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The Impact of Going Public Decision on Company Performance: Evidence from Pakistan

Abstract

This study inspected the association of company performance with the choice of IPO of the firm's registered on the Pakistan Stock Exchange. In particular, two dimensions of performance, Return on Sales and Return on Asset as operating and Tobbin Q as Market performance as dependent variables, Bank debts, Capital Expenditure, Ownership Concentration, Sales Growth and Firm Size as independent variables along with the age of the firm as control variable have been used. Sample of 40 Pakistani IPOstaken for the period of 2005-2016. OLS inferences confirmed that the performance of both pre-IPO and Post-IPO show an influential association with the independent variables. This study provided a path to smaller firms that are in the process to go public. Whereas glimpses for the investors also provided who want to add profitable securities to their portfolio bucket.

Key Words: SECP, PSX, IPO, CDC, Operating Performance, Market Performance

Introduction

Firms working in a market have many options for financing. According to the Pecking order theory proposed by (Donaldson 1961), afterwards modified by (Myers & Majluf, 1984), firms have three option of financing, e.g. Retained Earnings, Loans from Bank/DFIs or any other debt instrument and issuing of stocks. These methods of financing are their own pros and con, but the core and most commonly used way to finance the firm's investments is issuing shares with the help of going public decision. Initial Public Offering decision is the most complex and tough method with distinct markets for dispersed stocks and regulatory blocks, due to the fact that it requires numerous preparations in the shape of red herring document termed as a prospectus, choosing bank, plan of underwriting and preparation for effective and operative day meeting. IPO refers to going public decision from private ownership (Javid & Malik, 2016), the appropriate way to sell shares to passive and small investors. Mello and Parsons (1998) stated that when a firm goes, the large public amount of new and old stocks are traded out in the market, which transmits possession to public investors from private investors as ownership.

SF Ho, Hamzah, and Shariza (2011) described some benefits of the decision of IPO. Initially and the most important firms get strong confidence of financiers due to the fact that firms, before going public, face strict regulations and processes of security and exchange commission. This provides clarity in the mind of investors who have any sort of suspicion on the capability and credibility of the firm. Secondly, stocks price determination resulted from the effective valuation system. All the above is possible if the firms convey and list complete and concrete info of the company's on-going projects and day to day operation as well as future plans in the prospectus with the help of geed publicity and marketing efforts. Companies who want to go public should maximize the publicity and marketing efforts, funds rising and in the last part gain their valued stockholders who can liquidate their capital.

Previous studies conducted on the same area of interest were mostly in favour of aftermarket long-run performance of companies in place of examining after IPO operating performance (Loughran & Ritter, 1997). The account-based measurement is a better indicator to judge firm performance than stock-based performance on the basis of developing countries (C. Wang, 2005). The current study comprises of two parts first part is concerned with a stock market performance which is controlled

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and inspected with the help of Tobbin Q, and the second one is connected with operating performance using ROA and ROS. Both of them combine clear glimpses of company performance because of their strong connection with each other.

IPOs Summary of Pakistan

[Javid and Malik \(2016\)](#) conducted their research on Pakistani IPOs capital structure and performance using a sample over the period of 2000-2015. They explained that IPOs had been started in 1949 with the listing of Karachi Electric Supply Corporation as the first company without issuing a prospectus. Later on, in 1953, M/S Hussian Industries issued a prospectus for the first time to motivate the general public. IPO has been affected till 1990 due to political instability and nationalization of firm's process. After 1990 IPOs activities started gradually by private firms for the purpose of expanding business and fundraising. The government also intervenes in the progress of IPOs by privatizing public sector units to grow globally as well as domestic investments. Privatization process after 2000 good extended momentum with a low level of operating performance and transparency till 2017. In the first stage, the fixed price offer method was used in the Pakistan market. Whereas this study suggested focusing on more effective and in favour of investor type methods, at the end book building method developed in 2008.

Aim of the Study

The key purpose of the paper is to detect the influence of the elements like Growth in Sales, Ownership Structure, Bank Debts, Firm Size, CAPEX and control variable Age have been judged with operating performance proxies, and Tobbin Q. Emerging economies markets are the most important place for modern days researchers, Pakistan is also included as developing economy on the bases of that this study purely based on Pakistan's Market. [Braun and Larrain \(2005\)](#) confirmed the impact of IPOs on emerging economies in their study. They explained the disturbance factor of the financial market depends on IPOs because of low stability and highly volatile.

Research Questions

- RQ:** What is the influence of initial public offering before and after on the company's operating performance?
- RQ:** What is the effect of the factors on the market performance of the firms after initial public offering?

Research Objectives

The overall objective of the study undertaken is to explore and measure the influence of IPO Decision on performance registered on PSX. The factors considered to gauge the operating performance are ROS and ROA, and market performance as Tobbin Q. Age, Size of Firm, and Sales Growth, CAPEX, Ownership Structure and Bank Debts are used as performance indicators (Independent variables) before and after IPO. This study also gives a preview for an investor who willing to invest in profitable securities, and on the other side, private companies will also be able to convert their capital structure from private to a public limited company.

Literature Review

Fundraising with the help of issuing shares to the general public is the most important decision of companies. Alibaba is one of the major IPO done recently in terms of proceeds which is almost 25 Billion USD. The choice of issuing shares for the purpose of funds rising as per the Pecking Order Theory is not a good choice ([Myers & Majluf, 1984](#)). On the other hand, the tool for issuing shares is quite popular among companies. Prior studies conducted in the same area have explored different properties in relation to the IPO movement. IPO and its influence on firms performance have been investigated by the researcher with the help of initial return, timing of timing, Underpricing, return in long-run, insider vs institutional ownership, firms growth and size, selection of private or public financing and elements connected with post IPO operating performance.

Market performance has associated the term with available info about market and IPO decision, is a procedure of offering shares of companies to the general public creating a relationship between investors and firms. That's why accurate information is very important for companies operating and market performance. [Miller \(1977\)](#) stated that accurate information and IPO earning forecast links divergence of opinion hypothesis with performance.

[Ahmad and Mei \(2005\)](#) studied the connection amongst post and pre-IPO, operating performance and elements, respectively, of on hundred sixty-two IPOs different industries and the inferences provided that companies age, multi-nationality and ownership decline was insignificant in defining Post-IPO performance. ATO and ROA were used as an instrument of a firm's performance and found the size of the firm has an indirect association with the operating performance of IPO. Furthermore, while using ROA negative association found.

[Alanazi, Liu, and Forster \(2011\)](#) investigated 21 Saudi Arabian private firms and IPO firms. The financial performance of Saudi State firms has been improved as well as joint-stock firms working privately in post-IPO testing as compare to pre-IPO. While firms owned by families and limited liability firm's performance has been declined after IPO in comparison before IPO using ROA and ROS as a measurement tool.

[Kim and Weisbach \(2005\)](#) examined that capital demand increases of firms with the connection of some factors; then they start to undertake IPO for the reason that primary security sales are correlated with these factors like growth of investments, debts payment and also cash increase along with SPO for capital raising.

[Gleason, Jain, and Rosenthal \(2006\)](#) recommended firms IPO decision use substitute procedures and techniques to gain less profit than the firms done IPO of smaller size in the similar three digits SIC code; however, they don't show any significant advance distress. Continuing the operation after 2 years, these firms increase their debt level and faces a decrease in efficiency and liquidity.

[Ibbotson and Ritter \(1995\)](#) stated that companies in Pre-IPO stage raise capital from other sources also. [SF Ho et al. \(2011\)](#) research on the Malaysian market from 2000 to 2004 used profitability, size of company, ownership, and age as pre-IPO factors and ROA, ROS and ATO as performance indicator post-IPO. The result displayed that profitability and size of firms are Pre-IPO assessment key factors. This provided assistance to the investors for investment in new shares.

[Mello and Parsons \(1998\)](#) explained that the value of the company depends on the ownership structure and its performance. They also explained the different tactics for the trading of shares fare in the establishment of valuable ownership and profit maximization. [Loughran and Ritter \(1995\)](#) proposed more the proofs of the bad performance of SEO and IPO companies in long terminology in comparison with those companies that not issue shares.

[Ritter \(1991\)](#) submitted that underperformance in the long-run might be due to the timing of equity issuance. According to him, the alignment of time with the phases of highest assessments that markets allocate to the companies. The high estimate might be due to the optimistic approaches of market-related to general IPO or in particular or both. Therefore, in this paper, ROA, ROS and several more ratios are used for the assessment of the performance of firms going public. Most of the research scholars used ratios analysis as an instrument for gauging the financial position of the businesses in the market ([Agyemang & Agalega, 2014](#)).

[Borghesi and Pencek \(2013\)](#) cited in their researches financial ratios was used by Altman in 1968 named as Altman Z. Choi, Lee, and Megginson (2010) stated that Eugene Fama and French proposed Fama French model 1993 also used financial ratios form the evaluation of abnormal returns. Clarification was provided then that ROE is not good in finding GDP growth but good to determine the price ([Z. Wang, 2013](#)). ROA was also included in FFM later on, and the results then become better than before ([Chen & Novy-Marx, 2011](#)). [Cheng and Renucci \(2013\)](#) also study FFM with regression investigated long-run performance.

Ratios are the most influential tools as discussed used for financial performance, e.g. ROA, ROS and ROE in which ROA and ROE are taken from the proposed model of Donaldson Brown Du-Pont analysis in 1914 ([Ahsan, 2012](#)). Investors, before investing in any company, use Du-Pont Analysis.

Ak, Dechow, Sun, and Wang (2013) suggested that ROE & ROA are not providing the best fruitful results of long-run performance; that's why some more efforts to be made and find alternative ways to influence these ratios on long-run performance. Shareholders Theory also proposed that

shareholders should be prioritized in every situation. This theory is proposed by Friedman, who has a waste experience in finance ([Danielson, Heck, & Shaffer, 2008](#)).

Methodology

OLS has been utilized for judging the impact of the determinants of performance of the companies listed on PSX from 2005 to 2016. All the assumption of OLS has been satisfied ([Gujarati, 2009](#)).

Time Period and Variables

Time frame and variables are the most important factors for any research study. Every researcher individually may have a select time period and various standards according to a situation such as ([Jain & Kini, 1994](#)) uses IPO one year, with five years preceding after IPO.C. Wang (2005) examined in his study in variation by comparing one year Pre-IPO with one year after IPO and also (-3 and + 3) also. In the current study, the same procedure has been followed (+3). Variables used are appended:

- Age of Firms: The age of the firms refers to the total years from the date of incorporation till IPO date.
- Bank Debt: Borrowing from Banks/DFIs by the firms either short term or long term the percentage of Assets.
- Capital Expenditure: In short CAPEX, used for representing Property, Plant and Equipment percentage difference from the prior year.
- Size of Firms: The size of the firms are the Net Assets of the firms in the financial position statement.
- Ownership Structure: Equity of firms contributed by the owner's(shareholders) in combination with total assets.
- Sales Growth: Sales of the firm in comparison with the past year.
- Return on Assets: ROA is the combination of net income to total assets.
- Return on Sales: ROS represented by net income to total assets.
- Tobbin Q: Tobbin ratio is composed of the market value of outstanding shares, debts and total assets.

Model One: Operating Performance

Operating performance = $\beta_0 + \beta_1age + \beta_2 Bank\ loans + \beta_3 Size + \beta_4 Ownership + \beta_5 Growth + \beta_6 CAPEX + e$

Model Two: Market Performance

Market Performance = $\beta_0 + \beta_1age + \beta_2 Bank\ loans + \beta_3 Size + \beta_4 Ownership + \beta_5 Growth + \beta_6 CAPEX + e$

Descriptive Statistics

In table 1.1, the results of descriptive information of pre-IPO and post-IPO have been given. In the sample of forty firms, the mean value stands for ROA and ROS 5.89 and 5.52 in pre-IPO, and Post-IPO 3.39 and 4.43, Bank Loans 78.38 in post-IPO and 0.53 in pre-IPO stage, the Net value of property plant and equipment's refers to CAPEX stood at 6.68 for Pre IPO and 7.67 for post IPO. ([Pagano, Panetta, and Zingales \(1998\)](#)) stated that in explaining the elements and characteristics of listed companies recently, keep in your mind the not all the company want to go public have the capability of all properties in possession required for listing on the stock exchange, In Pakistani market also. Therefore, the appropriate population should be considered when selecting a sample of companies gone through the decision of IPO.

Table 1. Pre-IPO and Post-IPO Descriptive Statistics

Variable	Mean Pre-IPO	Mean Post-IPO	SD Pre-IPO	SD Post-IPO	Skew Pre-IPO	Skew Post-IPO
ROS	5.520	4.436	12.377	-0.288	-0.288	-0.288

ROA	5.898	3.391	8.040	1.897	1.897	1.897
SIZE	6.671	7.776	2.790	-3.492	-3.492	-3.492
BL	0.538	78.385	0.629	-0.064	-0.064	-0.064
CAPX	6.689	7.676	2.260	-0.611	-0.611	-0.611
GS	73.154	11.715	126.85	2.767	2.767	2.767
OWN	0.344	50.112	0.197	0.613	0.613	0.613

Collinearity

One of the problems always exists with the regression equation term as multicollinearity. The strong connection between variables undertaken for the study refers to the problem of multicollinearity. The coefficients of the model become ambiguous every time the factors found a multicollinearity problem, and very hard to allocate variations in dependent factors or explanatory variables. The benchmark proposed by the researcher for correlation is 70% (FAROOQ, AKBAR, & ALIM, 2018) and 50.0% (Gujarati, 2009). For the investigation of multicollinearity between the variables, the Variance inflation factor and correlation matrix is used. The appended tables show the results of the correlation matrix among the variables of the study.

Table 2. Pearson Correlations

	OWNB	GSB	CAPXB	BLB	SIZEB	ROAB	ROSB
ROSB	0.046	-0.332	0.146	0.091	0.400	0.632	1.000
ROAB	0.374	-0.266	-0.009	-0.021	0.226	1.000	
SIZEB	0.236	-0.068	0.393	0.423	1.000		
BLB	-0.034	0.067	0.406	1.000			
CAPXB	-0.214	-0.261	1.000				
GSB	0.152	1.000					
OWNB	1.000						

Table 3. Pearson Correlations

	Tobbin	OWNA	GSA	CAPXA	BLA	SIZEA	ROAA	ROSA
ROSA	0.163	0.496	0.326	-0.136	-0.202	0.105	0.495	1.000
ROAA	-0.034	0.175	0.264	-0.410	-0.279	0.418	1.000	
SIZEA	0.088	-0.085	-0.174	0.414	-0.097	1.000		
BLA	0.074	-0.496	-0.205	0.264	1.000			
CAPXA	0.333	-0.251	-0.199	1.000				
GSA	0.254	-0.081	1.000					
OWNA	0.067	1.000						
T. Q	1.000							

The test is used for the detection of significant variables. Whereas the coefficient of correlation is used to identify the kind as well as the strength of association amongst the variables of the study. The appended inferences provided that there no variables which is above the benchmark set by the researcher that is 70.0% (FAROOQ et al., 2018) and if the benchmark of 50.0% by (Gujarati 2009) used, then only one variable show the problem of multicollinearity. In the Pre-IPO correlation matrix, ROA and ROS have more than 50% value existing the problem of multicollinearity. This has not caused any problem to the model due to the fact that ROA and ROS are used separately as dependent variables as proxies for operating performance. On the other hand, the V.I.F is also used for checking the problem of multicollinearity, and the outcome of the V.I.F test clarified that all the variables are within the set value of ten not possess multicollinearity problem. The results in tables 1.3 provided that for both Pre and Post IPO, the V.I.F value is less than the benchmark value; hence the data is suitable to use in the analysis.

Table 4. Pre-IPO and Post-IPO V.I.F

Variables	Before IPO	After IPO
Firm Size	1.511	1.334
Own. Structure	1.220	1.469
Bank Debts	1.536	1.384
Bank Loans	1.389	1.596
Gr.Sales	1.130	1.174

Heteroscedasticity's

Heteroscedasticity refers to the non-constant variance, and the regression model considered to be a constant variance always refers to homoscedasticity. For the clarification of the same, two tests have been used to check the problem of heteroscedasticity in the residual term of the model, e.g. Breusch-Pagan and White decomposing test. The outcomes from tests proposed P-value above 0.050, which clarified that no heteroscedasticity problem has been existing in the model (both pre-IPO and Post-IPO), and the data is homoscedastic can be used for analysis.

Linearity

This assumption states that the linearity must be found in every parameter and not be cubed, multiplied, divided and squared in the proposed model. For fulfilment of the assumption, all the data, which is in the form of days, years, million, under roots and squared, are linearized through natural logarithm (Gujarati, 2009). In simple linearity refers to the direct relationship of the independent and dependent variable (Lewis-Beck, 1995). In the current study, the linearity assumption fulfilled.

Normality

Normality is used to check whether the figures used for analysis in the model distributed normally or not. Skewness value of Pre-IPO analysis level for ROS and ROA stood at 0.81 and 1.37 respectively, which is between +2; hence the assumption fulfilled, and the data is normal. On the other hand, Jarque Berra is also used to check the normality of the model. Outcomes of the Jarque Berra test measure the difference between kurtosis and skewness; for the current study under review Jarque Berra Pre-IPOs significant, guaranteed normality.

In Post-IPO analysis, skewness resulted in 0.47 for ROS, -0.39 for ROA and for TOBBIN Q -0.08 lies between the set range of +2 by the researchers. Along with skewness, Jarque Berra also significant, which confirms the normality assumption is fulfilled, and the data is valid for analysis.

Regression Analysis Operating Performance

Table 5. Analysis of Regression

IND.V	ROAB		ROSB	
	Coefficient	p-value	Coefficient	p-value
SIZEB	0.4358	0.4091	1.9575	0.0200**
BLB	-0.3084	0.8901	-0.6331	0.8537
CAPXB	-0.2318	0.7232	-0.5795	0.5654
GSB	-0.0208	0.0434**	-0.0315	0.0467**
OWNB	15.2413	0.0278**	-2.0279	0.8435
	ROAA		ROSA	
	Coefficient	p-value	Coefficient	p-value
SIZEA	6.2937	0.0001***	4.5748	0.0365**
BLA	0.0124	0.3987	0.0620	0.0652*
CAPXA	-3.0605	0.0001***	-0.5698	0.6413
GSA	0.1542	0.0083***	0.4515	0.0008***
OWNA	0.0884	0.2126	0.7422	0.0001***

***1%, **5% and *10% significance level

Table 6

Model fitness	ROAB	ROSB
R-squared	0.2629	0.2642
F (5, 34)	2.4258	2.4419
Adj R ²	0.1545	0.1560
F	0.0552	0.0539

Table 7

Model fitness	ROAA	ROSA
R-squared	0.6671	0.4967
F(5, 34)	13.6286	6.7119
Adj R ²	0.6181	0.4227
F	2.52e-07	0.0001

The result of operating performance listed in table 5, showing that the Pre-IPO size of the firm with ROA is insignificant and positive, and with ROS is the relationship is a significant positive. Proving that with the increase in Size of Firms, the ROS increased and having no effect on ROA. On the other hand, in comparison with Pre-IPO in connection with Post-IPO Size of the Firm has been significant and positive with both of the proxies of operating performance. This proves in both of the scenarios that the size of the firm either increase or decrease can affect the operating performance in the same direction.

Growth in Sales before going public has been signed with both of the operating performance proxies with a negative relationship and after going public also significant but showing the positive relationship. On the basis of results, sales showing a direct relationship after IPO compare to before the IPO, which is inverse.

Ownership Structure in Pre-IPO analysis stands positive and significant with ROA but insignificant with ROS, whereas in the case of Post-IPO, association with ROA is not significant, and with ROS significant and positive. This may be a deep watch on sales of the firm by the owners after IPO in the early stages. These results are supported by the results of (Valarmathi, Jossy, & Babu, 2018) in post-IPO analysis and not in line when compared to pre-IPO analysis.

Property Plant and Equipment's refers to CAPEX of the firms has been insignificant before initial public offering decision with both of the proxies, also after IPO with ROS, and substantial and negative with other proxy ROA after going public decision. This proved the nil influence on the operating performance of capital expenditure; still, only one proxy after IPO is significant, but overall no impact found.

Bank Loans has been insignificant with operating performance ratios in Pre-IPO analysis, while significant and positive with ROS only after IPO and insignificant with ROA.

The variation found in dependent variables arose by independent variables refers to adj-R² resulted 0.1545 for ROA and 0.1560 for ROS before IPO undertaken by the selected firms in the sample. Whereas in the case of Post-IPO operating performance model Ahj-R Square value resulted in 0.42 for ROS and 0.61 for ROA, which is far well from the analysis of IPO model, showing the strongest relationship and impact of IPO on the operating performance of the companies.

Regression Analysis Market Performance

Table 8. Analysis of Regression

IND.V	Tobbin Q	
	Coefficient	p-value
SIZEA	0.0078	0.8652
BLA	0.0007	0.2737
CAPXA	0.0669	0.0167**
GSA	0.0070	0.0129**
OWNA	0.0060	0.0847 *

***1%, **5% and *10% significance leve

Table 9

Model fitness	T. Q
R-squared	0.2866
F(5, 34)	2.7319
Adj R ²	0.1817
F	0.0352

Dependent variables in separate analysis for operating performance in Pre-IPO and Post-IPO used are ROA and ROS, but after the transmission of companies from Pre-IPO stage to Post-IPO, the study of Market performance is very important as the market analysis provides the company performance in a very clear manner if study along with operating performance. In this paper, operating performance has been studied and compared for the companies gone through public decision, but on the other hand, after going public, Tobbin Q ratio has also been taken for study to judge the influence of the independent variables on market performance also. The outcome of the regression analysis proved that Post-IPO, the market performance of the company's significance level of the variables, has been positive. This also confirms the importance of these variables for the companies who want to go public and for that investor who is going to spend in profitable businesses. [C. Wang \(2005\)](#) confirmed the same importance of account-based performance rather than market-based performance, as he confirms that account-based performance is more consistent compare to market performance. So the Tobbin Q depends on the better performance of companies in terms of account based in the market.

Summary and Evidence

[Ahmad and Mei \(2005\)](#) investigated the linkage of operating performance with 162 IPO firms taken from several industries, and outcomes proved that companies age, multi-nationality and ownership reduction was not substantial in comparison with post IPO performance. They utilized Asset Turnover Ratio and Return on Asset as performance measurement. Their results also clarified that ROA showed a negative association between pre and post IPO performance. [Clementi \(2002\)](#) detected in his study undertaken on firm's dynamics, creating a stochastic model for the insertion of IPO decision, used CAPES, Profitability, and Sales, the forecasted results related to Post-IPO has been smooth and steady with the current empirical proof and on the other hand, explained that the operating performance increase in the first year after IPO and then goes down. The decline forecasted after IPO is due to the increase in CAPEX and Sales. Furthermore, in the case of company growth, the results also consistent, but in relation to size and age growth of the company's decreases. [\(Dunne, Roberts, & Samuelson, 1989; Evans, 1987; Hall, 1986\)](#) suggested that big firms, as compared to smaller firms, grow at a slower rate. [Ahmad and Abdul \(2017\)](#) detected a positive and substantial link of Tobbin Q with the performance of market, profitability, growth, firm soundness but positive and insignificant with size, efficiency and tangibility of firms. [Cho \(1998\)](#) also used the same ratio as the structure of ownership. On the other hand, for checking the performance of firms, Tobbin Q was used for the estimation of assessment of industries and shares influence [\(Wernerfelt & Montgomery, 1988\)](#). Tobbin Q was also used with profitability by [\(Salinger 1984\)](#).

The overall results of the current study proposed that in terms of operating performance comparing both Pre-IPO and Post-IPO, operating performance become better in the case of Post-IPO analysis. Whereas, in relations to Tobbin Q (Market Performance), the inference of the model confirmed that growth or decline in the financial performance of the firms Post-IPO scenario affect the market performance.

References

- Agyemang, B., & Agalega, E. (2014). Altman's Z-Score Performance Assessment of Corporate Organizations in Ghana. *Africa Development and Resource Research Institute Journal*, 6(2), 14-29.
- Ahmad, Z., & Mei, L. S. (2005). Operating performance of initial public offerings in Malaysia. *Capital Markets Review*, 13(1&2), 21-32.
- Ahsan, A. M. (2012). Can ROE be used to predict portfolio performance? *Economics, Management, and Financial Markets*, 7(2), 132-148.
- Ak, B. K., Dechow, P. M., Sun, Y., & Wang, A. Y. (2013). The use of financial ratio models to help investors predict and interpret significant corporate events. *Australian journal of management*, 38(3), 553-598.
- Alanazi, A., Liu, B., & Forster, J. (2011). Saudi Arabian IPOs and privatized firms profitability. *Review of Middle East Economics and Finance*, 7(1), 67-90.
- Borghesi, R., & Pencek, T. (2013). Predicting first-year returns of health care IPOs. *Borghesi, Richard and Tom Pencek*, 877-884.
- Braun, M., & Larrain, B. (2005). Finance and the business cycle: international, inter-industry evidence. *The Journal of Finance*, 60(3), 1097-1128.
- Chen, L., & Novy-Marx, R. (2011). An alternative three-factor model. Available at SSRN 1418117.
- Cheng, T., & Renucci, A. (2013). Long-run performance of IPO stocks: Is the end of the lockup period crucial. In.
- Cho, M. H. (1998). Ownership structure, investment, and the corporate value: an empirical analysis. *Journal of financial economics*, 47(1), 103-121.
- Choi, S. D., Lee, I., & Megginson, W. (2010). Do privatization ipos outperform in the long run? *Financial Management*, 39(1), 153-185.
- Clementi, G. L. (2002). IPOs and the growth of firms.
- Danielson, M. G., Heck, J. L., & Shaffer, D. (2008). Shareholder theory—how opponents and proponents both get it wrong. *Journal of Applied Finance (Formerly Financial Practice and Education)*, 18(2).
- Donaldson, G. (1961). Corporate Debt Capacity, Graduate School of Business Administration. In: Harvard University Press.
- Dunne, T., Roberts, M. J., & Samuelson, L. (1989). The growth and failure of US manufacturing plants. *The Quarterly Journal of Economics*, 104(4), 671-698.
- Evans, D. S. (1987). The relationship between firm growth, size, and age: Estimates for 100 manufacturing industries. *The journal of industrial economics*, 567-581.
- Farooq, K., AKBAR, S., & ALIM, K. (2018). Impact of Firm Characteristics on IPO's Short Run Performance: Evidence from Pakistan.
- Gleason, K. C., Jain, R., & Rosenthal, L. (2006). Alternatives for going public: Evidence from reverse takeovers, self-underwritten IPOs, and traditional IPOs.
- Gujarati, D. N. (2009). Basic econometrics: Tata McGraw-Hill Education.
- Hall, B. H. (1986). The relationship between firm size and firm growth in the US manufacturing sector. In: National Bureau of Economic Research Cambridge, Mass., USA.
- Ibbotson, R. G., & Ritter, J. R. (1995). Initial public offerings. *Handbooks in operations research and management science*, 9, 993-1016.
- Jain, B. A., & Kini, O. (1994). The post-issue operating performance of IPO firms. *The Journal of Finance*, 49(5), 1699-1726.
- Javid, A. Y., & Malik, H. (2016). Performance and capital structure of IPOs in Pakistan from 2000 to 2015. *Financial Innovation*, 2(1), 14.
- Kim, W., & Weisbach, M. (2005). Do firms go public to raise capital? Lewis-Beck, M. (1995). *Data analysis: An introduction*: Sage.
- Loughran, T., & Ritter, J. R. (1995). The new issues puzzle. *The Journal of Finance*, 50(1), 23-51.
- Loughran, T., & Ritter, J. R. (1997). The operating performance of firms conducting seasoned equity offerings. *The Journal of Finance*, 52(5), 1823-1850.

- Mello, A. S., & Parsons, J. E. (1998). Going public and the ownership structure of the firm. *Journal of financial economics*, 49(1), 79-109.
- Miller, E. M. (1977). Risk, uncertainty, and divergence of opinion. *The Journal of Finance*, 32(4), 1151-1168.
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of financial economics*, 13(2), 187-221.
- Pagano, M., Panetta, F., & Zingales, L. (1998). Why do companies go public? An empirical analysis. *The Journal of Finance*, 53(1), 27-64.
- Ritter, J. R. (1991). The long-run performance of initial public offerings. *The Journal of Finance*, 46(1), 3-27.
- Salinger, M. A. (1984). Tobin's q, unionization, and the concentration-profits relationship. *the Rand journal of Economics*, 15(2), 159-170.
- SF Ho, C., Hamzah, R. A., & Shariza, R. A. (2011). Pre-ipo characteristics and post-ipo operating performance in Malaysia. *Business Management Quarterly Review*, 2(1), 54-64.
- Valarmathi, S., Jossy, C., & Babu, A. (2018). Pre IPO and Post Ipo Operating Performance Evaluation on Indian Select Companies. *Asian Journal of Management*, 9(1), 127-132.
- Wang, C. (2005). Ownership and operating performance of Chinese IPOs. *Journal of Banking & Finance*, 29(7), 1835-1856.
- Wang, Z. (2013). Do the Investment and Return-on-Equity Factors Proxy for Economic Risks? *Financial Management*, 42(1), 183-209.
- Wernerfelt, B., & Montgomery, C. A. (1988). Tobin's q and the importance of focus in firm performance. *The American Economic Review*, 246-250.