

# What Happened to the Investors of South Asian Countries While Investing in the Newly Listed Firms: A New Approach?

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**Abstract**—The study probes the comparable firm adjusted performance of newly listed firms in the south Asian countries, by using the new approach. The results show that the investors of south Asian countries can earn 73.46% returns on the first day of trading of newly listed firms. The market adjusted underpricing is observed to be 66.52% for the full sample of 519 IPOs. The comparable firm adjusted underpricing remains at 80.21% for the reduced sample of 331 IPOs, however, market adjusted underpricing remains a little bit lower (78.65%) as compared with the comparable firm adjusted underpricing. The level of underpricing is observed to be significantly higher in Bangladesh as compared with the other south Asian countries. India and Sri Lanka show the lower level of underpricing due to its book building mechanism.

**Index Terms**—South Asian, comparable firms, underpricing, tracking error.

## I. INTRODUCTION

First times issuance of securities to general public and institutions is called IPOs (initial public offering). One of the foremost objective of the firms is to raise funds by IPOs for the expansion of their business operations. Investors of IPOs, generally get positive higher returns on the first day trading of these newly firms, as a result, investors are motivated to subscribe in the shares of new firms. The overall process of IPO activities is monitored and regulated by their respective Security Exchange Commissions, like SECP in Pakistan.

The capital raised through initial public offering help the newly listed firm to grow and succeed. Generally, investors can gain marvelous and huge profits while new firms have to suffer losses in the form of underpricing. The managers and owners can unlock their position by selling their shares after the listing. There are different sources of financing, raised by the firms, however, IPOs remain the dominant source that can be the witnessed worldwide. In the last decade China's IPOs market show marvelous expansion after USA.

In south Asian countries, India remains at the top with 582 IPOs during 2000-12, clearly dominating the IPO market in the region. However, Bangladesh remains at 2nd, with 114 IPOs, while in Pakistan only 94 IPOs and Sri Lanka with lowest number of IPOs of 66. The south Asian countries show just 5.21% of the total IPOs in the world during 2001-13. In

south Asian countries, Indian's IPOs represent the 3.13% of the total IPOs in the world during 2001-13. The underpricing has been observed worldwide, however, it was measured by using market adjusted model. The average underpricing in USA was 12.1% in 2009. In UK, 16.9% (1959-2009). However, in China 137% of underpricing was found in 2010. [1] portrayed the underpricing in different countries; like Germany, Switzerland, Australia, , Finland, Malaysia Japan, Mexico, Sri Lanka, Thailand, Greece and Turkey with different numbers.

[2] reported underpricing in Asian countries as 202.63% in China, 70.30% in Korea etc. Significant underpricing is observed also in South Asian countries which is reported by [3]-[10]. [11] documented the underpricing of 14% in 1028 firms during the period of 1977-82. Recently [12] and [13] also reported different issues in IPOs activity. Similarly, [14] reported involvement of Directors in IPOs with regard to insider trading.

The objective of the present study is to analyze the performance of IPOs of south Asian countries to answer the questions about to what extent IPOs are underpriced / overpriced? And how risk adjusted performance of these IPOs under comparable firm approach behave? It is hoped that this study will not only provide the relevant information to investors in south Asian countries but also help the investors across the globe to get the advantages of underpricing while investing in south Asian countries.

## II. LITERATURE REVIEW

The discussion of performance of IPOs will be incomplete if one can omit the studies of Ritter. He has reported world-wide issues of underpricing and subsequent their underperformance in long run in his different studies. In contrast to other south Asian countries, there is deficient in literature of IPOs in the Sri Lanka. [3] while investigating underpricing in Sri Lanka then reported significantly higher underpricing in relation to developed countries. In Bangladesh [5] analyzed the underpricing while focusing on a sample of 90 IPOs. In Egyptian IPOs, [15] in Egypt IPO's reported the underpricing. However, in Pakistan IPO's the issue of underpricing has been investigated by [9] for the first time and reported underpricing of 35.66%. They also suggested different variables that can influence the underpricing.

The level of underpricing tends to diverge in different countries. An extensive literature review will pinpoint the comparison of underpricing across different countries. In

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Bangladesh the highest level of underpricing of 480.72% has been observed. [16] has quoted that underpricing in internet form's IPOs gets higher level up to 88.6% as compared with the 44.7% of underpricing in non-internet IPO firms. [16] also discussed while investigating the underpricing in south Asian countries focusing on period prior to 1997 found significant underpricing in Indian IPOs. [16] discussed the Indian IPOs while focusing on period of 2001-09 and discussed underpricing up to 32.92%. Recently [7] reported underpricing of 22.47% in India. He also documented that level of underpricing is decreased as the time passes. [17] reported the efficiency of IPOs in Pakistan. [18] investigated underpricing in Bangladesh equity market during 1995-2005 by focusing on 191 IPOs and reported level of underpricing up to 480.72%. The level observed is higher than results presented by [19]. By taking the sample of 113 firms in the period of 1984 to 2001, they reported the level of underpricing of 285% in Bangladesh.

[20] examined underpricing in Sri Lanka and found an average underpricing of 33.5% while choosing 116 IPO firms as sample during the period of 1987-2008. In developed markets; Canada, UK and US, etc. the issue of underpricing has been researched, comprehensively. 8.15% of underpricing of 1746 newly firms were reported by [21] in NASDAQ market in 1975-87, while [22] has reported it in Portugal. The author additionally reported that small firms shows higher underpricing than larger one as well as underpricing is higher in private IPO firms than conventional IPO firms. All the literature review suggests that the underpricing in natural phenomenon in the globe, however, only market adjusted model is used to calculate the level of underpricing. Current study for the first time using comparable firm technique in order to calculate the level of underpricing.

### III. METHODOLOGY

The overall 856 IPOs were listed in south Asian countries during the sample period of 2000-12 with India at top of 582 IPOs while Sri Lanka with lowest one of 66 IPOs. Due to unavailability of data of some IPOs the sample is reduced to 519 IPOs. Further, for comparable firm adjusted performance of these IPOs the data was further reduced to 331 IPOs. The first day return of each newly firm and corresponding return of market return is calculated. To calculate comparable firm adjusted returns, CAPM is used to calculate the expected returns for comparable firm. The criterion which is used to select comparable firm technique is used to check the likeness of newly firm with that of comparable firm. The results of tracking error get verified through the help of sample t statistics of difference of means.

To calculate expected returns in CAPM, first, betas are calculated through regressing excess returns of comparable firm over the excess market returns. The adjusted Betas are calculated under the new capital structure of newly firms. The level of underpricing (market adjusted and comparable firm adjusted) is calculated. The significance of the level of underpricing of each country and for the whole sample is tested by the t statistic model.

$$LoU_{i,1} = \{ [(1 + R_{ipo,1}) / (1 + R_{m,1})] - 1 \} \times 100 \quad 1$$

$$t = \left( \frac{1}{n} \sum_{i=1}^n LoU_{i,1} \right) / \left[ \frac{\sigma(LoU_{i,1})}{\sqrt{n}} \right] \quad 2$$

## IV. DISCUSSION OF RESULTS

### A. Descriptive Analysis

The increasing trend were found in IPOs activity during the period of 2000-2005 in Pakistan, while the same trend is observed in 2002 to 2007 in India. On average decreasing trend is observed in Bangladesh. The overall India is dominating in the south Asian countries. The overall 856 IPOs were listed in south Asian countries during the sample period of 2000-12 with India at top of 582 IPOs while Sri Lanka with lowest one of 66 IPOs.

### B. Underpricing: 1st Day Returns of IPOs

The underpricing is the difference between the market price at the first trading day of an IPO firm and the offer price. The substantial underpricing IPO firms is observed in south Asian countries. These results are highly significant at 1% level. The overall 73.46% of underpricing is to be observed in the region displayed in Table I. However, Bangladesh is the leading one, with 234% underpricing while Sri Lanka is the lowest one with 14.34% of underpricing. It gives not only tremendous return to the investors in the region, but, also invite foreign investors to have these biggest returns especially in the Bangladesh. These results validate the underpricing phenomena as reported in the earlier studies.

TABLE I: UNDERPRICING IN SOUTH ASIAN COUNTRIES

	Bangladesh	Pakistan	Sri Lanka	India	S. Asia
No. of IPOs	106	83	29	301	519
Underpricing	2.3412*	0.3277*	0.1435*	0.1832*	0.7346*
t-statistic	5.101	4.849	3.214	5.238	5.102
p value	0.000	0.000	0.000	0.000	0.000

\*Significant at 1% level of significance

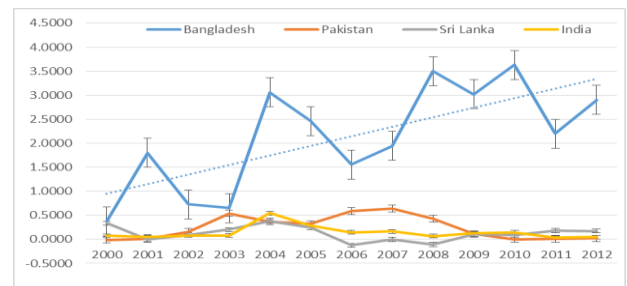


Fig. 1. Year-wise underpricing analysis in south Asian countries.

The year-wise underpricing can be visualized in Fig. 1. The linear trend line shows that the underpricing get increased in Bangladesh. Even, worst in year 2004 and then 2008 to 2010, where underpricing is observed to be greater than 300%. The underpricing remains greater than China in these years. On the other hand, rest of the south Asian countries, the underpricing remains at below the 65% in any year of the sample period. Some overpricing is observed in the year 2000 in Pakistan while 2008 and 2010 in the Sri Lanka. In contrast, no

overpricing is to be observed in any year of India. The amount of underpricing remains minimal in Pakistan in the last three years due to introduction of book building mechanism of IPOs. In the same line, in India, on average, the year-wise underpricing remains lesser due to higher issuance of IPOs through book building mechanism.

### C. Risk Adjusted Performance (Level of Underpricing)

The risk adjusted performance of newly firms is represented by the term level of underpricing, which indicates the adjusted returns of these IPOs on their first trading day. To calculate, level of underpricing, comparable firm methodology is applied. The significant level of underpricing is observed in all the south Asian countries for the entire sample period of 2000-12. The country-wise results are displayed in Table II.

TABLE II: RISK ADJUSTED, LEVEL OF UNDERPRICING (FULL SAMPLE)

	Bangladesh	Pakistan	Sri Lanka	India	S. Asia
No. of IPOs	106	83	29	301	519
1st day return	2.3412*	0.3277*	0.1435*	0.1832*	0.7346*
t-statistic	5.101	4.849	3.214	5.238	5.102
p value	0.0000	0.0000	0.0000	0.0000	0.0000
Market return	0.1819	0.0449	0.0342	0.0507	0.0725*
t-statistic	3.234	2.715	2.813	3.101	2.998
p value	0.0000	0.0000	0.0013	0.0001	0.0012
level of Underpricing	2.1593	0.2828	0.1093	0.1325	0.6652*
t-statistic	5.001	4.849	3.011	4.981	5.013
p value	0.0000	0.0000	0.0000	0.0000	0.0000

\*Significant at 1% level, \*\* Significant at 5% level and \*\*\* Significant at 10% level.

The overall, level of underpricing (market adjusted) in south Asian countries for the full sample of 519 IPOs is observed to be 66.52%, significant at 1% level with an associated t statistic of 5.013. The significant first day return of IPOs is observed to be 73.46% while the significant

average markets return remains at 7.25%. The analysis in the table prove the rejection of our null hypothesis not only country-wise but as a whole in the south Asian region.

On average, the amount of level of underpricing is increased as compared with Pakistan, India and Sri Lanka while decreased in Bangladesh. Overall, country-wise, the level of underpricing is decreased. Earlier, in Pakistan, [9] found level of underpricing to be as 35.66%. These results of level of underpricing are consistent with the earlier studies across these south Asian countries. After China, Bangladesh shows sever underpricing. That ultimately attract the investors to enjoy the high returns even greater than 300%, while investing in the new issue.

In broad analysis, 121 new IPO firms show overpricing representing 23.31% of the full sample (121 IPO firms from 519 IPO firms). These results suggest that the investors earn negative market adjusted returns of 15.83% on the first trading day, however these results are not significant. On the other hand, 398 new IPO firms show underpricing representing 76.69% of the full sample (298 IPO firms from 519 IPO firms), suggesting positive market adjusted return of 82.45%. Nevertheless, together, all 519 IPO firms presents positive market adjusted return of 66.52% to the investors in the south Asian countries, showing investors can earn profit through IPOs.

To compare the results through market adjusted model and comparable firm adjusted model, the level of underpricing by market adjusted model for reduced sample is presented in Table III. The significant level of underpricing is also observed in the south Asian countries as whole as well as country-wise. The overall, level of underpricing (market adjusted) in south Asian countries for the reduced sample of 331 IPOs is observed to be 78.61%, significant at 1% level with an associated t statistic of 4.782. The significant first day return of IPOs is observed to be 84.91% while the significant average markets return remains at 5.11%. The analysis in the table prove the rejection of null hypothesis not only country-wise but as a whole in the south Asian region.

TABLE III: RISK ADJUSTED, LEVEL OF UNDERPRICING (REDUCED SAMPLE)

	Bangladesh	Pakistan	Sri Lanka	India	S. Asia
No. of IPOs	65	61	21	184	331
1st day return	2.6421*	.4430*	0.1529*	0.1944*	0.8491*
t-statistic	5.521	5.123	3.429	5.103	4.874
p value	0.0000	0	0.0000	0.0000	0.0000
Market return	0.0742**	.0303***	0.0236**	0.0496*	0.05113*
t-statistic	3.416	1.889	2.623	2.997	2.739
p value	0.0103	0.0501	0.0423	0.0012	0.0000
level of Underpricing	2.5621*	.3964*	0.1231*	0.1455*	0.7865*
t-statistic	5.729	5.117	2.982	4.782	4.782
p value	0.0000	0.0000	0.0000	0.0000	0.0000

\*Significant at 1% level, \*\* Significant at 5% level and \*\*\* Significant at 10% level.

The comparable firms analysis for predicting the future returns are used. First the similarity of an IPO with comparable firm is tested by tracking error and was observed

to be 0.03041 (<.05), validating the criterion of true proxy.

The results are further validated by t statistics of difference of means of IPOs and comparable Firms. The results are

displayed in the Table IV.

TABLE IV: T STATISTICS OF DIFFERENCE OF MEANS OF IPOs AND COMPARABLE FIRMS

	Bangladesh	Pakistan	Sri Lanka	India	S. Asia
No. of IPOs	65	61	21	184	331
IPO firm's assets (mean)	24125.87	33461.68	15134.72	131370.6	51029.24
Comparable firm's assets (mean)	24612.66	34136.84	15361.58	132870.8	51748.23
Degree of freedom	128	120	40	366	660
Difference of means	-486.79	-675.16	-226.86	-1500.27	-718.99
t-statistics	-0.029	-0.034	-0.031	-0.0621	-0.0396
p values	0.9610	0.973	0.9610	0.9230	0.9555
F test (equal variances not assumed)	0.0038	0.004	0.0051	0.0062	0.0049
p values	0.94	0.95	0.931	0.933	0.939

\*Significant at 1% level, \*\* Significant at 5% level and \*\*\* Significant at 10% level.

The CAPM is used to calculate the expected returns for comparable firms by using event methodology. The betas are adjusted according to methodology to get the expected returns by CAPM.

The average expected return of comparable firms remains at 6.01% which is marginally higher than the market return calculated on the reduced sample. The average D/E ratio of

IPO firms is observed to be 1.5152 while average D/E ratio of comparable firms remains at 1.9238. The average adjusted beta of comparable firm remains at 0.813 less volatile than market. In the market adjusted model the beta of IPO firm is assumed to be one; that is not considered to be an accurate. This supports the comparable firm technique to calculate the true beta of an IPO firm.

TABLE V: RISK ADJUSTED, LEVEL OF UNDERPRICING (REDUCED SAMPLE); COMPARABLE FIRM

	Bangladesh	Pakistan	Sri Lanka	India	S. Asia
No. of IPOs	65	61	21	184	331
1st day return	2.6421*	.4430*	0.1529*	0.1944*	0.8491*
t-statistic	5.521	5.123	3.429	5.103	4.874
p value	0.0000	0	0.0000	0.0000	0.0000
Comparable firm returns	0.2013**	.0199***	0.0123***	0.0231*	0.06012*
t-statistic	3.214	1.591	2.517	2.782	2.815
p value	0.0512	0.10015	0.0721	0.0203	0.0000
level of Underpricing	2.4324*	.4234*	0.11398*	0.1702*	0.8021*
t-statistic	5.6128	4.3801	2.881	4.6713	4.5623
p value	0.0000	0.0000	0.0000	0.0000	0.0000

\*Significant at 1% level, \*\* Significant at 5% level and \*\*\* Significant at 10% level.

The significant level of underpricing is also observed in the south Asian countries using comparable firms. The level of underpricing is found to be 80.21%, significant at 1% level with an associated t statistic of 4.5623, displayed in Table V. The amount of level of underpricing is increased marginally as compared with the market adjusted return model. It further elaborates that investors can earn significant risk adjusted returns against the same type of comparable firms while investing in IPO firms. Overall the comparable firm risk adjusted performance of these IPO firms increased taking account for market factor under capital asset pricing model in India, Pakistan and South Asian Countries as whole. However, this risk adjusted performance of IPO firms decreased in Bangladesh and Sri Lanka. By comparing the two models, 1.56% level of underpricing is observed to be higher under comparable firm than market model.

## V. CONCLUSION

The overall 73.46% of underpricing is to be observed in the region of south Asian countries with Bangladesh is the leading one, with 234% underpricing while Sri Lanka is the lowest one with 14.34% of underpricing. The year-wise underpricing analysis, the underpricing gets increased in Bangladesh, even, worst in year 2004 and then 2008 to 2010, where underpricing is observed to be greater than 300%. On the other hand, rest of the south Asian countries, the underpricing remains at below the 65% in any year of the sample period. The amount of underpricing remains minimal in Pakistan in the last three years due to introduction of book building mechanism of IPOs. In the same line, in India, on average, the year-wise underpricing remains lesser due to higher issuance of IPOs through book building mechanism.

The overall, level of underpricing (market adjusted) in south Asian countries for the full sample of 519 IPOs is observed to be 66.52% while 78.61% for the reduced sample. On average, the amount of level of underpricing is increased as compared with Pakistan, India and Sri Lanka while decreased in Bangladesh. Overall, country-wise, the level of underpricing is decreased.

The level of underpricing under comparable firm criterion is also observed in the south Asian countries and is found to be 80.21%. The amount of level of underpricing is increased marginally as compared with the market adjusted return model. It is to be noted that investors can generate significant risk adjusted returns against the same type of comparable firms while investing in IPO firms. Overall the comparable firm risk adjusted performance of these IPO firms increased taking account for market factor under capital asset pricing model in India, Pakistan and South Asian Countries as whole. However, this risk adjusted performance of IPO firms decreased in Bangladesh and Sri Lanka. By comparing the two models, 1.56% level of underpricing is observed to be higher under comparable firm than market model. However, the results of two models are consistent.

The investors are recommended to buy the shares of new firms as it gives not only tremendous return to the investors in the south Asian countries, but, also invite foreign investors to have these biggest returns especially in the Bangladesh. Regulatory authorities should focus on new IPO firm in order to reduce the level of underpricing to adopt book building process. For future research, the prospectus data can be used to predict the level of underpricing if some follow the use of artificial intelligence and machine learning as proposed in many studies like [23]-[27].

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