Does the Pricing Mechanism Affect the IPO Flipping Activity in Pakistan?

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Abstract

This paper explores the relationship between price mechanism and flipping activity of initial public offerings (IPOs) in Pakistan's emerging economy. This study uses a cross-sectional data set of 95 firms listed on Pakistan Stock Exchange from 2000 to 2019. This study employs the ordinary least square and quantile regression techniques to capture the relationship between price mechanism and flipping activity. The results show that book-built IPOs flip substantially less than fixed-price IPOs. This is consistent with the signaling theory assertion that roadshows are arranged by underwriters to capture investors' demand and set the offer prices of IPOs. If investors learn the fair values of quality IPOs, then the offer prices will be close to the intrinsic values, thus reducing flipping. The findings also provide conclusive evidence for understanding the usefulness of and the more relevant information regarding the pricing mechanism. In particular, it provides a better understanding of how companies actually use the pricing mechanism information in the flipping of IPO shares. The results of this study are also valuable to underwriters, and regulators, for instance, provides underwriters with the discretion to allocate the IPO shares and the SECP, in revising regulation on the disclosure of IPO pricing methods.

Keywords: Flipping, Fixed-Price Mechanism, Book-Building Mechanism, Pakistan's IPOs, Signaling

JEL Classification Code: G12, G18, G38

1. Introduction

One of the most important decisions to be made by parties (issuers and underwriters) involved in initial public offerings (IPO) is the setting of an offer price. Currently, three types of pricing mechanisms can be used, namely, the book-building method, auction, and fixed-price mechanism (Ritter, 1998). The decision on which of the pricing mechanisms to employ is an important factor that determines the success of an IPO. While the right pricing mechanism is expected to reveal the intrinsic value of the IPO shares offered (Pu & Wang, 2015), the question is whether a particular mechanism would efficiently and accurately estimate the offer price (Jenkinson & Ljungqvist, 2001). The IPO pricing mechanisms contrast

extensively in regard to whether the price discovery happens before or after the setting of the final offer price (Busaba & Chang, 2010). For instance, in the case of book building, the underwriter networks with investors through a "roadshow", thus allowing investors to bid their non-binding indications of interest. This method enables the underwriter to learn about the demand for the issue and consequently set a suitable offer price, leading to less underpricing and a price that is closer to the intrinsic value of the IPO. On the other hand, under the auction method, the offer price of an IPO is determined by market demand where retail investors could also make a bid. Meanwhile, the fixed-price method dictates that the "true" price is set after an offer is made, resulting in high underpricing pressure on issuing firms (Haung, Chiang, Lin, & Lin, 2017). Normally, in this way, a unique and different pricing method would arise due to their distinctive treatment of information asymmetry and signals found in IPOs. Thus, the IPO pricing affects the performance (i.e., pricing and trading volume) of the new issue. Additionally, the pricing mechanism can be assessed using the level of underpricing of IPOs (Derrien & Womack, 2003) as a result of the influence of first-day investor trading behavior (flipping activity in IPOs).

Despite the potential impacts of the different pricing mechanisms, only a few studies, such as Aggrawal (2003) and Krigman, Shaw and Womack (1999) on the book-building pricing mechanism, and Gounlpolus (2006) on the

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fixed-price mechanism have examined the influence of IPO pricing mechanism on the IPO flipping activity. However, all these studies were done in developed markets, and each study focused on only one type of the pricing mechanisms. Besides, only one comparative study on book-building and auction-pricing methods has been conducted (i.e., Neupane, Marshall, Paudyal, & Thapa, 2017) to explain the flipping activity in the Indian IPO market. The study found a negative association between the book-building pricing mechanism and flipping activity. Moreover, the results of the study indicate that the book-building mechanism is the most effective method for integrating non-bid information to allow flexibility in pricing and allocation. Therefore, the current study presents a fresh look at the influence of the pricing mechanism (i.e., book-building and fixed-price mechanisms) on the IPO flipping activity in the Pakistani IPO market, with a presumption that it can serve as a signal of the quality of IPOs and investors would have a favorable perception of the companies, thereby, reducing IPO flipping.

Following the signaling theory, the book-building mechanism allows underwriters to learn about investors' demand for new shares from roadshows, thus reducing the information asymmetry and signaling the IPO firm's fair value, resulting in fewer flipping activities. Alternatively, given that pre-investor demand is not determined in the fixed-price mechanism, then information asymmetry increases, the demand of investors is not known, and the price is set according to demand and supply forces, resulting in a high level of flipping activity.

The Pakistani IPO market is an interesting environment to investigate due to the following motivations. The first motivation is related to the regulations on the pricing mechanism in the Pakistani IPO market. Pakistan has seen the usage of two IPO pricing methods, namely, the fixed-price method and the book-building method. While only the fixed-price method was used in the Pakistani IPO market before 2008, subsequently both methods have been allowed to be used. Under the book-building mechanism, 75% of an IPO shares were offered by book building to institutional investors and 25% through the fixed-price mechanism to the general public. In 2015, a new regulation on the book-building mechanism was issued by the Securities and Exchange Commission of Pakistan (SECP). Under this new regulation, a company that issues more than 200 million rupees of capital during listing must solely use the book-building mechanism.

Nevertheless, only a handful of IPOs have been priced using the book-building mechanism. Following the implementation of the book-building method, the general assumption was that underpricing would be reduced. However, evidence of above-average underpricing in the Pakistani IPO market was still reported in a previous study by Mumtaz Smith and Ahmed (2016). Besides, a recent study by Kooli and Zhou (2020) found a significant and positive relationship between high first-day initial return and flipping

activity. Therefore, an in-depth examination of the role of the pricing mechanism in IPO flipping in the Pakistani market is still required.

Second, there are key differences between highly developed common law countries such as the United States (US) and Pakistan in terms of government regulation, data availability, and the market setting (Khan, Shah, Bah & Khan, 2020; Shahzad, Fukai, Mahmood, Jing, & Ahmad, 2020). Thus, empirical evidence from developed countries may not be relevant to Pakistan and other emerging economies. For instance, the pricing mechanisms adopted in different countries depend on the unique market settings associated with the level of underpricing and trading volume. In order to calculate the correct offer prices, it is crucial to choose an accurate pricing mechanism for IPO issuances because the effectiveness of each pricing mechanism is influenced by two aspects, i.e., the discretion of share allocation to investors and the pricing by underwriters (Hoang, Phan, & Ta, 2020; Sherman, 2000).

Third, given that this is the first study to examine the pricing mechanisms in the Pakistani market, no conclusive evidence is available yet on the significance of the fixed-price and book-building mechanisms, particularly which method has more influence on the flipping activity. Based on the Pakistani IPO pricing setting, this study focused on two pricing mechanisms, namely, book building and fixed price.

Lastly, given that there is no prior study on Pakistan, especially on the book-building IPO pricing mechanism, the present study extends upon prior studies on book building (e.g., Bora, Adhikary & Jha, 2012; Derrein & Womack, 2003; Ma & Faff, 2007; Kutsuna & Smith, 2004) to investigate information asymmetry, which may affect the signal of quality and the IPO flipping activity. This study argues that IPOs issued based on the book-building pricing mechanism are exposed to lower uncertainties as compared to fixed-price IPOs. This is because book building involves underwriters organizing roadshows to capture demand and to set the offer prices, thus reducing information asymmetry and signaling quality, consequently resulting in reduced flipping.

This study contributes to the literature in several ways: first, on the signaling role of the IPO pricing mechanism in IPO flipping activity based on the signaling theory (Allen & Faulhaber, 1989; Grinblatt & Hwang, 1989; Welch, 1989). This study argues that the use of a book-building pricing mechanism for an IPO will send a credible signal of a good quality firm to investors. As such, investors will have more confidence in the IPO investment, as they believe that better prospects of the investment would maximize their wealth. Consequently, the IPO would be underpriced, which could influence flipping significantly. However, existing empirical research has yet to test the signaling role of the pricing mechanism in emerging IPO markets, particularly the Pakistani market. Hence, the results of the present study will

extend the understanding of signaling theory, especially the influence of the pricing mechanism on the flipping activity in Pakistani IPOs.

Secondly, the results on IPO flipping activity provide useful information to underwriters, issuers, investors, and regulators. Underwriters play the primary role in stabilizing the flipping activity in developed markets (Aggarwal, 2000; Ellis, Michaely, & O'Hara, 2000; Fishe, 2002). They use a combination of aftermarket short covering techniques such as penalty bid and over-allotment while also stimulating demand to support price activities to limit the oversupply of IPOs. Hence, underwriters conduct vigorous stabilization activities to support new issues that sell below the offer prices. However, the role of underwriters in emerging economies is somewhat limited (Yong, 2010). Thus, this study could help underwriters in stabilizing the excessive flipping activity in the Pakistani IPO market. More importantly, flipping activity is an important area in IPO research that has attracted the interest of companies undertaking an IPO, investors who are considering investing in IPO companies, and market regulators.

From the issuers' perspective, this study demonstrates that the book-building mechanism has a more significant influence on the flipping activity than does the fixed-price mechanism because the book-building mechanism influences the demand for companies' new IPO shares. As argued by Bubna and Prabhala (2011) and Neupane et al. (2017), the book-building method is advantageous to both underwriters and issuers due to the allocation discretion that is available to underwriters. The evidence supports that the flexibility in allocation not only helps in enhancing the pre-market price discovery, but also affects the behavior of frequent investors as well as incorporates soft non-bid information by preferentially allocating shares to long-term investors because they retain their shares for the long term. On the other hand, young companies tend to employ the fixed-price mechanism (Yong, 2010), with the price discovery set on the day of listing. Thus, information regarding the pricing mechanism provided in the prospectus is a primary source of information that investors use to determine the accuracy of price setting and to predict the future performance of a company. Therefore, this study provides conclusive evidence for understanding the usefulness of and the relevant information regarding the pricing mechanism. In particular, it provides a better understanding of how companies actually use the pricing mechanism information in influencing the flipping of IPO shares. The results of this study are also valuable to regulators, in particular the SECP, in updating the disclosure rules on IPO pricing methods.

The rest of the paper is organized as follows: Section 2 discusses the literature review. Section 3 describes the research methodology employed in this study. Section 4 provides the empirical results and discussion. Section 5 concludes the paper.

2. Literature Review

2.1. IPO Flipping Activities in Various Markets

The flipping ratio varies across different markets and studies, but it still is as anomalous as underpricing or initial return. Therefore, flipping has been extensively studied in the IPO literature. This paradox in flipping activity could be considered as the main factor affecting IPO performance during the listing. The evidence from previous studies, reported in the following paragraphs, shows that the degree of flipping activity in the IPO market varies for the same market over many years and among different markets.

The US market is considered as one of the most developed markets in the world. Krigman et al. (1999) and Bash (2001) reported flipping activity of as high as 45.40% to 48.10% during the period of 1988 to 1995 in the US market. After two years, Aggarwal (2003) documented the flipping activity of 15.00% in the US IPO market, indicating an obvious declining trend. Subsequently, Gounopoulos (2006) recorded the flipping activity of 24.30% in the same market. These studies prove that flipping activity could vary every year, even in the same market.

Conversely, in other markets like Bangladesh, Australia, and Finland, flipping activities are more consistent with that of the recent period in the US, as the figures for these countries remain in the range of 22.00% to 29.67%. In Malaysia, the level of flipping activity is amazingly much lower than those observed in other markets, at less than 10% of the aggregate shares offered. However, this fact holds true only for certain studies (e.g., Chong & Puah, 2009; Chong, 2011) during the 1992–2003 period. If this inference is correct, then this figure shows a quantum leap in trading activity on the first day after the listing of an IPO in the Malaysian market.

In contrast to the results of previous studies, using a sample of 368 IPO firms listed on Bursa Malaysia from 2000 to 2012, Mohd-Rashid Abdul Rahim and Che Yahya (2016) documented 47.6%, 68.1%, and 81.7% flipping ratios for day 1, 3, and 5, respectively. Additionally, the latest evidence from India and China indicates active flipping activity in the IPO markets of those countries. Neupane et al. (2017) found 44.88% flipping activity on the first day of listing in the Indian IPO market. In the Chinese market, which is considered the leading market globally, Kooli and Zhou (2020) recorded 65.42% flipping activity, the highest of all markets in the world up till now.

Overall, prior studies show that the levels of flipping activity are higher in emerging economies than in developed markets. Even though the Pakistani IPO market is an emerging market and indicated high trading volumes during the first five days after listing (Yar & Javid, 2014), little attention has been given by researchers on the flipping activity phenomenon. Therefore, this study unearths the anomaly, namely, the flipping activity in the Pakistani IPO market.

2.2. Pricing Mechanism and IPO Anomalies

The underpricing of IPOs is a tool for estimating the efficiency of the pricing mechanism, which could be utilized to explain investors' first-day trading behavior, otherwise referred to as the flipping activity in IPO. The book-building pricing mechanism model, which was first proposed by Benveniste and Spindt (1989), provides a general theoretical explanation on information revelation theory. By providing cross-sectional evidence, Ljungqvist, Jenkinson, and Wilhelm (2003) reported less underpricing with book-built US IPOs. Likewise, Chahine (2007) reported less underpricing for book-built IPOs in the French financial market. This phenomenon could be due to the controlling power that underwriters have over investors' participation and the selection of potential bidders in terms of revealing private information on the company's true value, which is in line with Sherman (2000). Under this method, the underwriter has the ultimate authority over the allotment of shares to retail and institutional investors and even on the first trading day of the IPO. This argument is in line with Hanley and Hoberg (2010), who expressed that underwriters and issuing firms extend critical resources to obtain information about investors which brings about an exact valuation on cost, and thereby a lesser reliance on investor information. This finding proposes that investors prefer to bear less risk and will ask for less premium, which interrelates with a decrease in ex-ante risk in the initial secondary market and a reduction in flipping.

Scholars who have conducted studies in this area have unanimously agreed that the book-building pricing mechanism is a more efficient method than the fixed-price mechanism (e.g., Bora, Adhikary & Jha, 2012; Chahine, 2007; Kustsuna & Smith, 2004). The book-building mechanism allows underwriters to obtain information from investors, thus leading to more accurate prices (Benveniste & Spindt, 1989). According to Huang et al. (2017), a key difference between the book-building and fixed-price method is that under the book-building mechanism, the underwriter networks with investors through a "roadshow" and bidding by the investors. Consequently, the underwriter will know about the demand for an issue, and hence, will be able to set a suitable offer price. On the other hand, no such roadshow is held under the fixed-price mechanism, and the "true" price is set after an offer is made. Proponents of the book-building mechanism argue that this discretion allows underwriters to improve pricing efficiency and attain the objectives of the offering. Thus, this study proposes that under the book-building mechanism, underwriters would be able to learn about investors' demand for new shares from the roadshows, thus reducing information asymmetry and signaling accurate prices of firms as a result of which flipping is reduced. Alternatively, under the fixed-price mechanism, given that pre-investor demand is not known, then information asymmetry increases, investors' demand is not confirmed, and the price is set according to demand and supply forces, resulting in high flipping. In a similar vein, Neupane et al. (2017) confirmed that Indian IPOs flipped less when the book-building pricing method was used compared to when the auction method was used. They argued that the flexibility to control allocation under the book-building mechanism enabled the underwriters to prevent flippers from flipping and to target long-term investors.

Therefore, considering the claims that the book-building pricing mechanism is efficient, this study argues that firms that use book building would incorporate investors' sentiment and demand in setting the price, which will likely reduce the flipping activity. The following hypotheses, influenced by previous works and the discussion mentioned above, have therefore been formulated:

H1: *IPOs that are priced using the fixed-price mechanism are associated with a high level of flipping activity.*

H2: *IPOs that are priced using the book-building mechanism are associated with a low level of flipping activity.*

3. Data and Sources

3.1. Sample and Data Collection

This study's hypotheses were tested on a sample of 95 IPOs in Pakistan executed over the period from 2000 to 2019. Although the total population of IPOs during this period is 108, three companies were excluded from the analysis because those companies offered their shares without listing by the end of 2019. Another two firms were also excluded due to inconsistent data. Also, as is customary, eight modaraba companies were excluded since they have different asset-liability structures that disallow accounting performance comparisons. The exclusion of these IPOs is consistent with prior IPO studies, such as Aslam and Ullah (2017), because these IPOs are subjected to different regulatory requirements. After the exclusion, the final sample included for the analysis consists of 95 IPO firms. This study uses secondary data comprising both pre-listing and post-listing data. Pre-listing data includes the pricing mechanism, company age, size of the company, underwriter reputation, and the KSE 100 price index. Pre-listing data was sourced from company prospectuses, DataStream, the Pakistan Stock Exchange website, and the SECP Data Centre. The post-listing data includes the first trading day opening and closing prices of the IPOs and the trading volumes and subscription ratios during the first trading day after the listing. These data were also gathered from DataStream, the Pakistan Stock Exchange website, and the SECP website.

3.2. Model Specification

This study examined the impact of the pricing mechanism on the flipping activity in Pakistan's IPO market by employing ordinary least square (OLS) regression and quantile regression models. Model 1 shows the relationship between the pricing mechanism and flipping activity by using OLS regression, as shown below:

$$FLIP1,i = \alpha + \beta_1 BPM_i + \beta_2 INR_i + \beta_3 AGE_i + \beta_4 UNW_i$$
$$+ \beta_5 SIZE_i + \beta_6 DUM\ (reg)_i + \varepsilon_i \qquad (1)$$

In addition, quantile regression was used to see the whole conditional distribution of the dependent variable on different levels. The key advantage of using quantile regression is that it provides results on upper, median, and upper levels, unlike traditional regression techniques that only show the mean relationship between the dependent and independent variables. Models 2, 3, and 4 represent the lower, median, and upper level, respectively, of the relationship between the pricing mechanism and flipping activity, as follows:

$$Q_{0.10} FLIP1,i = \beta_{o\,0.10} + \beta_{0.10,1} BPM_i + \beta_{0.10,2} INR_i$$
$$+ \beta_{0.10,3} AGE_i + \beta_{0.10,4} UNW_i + \beta_{0.10,5} SIZE_i$$
$$+ \beta_{0.10,6} DUM\ (reg)_i + \varepsilon_i \qquad (2)$$

$$Q_{0.50} FLIP1,i = \beta_{o\,0.50} + \beta_{0.50,1} BPM_i + \beta_{0.50,2} INR_i$$
$$+ \beta_{0.50,3} AGE_i + \beta_{0.50,4} UNW_i + \beta_{0.50,5} SIZE_i$$
$$+ \beta_{0.50,6} DUM\ (reg)_i + \varepsilon_i \qquad (3)$$

$$Q_{0.90} FLIP1,i = \beta_{o\,0.90} + \beta_{0.90,1} BPM_i + \beta_{0.90,2} INR_i$$
$$+ \beta_{0.90,3} AGE_i + \beta_{0.90,4} UNW_i + \beta_{0.90,5\,5} SIZE_i$$
$$+ \beta_{0.90,6} DUM\ (reg)_i + \varepsilon_i \qquad (4)$$

3.3. Variable Measurements

Table 1 shows the dependent, independent, and control variables used in this study. Further, the table shows the descriptions, definitions, and sources of the variables along with the previous studies from which this study adopted the variables.

Table 1: Variables' Definition and Data Sources

Variable		Description	Definition	Sources	Adopted
Dependent Variable					
FLIP	Flipping activity day 1	First day volume traded for firm/no of shares issued for IPO		Data stream	Aggrawal (2003), Kooli and Zhou (2020)
Independent Variable					
BPM/FPM	Book-Building/ Fixed-Price Mechanism	Coded as 1 if firm is listed through book-building price mechanism and 0 for fixed-price mechanism		Prospectus	Pu and Wang (2015)
Control Variable					
INR (clo)	Initial Return (close)	Closing price on first day of listing-offer price/offer price		Pakistan Stock Exchange Website	Che-Yahya, Abdul-Rahim and Rashid, (2018), Kooli and Zhou (2020)
AGE	Firm's Age	Interval between year of offer and year of incorporation of a firm		Prospectus	Kooli and Zhou (2020)
UNR	Underwriter Reputation	Relative market share of each underwriter by each year in sample		Prospectus	Megginson and Weiss, (1991)
SIZE	Firm's Size	Natural log of total assets of the firm at the time of IPO		Prospectus	Aslam and Ullah (2017)
DUM (reg)	Dummy Regulations	Coded as 1 if firm listed after book-build regulations introduced and 0 before book-building regulation		Prospectus	

4. Results and Discussion

The descriptive statistics of the variables used in this analysis are provided in Table 2. The IPO companies are classified into those that used book-building pricing mechanism and the fixed-price mechanism. In this context, the analysis looked at variables that have a noticeable difference between book-building and fixed-price mechanism IPO classes. The median (Mann Whitney) tests were used in this analysis.

Based on the Mann Whitney test, IPOs issued under the fixed-price mechanism flip significantly more than those issued under the book-building mechanism. Initial return is not significant in book building. The findings are similar to Ljungqvist et al. (2003) and Chahine (2007), which reported less underpricing of book-built US and French IPOs. Next, the findings on the age of firms revealed that more mature firms or firms that have been operating for a long time adopted the book-building mechanism. The findings are in line with Yong (2010), which documented that young companies tend to employ the fixed-price mechanism. Similar results were found for underwriter's reputation, size of the company, and dummy regulation. Underwriter's reputation is highly significant with book-building than with the fixed-price mechanism. As emphasized by Benveniste and Spindt (1989) and Neupane et al. (2017), underwriters play a key role in the book-building process as they arrange roadshows, capture investors' demand, set the best prices that are close to the intrinsic values of IPOs, and help to reduce the flipping activities on the first day after listing. The firms that adopted the book-building mechanism are large compared to those that adopted the fixed-price mechanism. Finally, the dummy regulation means that most firms that used the fixed-price mechanism were listed before the book-building regulation was introduced.

The matrix for correlations between the determinant variables is shown in Table 3, and all the described variables had a correlation variable under 0.70. Strong correlations between variables might skew the effect of an individual variable on the described variable (Maddala & Lahiri, 1992). The findings show the strength of the correlations of the variables measured, including the flipping activity with BPM and IR, which had strong correlations. Table 3 thus demonstrates that the book-building mechanism may have a negative effect on the flipping activity

After considering all the samples, Table 4 presents the findings of multiple regression analysis. It measures the influence of pricing mechanism, initial return, age of the firm, underwriter reputation, size of the firm, and dummy regulation in order to understand the flipping activity in IPOs. Three diagnostic tests were conducted, namely, autocorrelation, multicollinearity, and heteroskedasticity. The presence of autocorrelation was tested using Durbin-Watson (DW) statistics. The DW value is higher than the critical value of Savin and White, thus confirming that autocorrelation is not an issue in this study. To identify the presence of multicollinearity between all variables, variance inflation factors (VIFs) were used. In this research, the highest VIF value is 1.33. Since all the VIFs are below 10, it can be inferred that there is no multicollinearity problem among all variables. However, White's heteroskedasticity test indicated a problem with heteroskedasticity. Thus, to correct this issue, White's heteroskedasticity-consistent standard errors were used. The Ramsey RESET was conducted, and the finding proves that the estimated model is correctly stated with a probability of 0.2888.

Table 2: Differences in the mean of the independent variables' groups between BPM (N=27) and FPM (N=68)

Variable	Group	Mean	Med.	Min.	SD.	Mean Diff	Mann Whitney
FLIP (%)	BPM	4.541	1.662	0.000	5.594	-8.330	-1.836*
	FPM	12.871	3.774	0.000	18.168		
INR (%)	BPM	28.795	5.000	-5.800	58.522	-11.180	-.896
	FPM	39.975	15.000	-35.760	66.059		
AGE (years)	BPM	22.037	19.000	3.000	18.169	5.875	-2.181**
	FPM	16.162	8.000	0.000	18.166		
UWR (%)	BPM	24.737	17.733	0.540	21.870	13.566	-3.928***
	FPM	11.171	3.590	0.140	16.472		
SIZE (%)	BPM	22.074	22.000	16.000	1.859	1.456	-4.002***
	FPM	20.618	21.000	16.000	1.812		
DUM (reg)	BPM	1.000	1.000	1.000	0.000	0.721	-6.305***
	FPM	0.279	0.000	0.000	0.452		

Note: *, **, *** represent significance at the 10%, 5%, and 1%, respectively, where FLIPi = flipping activity, BPM/FPM = book-building and fixed-price mechanisms, INR= initial return close, Age = age of firm, UWR= underwriter reputation, SIZE= size of firm, DUM (reg) = dummy book-building and fixed-price mechanism regulations.

Table 3: Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) FLIP	1.000						
(2) BPM/FPM	-0.235**	1.000					
(3) IR	0.237**	-0.079	1.000				
(4) AGE	0.160	0.146	-0.044	1.000			
(5) UNWRI	-0.187*	0.323***	-0.105	0.320***	1.000		
(6) SIZE	-0.185*	0.342***	-0.141	0.063	-0.067	1.000	
(7) DUM (reg)	-0.088	0.650*	-0.133	0.033	0.213**	0.532***	1.000

Note: *, **, *** represent significance at the 10%, 5%, and 1%, respectively, where FLIPi = flipping activity, BPM/FPM = book-building and fixed-price mechanisms, INR= initial return close, Age = age of firm, UWR= underwriter reputation, SIZE= size of firm, DUM (reg) = dummy book-building and fixed-price mechanism regulations.

Table 4: Multiple Regression for the flipping activity model

VARIABLES	Multiple Regression		Robust Regression		
	Coef.	Std. Err.	Coef.	Std. Err.	T-stat
BPM	-10.533**	(4.521)	-10.533**	(4.423)	-2.38
INR	0.052**	(0.024)	0.052**	(0.023)	2.25
AGE	0.262***	(0.088)	0.262***	(0.095)	2.77
UNW	-0.210**	(0.090)	-0.210***	(0.066)	-3.17
SIZE	-2.128**	(0.954)	-2.128**	(1.067)	-2.00
DUM (reg)	9.978**	(4.433)	9.978*	(5.968)	1.67
CONSTANT	49.999**	(19.503)	49.999**	(22.068)	2.27
Observations	95		95		
R-squared	0.233		.233		
Adjusted R-square	0.174		.224		
Mean VIF	1.33				
Durbin Watson	1.80				
RAMSEY	.2888				

Note: *, **, *** represent significance at the 10%, 5%, and 1%, respectively, where FLIPi = flipping activity, BPM/FPM = book building and fixed-price mechanisms, INR= initial return close, Age = age of firm, UWR= underwriter reputation, SIZE= size of firm, DUM (reg) = dummy book-building and fixed-price mechanism regulations.

Table 4 presents the results of the multiple regression model and the robust regression of the flipping activity model. The R^2 value of the flipping model is 23.3 per cent, which means all the explanatory variables explain 23.3 per cent of the flipping activity on the first day of listing. The independent variable, which is the book-building pricing mechanism, is significant and negatively related to the flipping activity of IPOs. This result is in line with Neupane et al. (2017) that investors flip less under the book-building pricing mechanism.

This is because according to the signaling theory, underwriters should organize roadshows to capture demand and then set the offer prices that are close to the intrinsic values, which will send a quality signal to the market. As such, potential investors will receive enhanced information about IPO prices, thus reducing the flipping activity. Overall, the finding shows that the book-building pricing mechanism is more sophisticated and efficient than the fixed-price mechanism (Bora et al., 2012; Chahine, 2007; Kustsuna & Smith, 2004).

Concerning the control variables, the finding shows that initial return has a positive and significant relationship with the flipping activity. This result is in line with prior studies by Aggarwal (2003), Che-Yahya Abdul-Rahim and Yong (2014), and Kooli and Zhou (2020), which found that high underpricing is due to mispricing by underwriters and has nothing to do with flipping. This association is anticipated because investors would automatically be influenced to flip their IPOs when they see a chance to make a much less risky and quicker profit, including following a price appreciation on the first day of IPO listing. The next control variable is the age of the firm, which is also positively and significantly associated with the flipping activity, indicating that older firms tend to attract flippers (Kooli & Zhou, 2020). Next, underwriter reputation shows a significant and negative relationship with the flipping activity of IPOs. This result is similar to Aggarwal (2003), Benveniste and Spindt (1989), and Kooli and Zhou (2020), and it indicates that underwriters play a major role during the listing process and help in stabilizing excessive flipping on the first day of listing. Firm size is also negatively significant to the flipping activity of IPOs because large firms tend to make a large offer of IPO shares, which will fulfill more subscriptions, and additional demand will not generate excess flipping, which signals quality (Che-Yahya et al., 2018; Islam & Munira, 2004). The dummy book-building regulation shows a positive and significant relationship with flipping activity, indicating that the new building regulation has a positive influence on the flipping activity.

Table 5: Quantile Regression for the flipping activity model

Flip1	.10 Quantile	.50 Quantile	.90 Quantile
BPM	-0.397	-5.119	-33.194*
	(0.417)	(3.847)	(17.144)
INR	0.014***	0.055***	0.063
	(0.002)	(0.020)	(0.091)
AGE	0.003	0.186**	0.472
	(0.008)	(0.075)	(0.333)
UNW	-0.003	-0.089	-0.426
	(0.008)	(0.077)	(0.342)
SIZE	-0.065	-0.950	-2.450
	(0.088)	(0.812)	(3.618)
DUM (reg)	0.237	5.974	32.169*
	(0.409)	(3.773)	(16.811)
CONSTANT	1.393	20.618	71.643
	(1.800)	(16.596)	(73.958)
OBS	95	95	95

Note*, **, *** represent significance at the 10%, 5%, and 1%, respectively, where FLIPi = flipping activity, BPM/FPM = book-building and fixed-price mechanism, INR = initial return close, Age = age of firm, UWR = underwriter reputation, SIZE = size of firm, DUM (reg) = dummy book-building and fixed-price mechanism regulations.

In Table 5, the quantile regression of Koenker and Bassett (1978) is presented in order to evaluate the findings in terms of the robustness of the results. The analysis uses quantile regression to provide a clear picture of the forecasters of the regression model, specifically, how the independent and control variables affect the median, taking into consideration whether the median is in the lowest or the highest flipping percentile. In addition, since the quantile regression model does not involve strong distributional presumptions, this model provides a strong tool to represent the relationship between the predictors and the flipping behavior (Koenker & Bassett, 1978). The results of quantile regression indicate that all stages, i.e., lower, median, and higher levels, are outlined. Flipping behavior at lower and median quantile regression levels is negative, but not significantly correlated with the book-building pricing mechanism. However, Model 3 of Table 5 demonstrates that at a higher quantile regression level, the book-building mechanism is significantly and negatively related to the flipping activity. This result shows that for lower and median quantiles when the flipping activities are low and moderate, the Pakistani IPO market is experiencing high underpricing. However, for the upper quantile when the flipping activity is high, the book-building mechanism discourages flipping in Pakistan's IPO market.

5. Conclusion

The flipping behavior is known as one of the anomalies present in IPO activities. In Pakistan's IPO market, even though the issue is recognized, it has not been given much attention. This study, therefore, investigated the determinants of the flipping activity, specifically the effects of the pricing mechanism on flipping in Pakistan's IPO market. The pricing mechanism differs according to the market structure from country to country. The IPO market in Pakistan is special, as IPOs can be offered using two pricing mechanisms, namely, fixed-price and book-building mechanisms. The book-building mechanism regulation has been effective since 2008, and a handful of IPOs have been listed using this pricing mechanism. Results of the Mann Whitney test show that the fixed-price mechanism is positively and significantly related to flipping activities. This is due to information asymmetry and the price is set after the subscription. Moreover, the results show that the book-building mechanism reduces flipping activities, as following the signaling theory, underwriters organize roadshows to capture demand and to set IPO offer prices. The offer prices will be close to the intrinsic values and will send a quality signal to the market, thus enhancing potential investors' knowledge about the IPO prices and reducing flipping. Additionally, the OLS findings reveal that book building significantly and negatively influences flipping activities in Pakistan's IPO market.

The quantile regression findings further demonstrate that the flipping activity in Pakistan's early IPO market in respect of the upper quantile is negative and discourages flippers from draining all the early profits from the market. This finding is in line with Neupane at al. (2017), which found that the book-building mechanism is highly sophisticated and the roadshows organized by underwriters help to capture investors' demand and set accurate prices that are closer to the intrinsic values, which signal quality and discourage rational investors from flipping excessively. The findings of this study also show that the book-building regulation is positively and significantly related to the flipping activity, indicating that the book-building regulation increases flipping. Moreover, underwriters play an important role in the book-building mechanism by capturing the demand of investors and helping to stabilize the IPO flipping activity.

The results of this study provide useful information to underwriters, issuers, investors, and regulators. Underwriters play a key role in stabilizing the flipping activity in developed markets. The findings of this study might provide useful insight to underwriters in stabilizing the excessive flipping activity in Pakistan's IPO market. From the issuers' perspective, this study shows that the book-building mechanism has a more significant influence on the flipping activity compared to the fixed-price mechanism because the book-building mechanism influences the demand for new shares of the IPO companies. In addition, book building is advantageous to both underwriters and issuers and it provides underwriters with the discretion to allocate the IPO shares. The evidence suggests that the flexibility in allocation, not only helps in enhancing the pre-market price discovery, but also affects the behavior of frequent investors as well as incorporates soft non-bid information by preferentially allocating shares to long-term investors because they retain their shares for a long period.

Therefore, the pricing mechanism information obtained from the prospectus is a primary source of information that investors use to determine the accuracy of the price setting and to predict the future performance of a company. Thus, this study provides conclusive evidence for understanding the usefulness of and the more relevant information regarding the pricing mechanism. In particular, it provides a better understanding of how companies actually use the pricing mechanism information in the flipping of IPO shares. The results of this study are also valuable to regulators, specifically the SECP, in formulating and revising regulation on the disclosure of IPO pricing methods.

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