



Economic Analysis of Initial Public Offering Underpricing in Stock Market of Pakistan

Gulzar Ali^{1*}, Ansa Javed Khan², Sara Rafiq³

¹Department of Economics, Islamia College University Peshawar, Khyber Pakhtunkhwa, Pakistan, ²Women University Mardan, Khyber Pakhtunkhwa, Pakistan, ³Department of Economics, Women University Mardan, Khyber Pakhtunkhwa, Pakistan.

*Email: gulzaricup@yahoo.com

Received: 06 May 2020

Accepted: 05 July 2020

DOI: <https://doi.org/10.32479/ijefi.10040>

ABSTRACT

The Initial Public Offering (IPO) underpricing in the stock market is considered an important factor to attract the investor towards the stock. In this study in addition to IPO the economic analysis of underpricing is investigated to examine economic effects of influencing factor of IPO underpricing in stock market of Pakistan for 98 listed companies taking their data for the period of 2013-2018. The findings of the regression analysis indicates that assets return, equities, earnings per share and profit margin are the important factors of IPO underpricing as there economic return to investor has significant, however, the effect of earning-price remains insignificant on IPO underpricing. The descriptive analysis of the study shows maturity of the selected variable and variance influencing factor indicates that the variables isn't multi-collinear with each other. The study concludes that impact of the liquidity level of IPO underpricing in the optional market would help the financial investors in strategizing their speculation through exchanging component.

Keywords: Economic Analysis, Initial Public Offering Underpricing, Pakistan Stock Market

JEL Classifications: G12, G23, G32

1. BACKGROUND AND SIGNIFICANCE

The initial or primary share that has been offered to investors or speculators for economic returns on their investment of capital is known as Initial Public Offering (IPO). Mostly the new established or those firms and industries that are running in lack of funds or aims to expand their business, production and capital offer IPO to investors. The IPO offers enables firms and manufacturing units to expend their capital, investment, replace classical technology with modern technology, increase capital and labor efficiency by hiring skilled labor. The IPO offering to general public is the most common financing way especially for private business firms and the investors invest the funds to earn lum-sum economic returns (Alok et al., 2016). The IPO underpricing is an important factors to attract new investor in open market organization aims to support the deficit financing by offering them some incentives for future returns on current investment.

IPO underpricing refers to the offering of a company to generate funds for the 1st time to investors by a public stock offering. After the completion of the IPO underpricing the company can apply for to the stock exchange or traded quotation system, to become a listed company. From IPO underpricing the firm's aims to minimize the cost of their capital and at the same time gives some economic returns to investors. Moreover, IPOs underpricing give a chance to investor to make a noteworthy position in a stock, something that would be as a rule more costly and set aside a long opportunity to perform in the secondary market (Binti et al., 2013).

With respect to IPOs in Pakistan, a couple of observational studies have examined the performance of IPO underpricing in the stock exchange of Pakistan, however in most of these studies have just used the Pakistan Stock Exchange as a benchmark. Therefore, there is a need of keen empirical study that deeply analyzes the influencing factors of IPO underpricing in Pakistan stock

exchange. For this purpose, this research study aims to empirically investigate the economic analysis of influencing factors of IPO underpricing in Pakistan stock exchange. Likewise, an expected utilization of-continues exposure index for estimating the level of the divulgence and furthermore to draw close connections of the influencing factors of IPO underpricing membership rates by non-natives and institutional speculators too. Various papers consider different components that can cause the underpricing issue of IPO's underpricing in the different countries Stock Exchange, specifically, the proximity of investment firms among the IPO underpricing unique investors that may influence the level of underpricing. However, there is lack of empirical investigation that coordinate model of the risk corporate governance improvement process in an IPO underpricing partnership and its resulting sway on returns for IPOs underpricing stock exchange reaction in the Pakistan.

Despite the fact that progressions the helpful guidelines secure the financial investor. However, those investors who have lack of information as well low capacity to assess the information on IPO underpricing effects adversely. Keeping it in view, this study also inspects those variables which influence the underlying of IPOs underpricing. By utilizing the available information on the stock exchange of Pakistan, this study examines information which has relations to the arrival of IPOs underpricing, which are noteworthy in their connections. At last, in this study we builds up the underlying expectation IPO underpricing model that will also be helpful for the new investor regarding their investment decision.

1.1. Research Objectives

This research study aims to empirically investigate the economic analysis of IPO underpricing in stock market of Pakistan of 98 enlisted companies during 2013-2018.

2. LITERATURE REVIEW

The firms and industries do IPO underpricing due to the uncertainty that usually existed in the market. In most of the times the firms and industries for financing the capital and for sound running of their business do IPO and offered to general public. The salient feature of IPO underpricing for the firms to gain and support capital especially in case of private firms (Ruiz-Cabestre and Acedo-Ramirez, 2016). Certo et al. (2003) investigated the effect and performance of IPO underpricing used meta-analysis of synthetic research and found that potential and risk-lover investors invest their capital on providing the IPO opportunities for future gain. Further, concluded that IPO performance can be bitterly examined in the presence of asymmetry information asymmetry. Aharony et al. (2012) examined that IPO investment firms offered a variety of incentives to the investors that include, the guarantor notoriety, firm-related hazard factors, and so on, have been distinguished as components that may influence the level of IPO underpricing. Bell et al. (2012) investigated the effect of IPO underpricing on the firms and investors applied the ex-risk coordinated model and found that IPO underpricing has an influential effect in the stock market of United Kingdom.

Balvers et al. (2015) found that behavior of the investors especially those who are risk-taking may predict higher price of IPO shares

than actual of market value, therefore, the firms becomes behavior biased. According the (Zhan, 2013) the investors that invest in the IPO shares in the market later may learn experience from the former investors and ignore private information to imitate former investor's behavior. If the investors think issue price is high, but they can affect the decision of following investors, which will make the IPO fail. Conversely, if less early investors think issue price is low and worth to purchase, it will increase the demand of the stock. This phenomenon is called "cascade effect." In the volatilities in the market and uncertainties the IPO underpricing quickly respond and some times the return and shares of IPO volume reacts to changes in stock exchange unpredictability. The results found positive connection between market volatility and IPO returns particularly articulated when stock exchange return is at normal levels (Busaba et al., 2009). The connection likewise holds at the business level, in a pooled time cross-industry. These outcomes are predictable with speculation that the capacity to find investor valuations previously choosing to offer IPO in various stock exchanges. The impact of unpredictability on this choice is most astounding in normal stock exchanges (Braun and Larrain, 2005).

Leila and Farshid (2014) analyzed the factors that affect the IPO underpricing in in Stock Exchange of Tehran. The study found that shares values of IPO underpricing for enlisted 115 stock trading companies had most astounding effect on cost of starting contributions valuing the underlying offering trade in Tehran Stock Exchange is as real and to examine the elements that influence evaluating of beginning offer on stock trade. Indriani and Marlia (2014) investigated the behavior of IPO underpricing for 5 years (2009-2013) in stock exchange of Indonesia. In 2012 all of the IPOs are underpriced in Indonesia, however, IPO organizations did not create most extreme subsidizing. Contrast with neighborhood nations, for example, Malaysia, Philippines, Singapore, Thailand, and Hongkong the normal introductory returns of Indonesia IPO were 25.7% (Indriani and Marlia, 2014). Besides, the quantities of underpricing from 2014 to 2016 were expanded that nearly hit 100% for a long time successively during 2014 to 2016. In the Stock Exchange of Indonesia nine ventures recorded; Service, Property, Mining, Plantation, Trade, Assembling, Financial, Tourism, and Transportation. Among those ventures, Financial and Manufacturing ventures have the biggest offer rates of IPOs in 2007-2016. Money related Industry has 18% of the aggregate IPOs, and Assembling Industry has 16%. There is a huge addition from the information acquired in the previous 5 years. It is fascinating to dissect the underpricing of IPO firms since the factors utilized as a part of past investigates demonstrate conflicting outcomes.

Kukies (2015) investigated the impacts of IPO underpricing on the emerging stock of companies and its effect on shares of IPO in stock market of 42 countries. The study found that the influential role of IPOs underpricing and found that with passage of time the increase the stock shares were noted in the studied countries. The study also concluded that the emerging markets in Germany allowed new firms from ventures to offer IPOs to general public. Pande and Vaidyanathan (2015) investigated the effect of IPO on the stock exchange of India focusing on the IPO demands and issues as well the expenses spend by firms on the IPO marketing.

The study presumed that the issuance of IPO underpricing and the posting delay decidedly affect the principal day under estimating while the impact of cash spent on the showcasing of the IPO remained negative.

3. METHODOLOGICAL FRAMEWORK AND DESCRIPTIONS OF VARIABLES

Estimating the economics analysis of IPO underpricing and their return effect of the various variables that possibly considered the influencing factor by this study of various firms enlisted in Pakistan stock exchange, the methodological framework is developed that is consistent to the studied of (Zhang and Yu, 2016; and Demir et al., 2004) for estimating the return analysis and estimation of IPO underpricing. To measure the IPO underpricing, this study marginally used the standard midpoints of the estimations of IPO underpricing measures over the time of 60 exchanging days after the main 1st day offer for the public also used by (Amihud, 2002), that is

$$IPOU = \frac{1}{60} \sum_{t=1}^{t+59} IPO \text{ Underpricing} \quad (1)$$

This study is focusing on the economic return gained from IPO underpricing that has been offered for the investors at a lower cost in the trading market. Gradually the value of cost of IPO rises that leads to an increase of investors returns and also helps in maturing the cost of companies. Subsequently the return on IPO increases as it has offered to investor for the 1st time and the worth of its shares also becomes more valuable as it was in the first offer to public. The investors thus enable to sell them at a higher market price as it has been offered and buy them at a lower price. However, some times the competitive price restrict the investor from higher market return, while in some cases the investors earns sound economic return due to higher competitive price than the offered price. Therefore, this study uses the closing IPO underpricing phenomenon (Zheng and Li, 2008) rather than IPO underpricing opening or first offer phenomenon (Yong and Isa, 2003). For the empirical analysis to investigate the economic analysis of IPO underpricing in stock market of Pakistan for the selected companies, the following model is analyzed

$$IPOU = \beta_0 + \beta_1(EP) + \beta_2 (AR) + \beta_3 (ER) + \beta_4 (EPS) + \beta_5 (PM) + \beta_6 (OS) + \mu \quad (2)$$

In the above equation the dependent variable is IPO Underpricing “IPOU”, whereas, the regressors are Price-Earnings Ratio “EP”, Assets Return “AR”, equity return “ER”, Earnings per Share “EPS”, Profit Margin “PM” and OS denotes Offer Size (that is total values of initial price offerings (IPO)

3.1. Descriptions and Justifications of Included Variables

The data for 98 enlisted companies is used for the period of 2013-2018 of 98 registered with the Pakistan stock exchange. These companies are from different business groups. The brief descriptions of variable are given in below Table 1.

3.2. Calculations of the Variables

3.2.1. IPO underpricing

The independent variable in this study to examine the economic effect of shares is IPO Underpricing. It is calculated as the difference between the closing/current offerings as compared to previous offer divided by previous offer prices, that is

$$IPOU = \frac{\text{Closing price (Pc)} - \text{Offer price (Op)}}{\text{Offer price (OP)}}$$

3.2.2. Earning-price (EP)

As the earning-price ratio is the difference between market price and price of common stock, so it is calculated as

$$EP = \frac{\text{Market Price of stock} \times (\text{available stock})}{\text{Net profit per common stock}}$$

3.2.3. Asset return (AR)

The asset return shows the economic gain from the efficiencies of the available stock assets of the company and is calculated as

$$AR = \frac{\text{Gains or loss excluding the rent and revenue tax}}{\text{Total assets in (average)}} \times 100 .$$

3.2.4. Earnings per share (EPS)

Value of earnings per share can be calculated by deducting dividend that is paid on preferred stocks out of the net income and dividing the resultant value with the number of outstanding shares and is measured as

$$EPS = \frac{\text{Profit from equity share}}{\text{No of Equity Shares}} \times 100 .$$

Table 1: Variables and phenomenon description

Variables	Phenomenon	Description
Initial public offering underpricing	IPO underpricing	The phenomenon when the company’s especially new firms offered some their shares at a low price to general public aiming to finance and support the capital
Earning-price ratio	EP	The ratio of shares at the market price to common stock earned by the company during a specific period of time
Earnings per share	EPS	The net economic profit earned by the investors from the shares or from selling and buying of the IPO shares
Asset return	AR	The gain from the issuance of bonds in the IPO underpricing to the general public
Return on equity	ROE	The return or gain of the company’s asset that is the ratio of company’s assets efficiency and actual value of the available assets
Profit margin	PM	Net profit rate is an indicator to test the liquidity of company after both of revenues and expenditures were considered and included (bank loan interest, operating cost and revenue tax).
Offer size	OS	The whole values of IPO that trade out to general public

3.2.5. Net profit margin (NPM)

Profit Margin rate is an indicator to test the liquidity of company after both of revenues and expenditures were considered and included (bank loan interest, operating cost and revenue tax). The formula of stock value calculation

$$\frac{\text{Net profit} \times \text{Net lost}}{\text{Total revenues}} \times 100.$$

4. ANALYSIS, FINDINGS RESULTS AND EXPLANATIONS

4.1. Descriptive Analysis of the Variables

The descriptive statistics analysis was done to find out the mean, maximum and minimum values of the firms and industries included in this study. The findings of descriptive analysis of all the included variables for enlisted 98 companies are given in below Table 2.

The results of descriptive statistics indicates that the initial returns of IPO Underpricing is positive as the mean, minimum and maximum values of IPO underpricing is positive, and the mean value is equals to 11.54% reveals an annual increase of approximately six percent. Further, the mean values of earnings-price Ratio, Return on Assets and Equity, Profit Margin, Earning Per Share and offer Size are also positive indicating significant effect on IPO returns in case of Pakistan Stock Exchange.

4.1.1. Correlation analysis

The correlation analysis was done to examine the correlation of the regressors variables with IPO underpricing that either these variables have any successive correlation with dependent variables that may be useful for in future decision for the investors. The findings of the correlation analysis given in Table 3 indicate that the correlation between some of the study variables exists or there are also variables where it doesn't exist. Further, there are some variables that are strongly positive correlated with each other, some have strong inversely correlated, some variables have weak positive and negative while some variables isn't showed any sort of correlation.

4.1.2. Variance inflation (VIF) of IPO underpricing

The variance influencing factor (VIF) analysis was done to examine the co-linearity of the variables with each other. The outcome of the test given in below Table 4 indicates that the variables data are independent of each other and didn't shows any sort or chances of co-linearity among the included variables.

5. REGRESSION ANALYSIS OF THE STUDY

To empirically analyze the economic analysis and return of various factors and IPO underpricing for the investors of the their investment under various influencing factor of enlisted companies for the period of 2013-18, the simple OLS method is regressed taking IPO underpricing as dependent variables. The findings of the regression analysis is given in below Table 5, indicating that the R² value, Probability value of F-statistics and Durbin-Watson

are quite satisfactory resultant the significance and goodness of fit of the model.

The analysis of the study indicates that earning-price ration remains insignificant determines that the earning-price ration hasn't any influencing factor in stock market of Pakistan for investor as its estimator value doesn't show any effective impact on IPO underpricing. The main cause of this insignificant finding behind earning-price ration may be of dramatic and speedy changes and fluctuation in price of shares that experience up and down trends especially in last decades. Further, the lack of information to the investor may also some time effect the earning-price ration.

The findings of the study reveals that return on assets have significant positive value indicates that it is the influencing factor of IPO underpricing in stock market of Pakistan. The investor can gain and earn a lump-sum economic profit as the return on assets rises. The outcomes of this study show that an investor may gain approximately 0.17% if there is of 1% increase in the value of assets returns. The result of this study is consistent with the study (Easley et al., 2002; and Vichakorn and Kennedy, 2005).

The results show that the estimator value of return on equity is positive and significant proving to an influencing factor of IPO underpricing for the investors in stock market of Pakistan and is

Table 2: Descriptive statistics results

Variables	Mean	Standard deviation	Minimum	Maximum
IPOU	11.54632	7.546713	2.845734	49.65748
EP	51.54614	57.25173	4.657265	396.6581
AR	10.54617	5.867253	1.342817	29.98352
RE	18.65734	9.748356	2.654734	45.54612
PM	34.05748	9.657281	1.281748	1913.650
EPS	0.546215	0.657413	0.174528	5.657341
OS	18.26152	9.657839	17.43618	23.87655

Table 3: Statistics tested correlation IPO underpricing

	IPO	EP	AR	ER	PM	EPS	OS
IPO	1						
EP	-0.107	1					
AR	0.875*	0.581**	1				
ER	0.758*	-0.195	0.915*	1			
PM	0.683**	0.392	0.617**	0.632**	1		
EPS	0.794*	0.398	0.251	0.292	0.138	1	
OS	-0.638**	-0.153	-0.269	-0.573**	-0.179	0.208	1

(*) shows strong and (**) shows weak correlation

Table 4: Statistics on variance inflation (VIF) of IPO underpricing

Variables	Fluctuations	VIF Values
P	0.017353	1.174513
PB	0.106571	2.658341
RA	0.061038	2.856341
RE	0.137163	1.867543
NPM	1.107562	3.231865
P1	0.116309	2.867452
EPS	1.093517	3.657298
SIZE	1.083514	3.197562
C	131.0078	NA

Table 5: Regression results of IPO underpricing (all the other are in log form)

Variables	Co-efficient	Std. error	t-Statistic	Prob. value
EP	0.113513	0.073599	2.542313	0.3761
AR	0.173715	0.046673	3.721948	0.0000
ER	0.094712	0.034430	2.750826	0.0153
PM	0.115735	0.035810	3.231874	0.0006
EPS	0.136308	0.034612	3.938246	0.0000
OS	-0.237519	0.065021	-3.652917	0.0000
C	19.54234	14.55865	1.342318	0.4628
R-squared	0.795614	Durbin-Watson stat	1.883415	
Adjusted R-squared	0.776514	Prob. (F-statistic)	0.000000	

consistent with the study of (Li et al., 2005; and Acedo and Ruiz-Cabestre, 2014). The positive coefficient value of ER confirms the affirmative effect on IPO underpricing indicating that 1% increase in the value of share on equity return brings an increase of 0.09% of investor economic return.

The net profit margin is the most important factor that keenly observed by the investor and also by the firms. An increase in net profit margin of the companies gains and raises the trust of investor on the shares of companies and thus the opportunity of investment increase as it minimizes the risk of investor. The significant findings of profit margin indicates that it is the important factor of IPO underpricing in stock market of Pakistan and thus will benefits both the investors and companies.

The Earnings per Share has also significant co-efficient value indicating that it has optimistic effect on IPO underpricing. (Bhullar and Bhatnagar, 2014; and Boudriga et al., 2009) has also found the significant effect of earning per share in their studies. Further, offer size is also an important factor of IPO underpricing. The results integrated in Table 5 indicates that offer size significantly affect the IPO underpricing and thus accepting null hypothesis as its probability of estimator is significant at 1% but having negative sign of co-efficient value. If there is 1% change occurs in the variable offer size it will change the IPO at 0.23% in the apposite direction.

6. CONCLUSION OF THE STUDY

The stock market is considered one of the important exchange markets. The stability of the stock exchange rate effect the trade that leads to consistent effect on the investor, companies and traders. However, the stability of the stock markets depends on various factors that include law and order situation, political and economic stability, trust of investors, risk and uncertainty etc. from last couple of decades the high fluctuation in stock markets of developing countries and especially of Pakistan has experienced. The political instability, changing international environment, economic uncertainty and terrorism affect the stock market of Pakistan on many occasions severely. Therefore, this study attempted to examine the various factor of IPO underpricing and their economic return to investor.

The findings of the study reveal that the study variables shows mixed correlation effect as some variables have strong positive

correlation with IPO underpricing. However, some of the variables have weak and negative correlation. The regression analysis of the study found that return on assets, equities, earning per share and profit margin have satisfactory effect on IPO underpricing in stock market of Pakistan for studies companies and thus lays the constructive role. However, there is still exists the gap of improvement that is possible by providing good environment for the domestic and international investor back by stable stock exchange, favorable economic and political condition and security their investments.

REFERENCES

- Acedo, T.M., Ruiz-Cabestre, A.O. (2014), The people/performance balance in IPO firms: The effect of the chief executive officer's financial orientation. *Entrepreneurship Theory and Practice*, 25(1), 93-106.
- Aharony, J., Lin, C.J., Loeb, M.P. (2012), Initial public offerings, accounting choices, and earnings management. *Contemporary Accounting Research*, 10, 61-81.
- Alok, R., Saboo, A., Chakravarty, P., Rajdeep, G. (2016), Organizational debut on the public stage: Marketing myopia and initial public offerings. *Marketing Science*, 49-79, 656-675.
- Amihud, Y. (2002), Illiquidity and stock returns: Cross-section and time series effects. *Journal of Financial Markets*, 5, 31-56.
- Balvers, R.J., Affleck-Graves, J., Miller, R.E., Scanlon, K. (2015), The underpricing of initial public offerings: A theoretical and empirical reconsideration of the adverse selection hypothesis. *Review of Quantitative Finance and Accounting*, 3, 221-239.
- Bell, R., Moore, G., Curt, B., Filatotchey, I. (2012), Strategic and institutional effects on foreign IPO performance: Examining the impact of country of origin, corporate governance, and host country effects. *Journal of Business Venturing*, 27(2), 197-216.
- Bhullar, P., Bhatnagar, D. (2014), Analysis of factors affecting short term performance of IPOs in India. *Pacific Business Review International*, 7(5), 56-72.
- Binti, N., Bakara, A., Uzakib, K. (2013), An empirical study of initial public offerings. *International Journal of Economics Business and Finance*, 5(2), 23-33.
- Boudriga, A., Slama, S.B., Boulila, N. (2009), What determines IPO underpricing? Evidence from a frontier market. *Journal of Insurance and Financial Management*, 2(1), 13-22.
- Braun, M., Larrain, B. (2005), Do IPOs affect the prices of other stocks? Evidence from emerging markets. *Journal of Accounting and Economics*, 32, 97-180.
- Busaba, D., Li, C., Yang, G. (2009), Market volatility and the timing of IPO filings. *Journal of Financial Regulation and Compliance*, 13, 146-166.

- Certo, T., Daily, M., Catherin, C., Dalton, D., Roengpitya, R. (2003), IPO underpricing: A meta-analysis and research synthesis. *Entrepreneurship Theory and Practice*, 27(3), 271-295.
- Demir, I., Muthuswamy, J., Walter, T. (2004), Momentum returns in Australia equities: The influences of size, risk, liquidity and return computation. *Pacific-Basin Finance Journal*, 12, 143-158.
- Easley, D., Hvidkjaer, S., O'Hara, M. (2002), Is information risk a determinant of asset returns? *The Journal of Finance*, 57, 2185-2221.
- Indriani, S., Marlia, S. (2014), The evidence of IPO underpricing in Indonesia 2009-2013. *Review of Integrative Business and Economics Research*, 4, 229-316.
- Kukies, J. (2015), The effects of introducing a new stock exchange on the IPO process. *International Journal of Economics, Business and Finance*, 6(1), 31-39.
- Leila, B., Farshid, A. (2014), Study of factors affecting the initial public offering (IPO) price of the shares on the Tehran stock exchange. *Research in World Economy*, 5(2), 14-20.
- Li, M., Zheng, S.X., Melancon, M.V. (2005), Underpricing, share retention, and the IPO aftermarket liquidity. *International Journal of Managerial Finance*, 1(2), 76-94.
- Pande, A., Vaidyanathan, R. (2015), A study of initial public offerings on the national stock exchange of India. *Journal of Finance*, 44, 421-449.
- Ruiz-Cabestre, J.F., Acedo-Ramirez, A.M. (2016), IPO characteristics and underpricing in the alternative investment market. *Applied Economics Letters*, 24(7), 1-5.
- Vichakorn, C., Kennedy, D.G. (2005), The Factors Affecting on IPO Return in Thai Stock Market. *Proceedings of the International Conference on Computer and Industrial Management*. Bangkok, Thailand: ICIM. 2005. p19.1-19.6.
- Yong, O., Isa, Z. (2003), Initial performance of new issues of shares in Malaysia. *Applied Economics*, 35, 919-930.
- Zhan, S. (2013), Is the abnormal return following equity issues anomalous? *Journal of Financial Economics*, 56, 209-249.
- Zhang, J., Yu, H. (2016), Venture capitalists' experience and foreign IPOs: Evidence from China. *Entrepreneurship Theory and Practice*, 41(5), 269-290.
- Zheng, S.X., Li, M. (2008), Underpricing, ownership dispersion, and aftermarket liquidity of IPO stocks. *Journal of Empirical Finance*, 15(3), 436-454.