

# Suitability of IPO Pricing Methods to Overcome Underpricing: A Comparative Study in Bangladesh

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## Abstract

Initial Public Offering (IPO) mechanism gives a part of ownership of companies to small savers and enables investors to contribute to the economic development. This paper explores selected techniques by which companies going to public vary substantially across the world in the most studied market. In Bangladesh, there are two main methods of IPO pricing. One is Fixed Price (FP) method and another is Book Building (BB) method. It is difficult to isolate the impact of book building method relative to fixed price method which is used by the companies to go public. The empirical evidence demonstrates that most of the companies enter into capital market through FP method and BB method is the current issue in the capital market of Bangladesh. This study analyzes the trends of underpricing, overpricing, and oversubscription in initial public offerings (IPOs) listed in Dhaka Stock Exchange (DSE) and to what extent on a year to year basis. After introducing BB method in Bangladesh, 91 companies were listed in DSE during 2008-2015 except mutual fund and bond, out of which 87(95.60%) IPOs were listed through FP method and only 4(4.40%) were listed through BB method, and 89 (97.80%) IPOs were found to be underpriced, only 2 (2.20%) were overpriced while nothing is accurately priced. This research reveals that book building method may diminish the degree of underpricing and also compact the variance of over subscription considering all factors relating to IPOs in Bangladesh.

**Keywords:** IPO, Fixed Price Method, Book Building Method, Primary Market, Underpricing.

## 1. Introduction

Initial Public Offering(IPO) is a mechanism to flow fund from the hands of small savers-individual and institution at low costs to those entrepreneurs who need fund to start business or to expand capacity of existing business or to add new line of business. Pagano, et al., (1998) acknowledged that a firm enters the capital market through IPO for a variety of reasons, including overcoming borrowing constraints, superior bargaining power with banks, liquidity and portfolio diversification, monitoring investor respect, change of controls and windows of opportunity.

There are two methods of IPO pricing in Bangladesh. Under the fixed price method an IPO is priced according to how the issuer and its investment banker set the price. The basis of pricing is explained in an offer document known as 'Prospectus' through which qualitative and quantitative statements are disclosed justifying the issue price. The most recent method of IPO pricing introduced is known as the book building method which was introduced in 2010. Under this method, the issuer in association with the investment banker indicated either a floor price or a price band, with a lower limit ('the floor') and the upper limit ('the cap'). The floor price or price band is decided based on past performance, expected future earning of the issuer and the price earnings ratio (P/E ratio) of the other peer group companies of that industry. It is a mechanism where, during the period for which the book for the offer is open, the bids are collected from investors at various prices, which are within the price band specified by the issuer. The process is directed towards both the institutional as well as the retail investors. The investors can bid for any price between the cap and the floor and the quantum of subscription. One of the lead managers works as the book runner. The final issue price is determined as the cut-off based on demand and supply at which the issue is fully subscribed.

Underwriters concern a planned price discount to their fair value approximation of IPO shares when they set the beginning offer price (Shiller, 1990; Roosenboom, 2007). Such a purposeful discount allows underwriters to pay out less market endeavor and to ingratiate themselves with buy-side clients such as institutional investors (Baron, 1982) and increase investor demand more than the level it would usually have been (Shiller, 1990). Since the issuer cannot keep an eye on the underwriter without cost they trust the underwriters' pricing decision and consider IPO underpricing as a necessary cost of going public.

There is a rising concentration in the investigational analysis of the pricing methods for initial public offerings of equity (IPOs). Biais et al. (2002), Trauten and Langer (2008), Zhang (2009) and Bonini and Voloshyna (2009) present theoretical and experimental analysis about the common methods and advise alternatives to diminish the problems of book building, the most common method. Moreover, international evidence suggests that book-building issues expect to have lower underpricing than that of fixed-price issues and book-building is considered as the most effective method because it resulted in more efficient pricing for issuer compared to fixed price method. Book-building is commonly adopted in global primary markets and regarded as the most efficient pricing method for accurate IPO pricing by literatures.

The main objective of the study is to evaluate the different methods of IPO pricing to overcome

underpricing from the perspective of Bangladesh. In order to achieve this objective this study is designed to manifest the following:

- To illustrate the price behavior and oversubscription trends and to show to what extent.
- To examine the IPO performance based on listed companies in DSE from 2008 to 2015.
- To identify the balanced method(s) for launching IPO in Bangladesh.

The rest of the paper is organized as follows. Section 2 will review some relevant and related literature. Section 3 will clarify research design including research plan, scope and limitations. Section 4 will highlight IPOs performance measurements based on multidimensional comparisons of fixed price and book building methods. Section 5 is the conclusion.

## 2. Review of Related Literature

A key feature of IPOs is that the shares are complex and therefore expensive to appraise. There are no past analyst reports to read and no historical prices to examine. Corporate insiders have a clear, complete benefit in terms of their knowledge of current assets and past performance, but evaluation requires more than just this. Valuation also involves forecasting the future of the company, its competitors, and the industry as a whole and evaluating the quality of management and its tactical vision (Sherman, 2010).

Early research related to initial public offerings (IPOs) documented the tendency of IPOs to provide abnormal returns to investors who purchased them at the initial offering (Stoll and Curly, 1970). As a result the purposes for entering capital market through IPO are not achieved by the firm because a firm has entered into capital market to finance its investment project.

Initial Public Offerings (IPOs) are priced by different mechanisms in different nations. Before 1990, Fixed Price (FP) was usually accepted. In the recent two decades, Book-Building (BB) has almost been converted into leading all over the world (Jagannathan et al., 2010).

The performance of book building in comparison to fixed price initial public offerings (IPOs) is a well researched area worldwide. Both offering methods lead to underpricing. Underpricing of IPOs as referred in the literature is one of the abnormalities experienced in the primary markets all over the world. The term refers to the positive initial proceeds in excess of the offer price to first trading dates of the new issues. While the evidence on IPOs long-run underperformance is varied, the most unusual and usually diffused empirical regularity is the initial underpricing, i.e. the positive first trading day's returns. It seems that underwriters do not fully slot in all available information into the offer price creates asymmetric information resulting IPO underpricing (Ritter and Welch, 2002).

According to Ritter and Welch (2002), average initial returns in China from 1990-2000 was the highest at 256.9%. In 2005, the book-building pricing mechanism was introduced for Chinese IPO pricing which is considered as a milestone of transforming from fixed price to book-building. The first intention of this alteration is to compose offer price more accurately because under book-building method, price is determined on the basis of demand and supply.

Jagannathan and Sherman (2006) examined the IPO methods used in 47 countries and find that book building is now common phenomena around the world. Book-building overcame technological problems by bringing investors collectively. However, the lead underwriter still exercises its diplomacy. Wilhelm (2005) supported book-building and is doubtful of alternative methods because there was no strong evidence that justified its replacement.

Benveniste and Wilhelm (1997), Ljungqvist and Wilhelm (2002) and Sherman (2005) demanded that a key feature of book building is the facility of underwriters to reward investors that make known their view about the true value of the company. Investors that included more information in their bid, such as quantity and price, receive larger allocations (Jagannathan and Sherman, 2005). There may be additional information creation and more rewards to institutional investors with book-building. Cornelli and Goldreich (2003) and Ljungqvist (2007) sustain that book building is the best pricing method for IPOs because it is a more effective information finding procedure.

Benveniste and Busaba (1997) recommended that book building results in a better price discovery than fixed price offers, even though it may also be associated to greater price variation. Their conclusions are reliable with those of Benveniste and Wilhelm (1990) in different regulatory environments. Busaba and Chang (2010), in contrast, do not support the superiority of book building over fixed pricing in regards to the trading of the new shares in the secondary market. Book building may significantly influence the performance of the new stock prices in the secondary market and the reimbursement of leading underwriters (Bartling and Park, 2010).

In India, the book building method has improved in popularity with over 70% of IPOs from 2002 selecting that method. The changeover from IPOs using fixed price offers, to the majority using book building illustrates how rapidly the market adopts a procedure that appears to offer greater efficiency. Moreover, the debate is going on in the academic society about best possible selling procedures in IPOs. Analysis of Indian

IPOs is required as it gives the opportunity to appraise the shift in issue procedures. In India until 1998 almost all IPOs were fixed price offerings, while book building has become popular in 1999. Thus, there is the opportunity to test how a change in the institutional arrangements that govern the pricing of IPOs, from the traditional fixed price approach to the book building, affects the level of underpricing(Mishra,2012). The present analysis focuses on the effect of introducing book building as a mechanism of IPO pricing in the primary market previously dominated by fixed price offerings.

### 3. Research Design

The span of the study is Bangladesh Capital Market, more specifically DSE. This paper covers evaluation of various methods of IPO pricing and tries to find out why the IPO's are under priced and to what extent. It also tries to find out the negative aspect of these methods and the best way to price an IPO.

Though a wholehearted effort was applied to find out a reliable and fruitful outcome from this research but there exist some confinements like fewer listed companies in DSE through book-building method and lack of available data which acted as barrier to justify the suitability of book-building method to fixed price method.

An intensive library based research has been completed to reorganize and analyze data from secondary sources. To collect secondary data, annual report of DSE, prospectus of IPOs, various publications of DSE and CSE, different publications regarding capital market and IPO pricing and related articles from national and international journals were studied. In order to justify IPOs underpricing, we analyze share returns at the first trading day of listing in DSE.

### 4. IPOs Performance Measurement

A sample of 91 IPOs on the Dhaka Stock Exchange (DSE) during 2008-2015 is identified from the website of DSE and Stock Bangladesh Limited. To make sure valid estimates of the measures, an IPO is incorporated only when it satisfies certain additional criteria. These are: the IPOs are ordinary common shares, mutual fund and bonds are excluded from the analysis; the IPOs must have relevant financial information like oversubscription times and closing price of first trading day etc. from the website of DSE and Stock Bangladesh Limited. Table 1 shows the classification of data based on methods of pricing and year basis.

Table 1: Sample distribution of IPOs by pricing methods

Year	Methods of pricing		Total	% of sample
	Fixed price(FP)	Book building(BB)		
2008	10	0	10	10.99
2009	10	0	10	10.99
2010	6	1	7	7.69
2011	5	2	7	7.69
2012	10	0	10	10.99
2013	15	0	15	16.48
2014	17	0	17	18.69
2015	14	1	15	16.48
Total	87	4	91	100

In 2013-2015, there is high level of IPO activity, about 51.65% of the whole sample. The table also reports that the largest number of IPOs occurred in 2014 but IPOs through BB was absent in that year. After introducing BB method, 91 companies were listed in DSE during 2008-2015, out of which 87(95.60%) IPOs were listed through FP method and only 4(4.40%) were listed through BB which indicates Bangladesh Securities and Exchange Commission (BSEC) was not concerned about BB method for launching IPOs in Bangladesh. Following fig.1 illustrate the dominancy of FP method over BB method all over the period during 2008-2015.

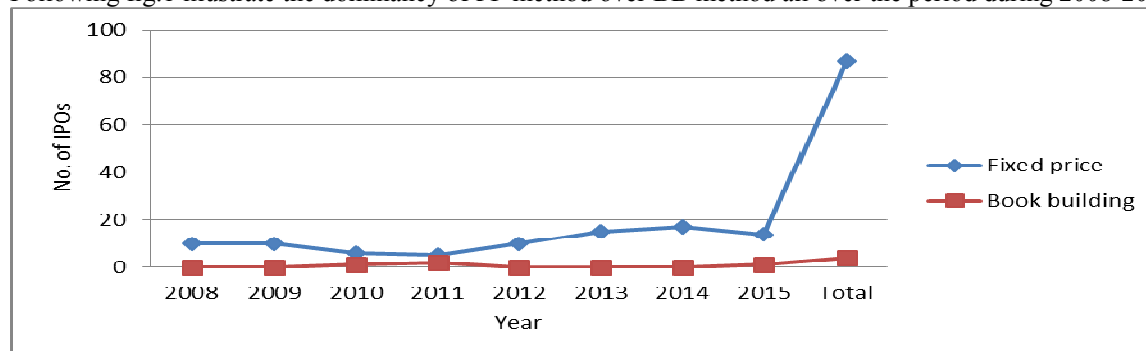


Figure 1: Fixed price and book building methods in terms of no. of issues

Table 2 summarizes the average return on stocks issued by FP and BB methods calculated based on first

trading day's closing price. It also shows number of IPOs having positive and negative return on first trading day's closing price in terms of FP and BB methods. All IPOs provided positive average return irrespective of methods of issues during 2008-2015. Only 2 firms give negative return issued by FP method.

Table 2: IPOs average first trading day's return by listing year

Year	IPOs		Average return (%)		Positive		Negative	
	FP	BB	FP	BB	FP	BB	FP	BB
2008	10	0	390.00	0	10	0	0	0
2009	10	0	346.82	0	10	0	0	0
2010	6	1	459.61	332.92	6	1	0	0
2011	5	2	94.32	22.55	5	2	0	0
2012	10	0	81.44	0	8	0	2	0
2013	15	0	156.34	0	15	0	0	0
2014	17	0	150.63	0	17	0	0	0
2015	14	1	99.18	73.61	14	1	0	0
Total	87	4	286.05*	76.14*	85	4	2	0

Note: Average return is calculated based on first trading day's closing price. \* is calculated based on all listed companies during 2008-2015. Closing prices of IPOs were collected from Stock Bangladesh website.

IPOs which are underpriced at the time setting offer price approved by BSEC will give abnormal return on first trading day compared with offer price. In 2008-2015, average yearly return on stocks issued by FP method is higher than that of BB method reveals that IPOs issued by FP method are more underpriced than that of BB method illustrated by the following fig.2. Average return on first trading day's closing price of all listed companies during 2008-2015 by FP and BB methods are 286.05% and 76.14% respectively. That is IPOs issued by FP method provided abnormal return on first trading day over BB method in Bangladesh. This finding reveals that BB method is better than FP method to overcome the problem of underpricing for launching IPOs in Bangladesh.

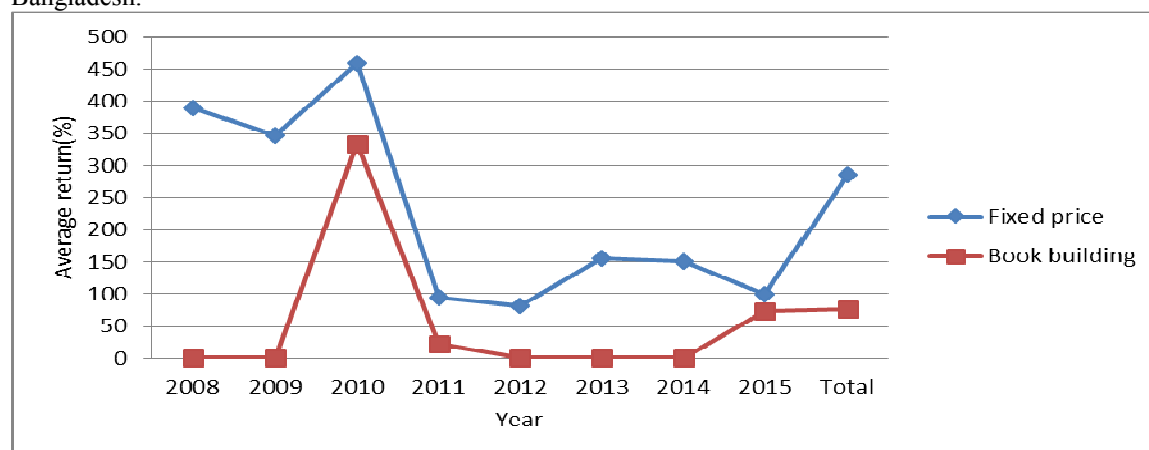


Figure 2: Fixed price and book building methods in terms of average return

An oversubscription of any IPO indicates that the said IPO has more demand to the investors due to offering at lower price than expected i.e., the IPOs are underpriced. Table 3 reports IPOs oversubscriptions (by times) in terms of pricing methods during 2008-2015. All IPOs in Bangladesh are oversubscribed irrespective of pricing methods from 2008 to 2015.

Table 3: IPOs average oversubscription during 2008-2015

Year	IPOs		Average subscription(times)	
	FP	BB	FP	BB
2008	10	0	31.62	0
2009	10	0	21.37	0
2010	6	1	17.19	15
2011	5	2	29.02	5.48
2012	10	0	10.18	0
2013	15	0	15.72	0
2014	17	0	25.25	0
2015	14	1	29.28	5.87
Total	87	4	23.08*	8.78*

Note: \* is average of all averages during 2008-2015.

In 2010, 2011, and 2015, IPOs through FP method are oversubscribed by 17.19 times, 29.02 times, and 29.28 times respectively while IPOs through BB method are oversubscribed by 15 times, 5.48 times, and 5.87 times respectively. IPOs through FP method are oversubscribed more than that of BB method during 2008-2015 demonstrated by the following fig.3. This result exposes that BB method is superior to FP method to defeat the problem of oversubscription due to underpricing for launching IPOs in Bangladesh.

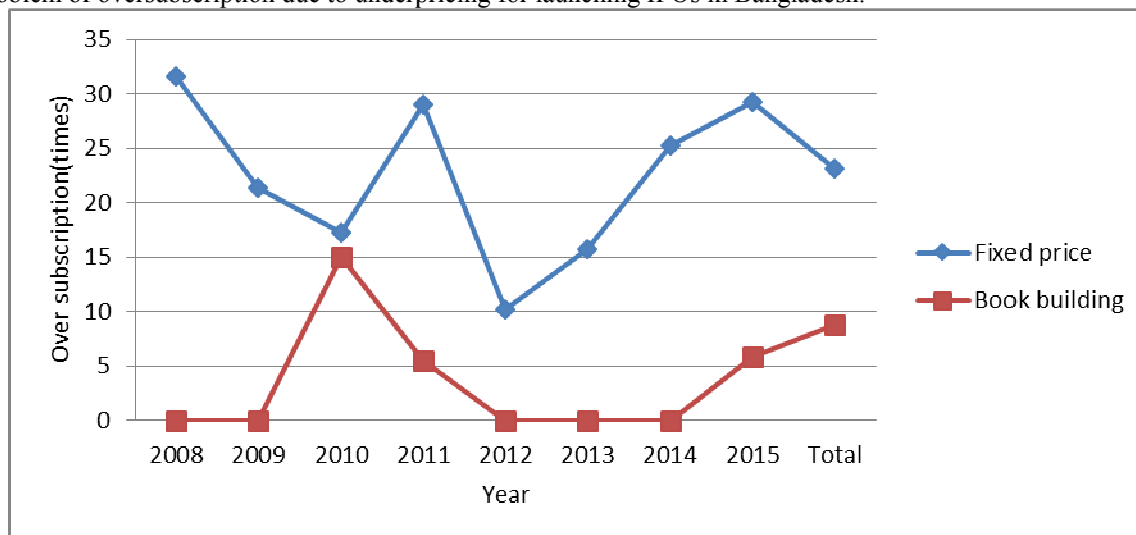


Figure 3: Fixed price and book building methods in terms of over subscription (times)

## 5. Conclusion

It is the perfect time for Bangladesh to concern about book building method as a pricing mechanism to defeat underpricing and attract the fundamentally strong company to enter into the capital market. As a growing capital market we need the business enterprises with strong fundamentals to enter into stock market. A well-managed and active stock market is the important part of national economy and helps the development process in many ways.

On the other hand, we should also exit with fixed rate system. Our capital market is not a matured capital market, it is a growing market and most of the investors are retail or small investors. If they cannot be able to apply for any kind of IPO, they may not think to enter into secondary market. So the book building system and existing IPO offering system should run in parallel. BSEC should fix the criteria to determine which company deserves the book building method to float IPO's and which company deserves fixed price method to float IPO's at the initial level. Future research should pay more attention to find out the appropriate method to price an IPO accurately addressing multidimensional effects of determinants resulting underpricing including discounted future prospects, its competitors, the industry and the economy.

## References

- Baron, D.P., 1982. A model of the demand for investment banking advising and distribution services for new issues. *The Journal of Finance*, 37(4), pp.955-976.
- Bartling, B. and Park, A., 2010. How syndicate short sales affect the informational efficiency of IPO prices and underpricing. *Journal of Financial and Quantitative Analysis*, 45(2), pp. 441-471.
- Benveniste, L.M. and Wilhelm, W.J., 1990. A comparative analysis of IPO proceeds under alternative regulatory environments. *Journal of financial economics*, 28(1-2), pp.173-207.
- Benveniste, L.M. and Wilhelm, W.J., 1997. Initial public offerings: going by the book. *Journal of Applied Corporate Finance*, 10(1), pp.98-108.
- Benveniste, L.M. and Busaba, W.Y., 1997. Bookbuilding vs. fixed price: an analysis of competing strategies for marketing IPOs. *Journal of Financial and Quantitative Analysis*, 32(04), pp.383-403.
- Biais, B., Bossaerts, P. and Rochet, J.C., 2002. An optimal IPO mechanism. *The Review of Economic Studies*, 69(1), pp.117-146.
- Bonini, S. and Voloshyna, O., 2013. A, B or C? Experimental tests of IPO mechanisms. *European Financial Management*, 19(2), pp.304-344.
- Busaba, W.Y. and Chang, C., 2010. Bookbuilding vs. fixed price revisited: The effect of aftermarket trading. *Journal of Corporate Finance*, 16(3), pp.370-381.
- Cornelli, F. and Goldreich, D., 2003. Bookbuilding: How informative is the order book?. *The Journal of Finance*, 58(4), pp.1415-1443.

- Jagannathan, R. and Sherman, A.E., 2005. Reforming the bookbuilding process for IPOs. *Journal of Applied Corporate Finance*, 17(1), pp.67-72.
- Jagannathan, R. and Sherman, A.E., 2006. *Why do IPO auctions fail?* (No. w12151). National Bureau of Economic Research.
- Jagannathan, R., Jirnyi, A. and Sherman, A., 2010. *Why don't issuers choose IPO auctions? The complexity of indirect mechanisms* (No. w16214). National Bureau of Economic Research
- Ljungqvist, A., 2007. IPO underpricing: A survey, handbook in corporate finance: Empirical corporate finance. *North-Holland*, 378422(41), pp.63-99.
- Ljungqvist, A.P. and Wilhelm, W.J., 2002. IPO allocations: discriminatory or discretionary?. *Journal of Financial Economics*, 65(2), pp.167-201.
- Mishra, A. K., 2012. Underpricing of initial public offerings in India. *Journal of Investment Management and Financial Innovations*, 9(2), pp. 182-192.
- Pagano, M., Panetta, F. and Zingales, L., 1998. Why do companies go public? An empirical analysis. *The Journal of Finance*, 53(1), pp.27-64.
- Ritter, J.R. and Welch, I., 2002. A review of IPO activity, pricing, and allocations. *The Journal of Finance*, 57(4), pp.1795-1828.
- Roosenboom, P., 2007. How do underwriters value initial public offerings? An empirical analysis of the French IPO market. *Contemporary Accounting Research*, 24(4), pp.1217-1243.
- Sherman, A.E., 2005. Global trends in IPO methods: Book building versus auctions with endogenous entry. *Journal of Financial Economics*, 78(3), pp.615-649.
- Shiller, R.J., 1990. Speculative prices and popular models. *The Journal of Economic Perspectives*, 4(2), pp.55-65.
- Stoll, H.R. and Curley, A.J., 1970. Small business and the new issues market for equities. *Journal of financial and quantitative analysis*, 5(3), pp.309-322.
- Trauten, A. and Langer, T., 2008. Why the Google IPO Might Stay Exotic-An Experimental Analysis of Offering Mechanisms. *Published as: Trauten, A., Langer*, pp.361-388.
- Wilhelm, W.J., 2005. Bookbuilding, Auctions, and the Future of the IPO Process. *Journal of Applied Corporate Finance*, 17(1), pp.55-66.
- Zhang, P., 2009. Uniform price auctions and fixed price offerings in IPOs: an experimental comparison. *Experimental Economics*, 12(2), pp.202-219.