship was found between LOS and the level of under-pricing. These results are somewhat contrary to M. K. Sohail and Abdul Raheman (2009) as they also found the negative relationship. There is a negative and insignificant relationship between MV and Underpricing.These results are highly contrary to M. K. Sohail and Abdul Raheman (2009) the table shows the results of variable PSO, that there is an insignificant and negative relationship between LMC and the level of under-pricing variables. These results are similar to M. K. Sohail and Abdul Raheman (2009).

5. Conclusions

We have studied the amount of money left on the table and also the factors that affect this amount by IPO issuers in Pakistan from 2006-2013. This study was done in 11 sectors comprising of Close Ended Mutual Fund, Commercial Banks, Modarabas, Investment Banks/Investment Companies, Textile Spinning,

Miscellaneous, Chemicals, Engineering, Cement, Telecommunication and Power. The result is similar to previous research that was conducted by M. K. Sohail and Abdul Raheman as we have adopted the same method. The under-pricing is also found among the IPOs of developed markets. So the amount left under table is also found in IPOs of Pakistani firms. Our results have shown that the IPOs of Pakistan have given statistically significant market adjusted abnormal returns.

The investors have earned about 36.44 % average profit by purchasing IPOs offered during year 2006-2010. The investors have earned profit of 68.22 % in the sector of commercial bank, 14.88% in sector of Modarabas, 38.31 % in investment banks and investment companies sector, 97.51% in Miscellaneous sector, 66.99 % in Chemicals sectors, 143.66 % in Engineering sector, 25.36 % in Cement sector and 251.24 % in power sector while investors have faced loss -21.45% in Close-End Mutual Funds sector, -32.89 % in textile spinning sector and -19.84 % in telecommunication sector.

By applying the regression model, our results show that Over Subscription and Ex-Ante Uncertainty are the only significant variables among 11 different sectors which consist of Close Ended Mutual Fund, Commercial Banks, Modarabas, Investment Banks/Investment Companies, Textile Spinning, Miscellaneous, Chemicals, Engineering, Cement, Telecommunication and Power for determining the amount of money left on the table by IPO issuers. The other variables which include Proportion of shares offered to general public, over subscription, log of market capitalization, log of offer size and market volatility have given some value for describing amount of money left on the table by IPO issuers. There are many issues in our study which should be addressed in the field of IPO under-pricing in Pakistan. Majority of our variables were insignificant and can be changed when calculating the under-pricing. These variables can be taken from any other previous researches which have been done in other under-developed markets.

6. References

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