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A Review of IPO Underpricing: Evidences from Developed, Developing and Emerging Markets

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Abstract

The empirical evidence of high initial return from Initial Public Offerings (IPO) phenomena known as underpricing. From last three decades, it is an ongoing issue of every financial market throughout the world. We review underpricing research in developed, developing and emerging markets. In this regard, a thorough review of existing literature has been done. In result, higher underpricing of IPOs is found in emerging markets than developing and developed market because in emerging market issuer of IPOs takes underpricing as a signal of their quality IPOs, where information asymmetry is a significant element. Furthermore, based on the review, we managed to pinpoint significant factors that influenced the initial return. However, scale of underpricing among different countries varies depending on the factors, discussed in detail. Various theories and proposition have developed in these three markets to elucidate the phenomena of underpricing. We believe that there exist few factors that could be used as the primary determinants of IPO underpricing in future. These factors are country specific environment, micro and macro-economic factors, quality of legal framework based on listing regulations, and socio-political factors and marketing of IPO, which could provide a promising area of research.

Keywords: Initial Public Offerings; Underpricing; Information Asymmetry; Investor Sentiment

1. Introduction

First-time sale of a firm's equity shares, to the general public, in a primary market is called Initial public offering (IPO) (Brealey et al., 2008; Jung et al., 1996). All the listed firms undergo IPO and play important role as capital provider for listed companies. From the last three decades, massive numbers of theoretical and empirical studies have been conducted on the phenomena of IPO initial return across the world. Underpricing of IPO's is one of the puzzles, where issuer left money on the table and investors get reward from return. It is the first documented issue in the primary market by Ibbotson (1975), Logue (1973), Stoll and Curley (1970) reported positive abnormal initial return in U.S IPO market. In many different countries underpricing of IPO has been documented where the literature proven that U.S is not exclusive market alone with this puzzle.

In various countries, researchers tested and most of them confirmed positive initial return in around the world. To analyze the difference between countries Loughran et al. (1994) conducted a study on 25 countries with average initial return from the period of 1960 to 1992. This study argued that underpricing phenomena is existed in every country. Former studies explained the various stages of underpricing across the country due to their country mechanism and also based on firms' characteristics. Further, they argued that countries having high initial return are tends to be those countries where institutional settings are very weak. The list of these countries is in Asia such as Jordan, Saudi Arabia, China, India and Malaysia that has 149%, 239%, 118.40% 88.5% and 56.20% initial return respectively. In contrast Canada, France, and Netherlands are found to have lowest initial return that is below than 10.0% because these countries have strong institutional and firms' characteristics. Underpricing of IPOs' is a potential area of research and identified as composite nature. Based on the current phenomenon that is associated with the high initial return from the IPO trading on day one and it has been commonly reported in almost every financial market across the globe (Engelen & Van Essen, 2010; Loughran et al., 1994; Lowry et al., 2017). Grounding the review of IPO trading, the pattern of high initial return cannot be ignored. We believe that determining factors of IPO initial return, plays a bigger role in explaining the issue pertaining to underpricing.

Our study seeks to review underpricing phenomena through different explanations that is still contentious and also weighs with personal perspective. Backed by theories and considering empirical evidence, we believe that there is a need to more emphasis ongoing issue of underpricing. This phenomenon of underpricing varies due to the impact of the study duration, methodological issues, listing regulations exchange, new issue size, underwriter involvements, information asymmetric, economic conditions, economic slump, government interference and hot/cold market. Further we argued that the primary determinants of fluctuations in the underpricing of IPO's is the information asymmetry. Instead we strongly believe that, in future studies, agency explanation will play a vital role based on how IPOs share are allocated to primary and secondary investors. Hence, IPO marketing is the most attractive issue in today's IPO research.

IPO's Underpricing is identified in three financial markets; namely developed markets, developing markets and emerging markets. However, underpricing level and their determinants are different among all three markets, so we believe that there is a need to review the literature and to identify the future research agenda. Regarding the IPO underpricing interesting empirical studies had motivated to researchers to develop various theoretical models to explain the most puzzling phenomenon of IPO; researchers put new hypotheses to explain further reasons of such phenomena. Therefore, in result further empirical studies motivated to test the new implications that are associated with various theoretical studies and research findings explained that performance of IPOs is significant for the issuers, underwriters and investors. In a nutshell, these studies summarize underpricing issue and show the patterns that have been focused empirically and theoretically in previous literature.

In this paper, overall market comparison is provided based upon three categories of market by FTSE Russell (2018) such as developed, developing and emerging market. Generated results from this study shows the trend of IPO underpricing phenomena and identified determinants to suggest future pinpoint factors. We believe that some more factors are still there which could be studied as primary determinants of IPO underpricing in future. These factors are country specific environment, micro and macro- economic factors, quality of legal framework based on listing regulations, socio-political factors and marketing of IPO. Prospective investors will be able to take prudent decision while investing in IPOs for future long run return. Remaining paper is organized to elaborate the IPO's underpricing anomaly and next section provides objective, measurement of underpricing and an overview of developed, developing and emerging markets underpricing trend along with their determinants.

2. Objectives of the Study

Present study reviews the available literature of IPO's underpricing by initiatives to undertakes the following objectives:

I. To find out IPO's underpricing intensity in developed, developing and emerging markets.
II. To highlight important factors of IPO's underpricing in developed, developing and emerging markets.

3. Measurements of IPO Underpricing

Market performance in initial public offerings, is measured through the stock returns. Several methods are there that can be used to measure the IPO underpricing for instance previous researches such as (Aggarwal & Conroy, 2000; Barry & Jennings, 1993; Bradley et al., 2009; Chang et al., 2008; Chorruk & Worthington, 2010; Schultz & Zaman, 1994) used IR, MAIR, UPH, UPIL, UPLMV, and UPLIP to measure IPO's short run performance. The present study shows the all measurements that has used previously to determine IPO underpricing. However, IR, and MAIR is the maximum used methods in previous studies because these measurements illustrates significant differences in price at the very opening and closing of first day of trading and also known as the closing price performance and another four method to measure IPO underpricing is used by Habib and Ljungqvist (1998) and (da Silva Rosa et al., 2003).

$$IR_{i,t} = \frac{P_{i,1} - P_{i,0}}{P_{i,0}}$$

where:

IR_{it} = the initial return of the $stock_i$ at $period_t$

$P_{i\,0}$ = the IPO offer price of the $stock_i$ as stated in the IPO prospectus

P_{i1} = the closing price of the $stock_i$ at the end of the first day of trading

The formula above does not consider any changes in the market conditions or in the stock exchanges which may affect the initial returns. For that reason, many researchers alternatively use the following formula, where the returns are adjusted to the market changes.

$$MAIR_{i,t} = \left[\frac{P_{i,1} - P_{i,0}}{P_{i,0}} - \frac{MI_{i,1} - MI_{i,0}}{MI_{i,0}}\right]$$

where:

MAIR= the initial return of the $stock_i$ adjusted to the market effect of the corresponding stock exchange for $period_t$

$MI_{i,o}$ = the closing price of the general market index of the stock exchange where $stock_i$ is listed at offering day of the stock

$MI_{i,1}$ = the closing price of the general market index of the stock exchange where stock i, is listed at the end of the first day of trading Most of the studies use the simple initial returns as a measure of underpricing, though the adjusted initial returns is a better measure of underpricing in cases where time interval between the offering day and the first day of trading is quite long.

$$UPH = \frac{(P_c - P_i)}{P_i}$$

where

UPH= is the initial performance of IPO by using closing pricing of trading day

P_c= closing price of the day one trading

P_i= company issue price

UPIL is used where strategic shareholders are also the owners of firms and they are equal to 100% minus by the percentage in the free float and free float is the portion that are not held by strategic shareholders and not reacquired by the issuing company. This method is used when subsequent changes in ownership structure occurred after the closing date of general meeting every year.

$$UPIL = (1 - StrategicShareholders) \times \frac{(P_c - P_i)}{P_i}$$

After UPIL, underpricing loss by market value (UPLMV) is the third underpricing measurements to identify loss by the firms at the market value in which strategic shareholders, secondary shares and primary shares holders are including to identify the overall impact of security.

$$UPLMV = \frac{(P_c - P_i) \times (Secondary shares + Strategic shareholders \times Primary shares)}{P_c \times Total shares}$$

Finally, IPO underpricing will be measured through UPLIP which shows the loss of issue price that actually shows the total loss to the issuers by the value of the firm based on offer price, according to the formula all of the owners are involved in this measurement where, secondary shareholders are the pre-IPO shareholders and primary are new shareholders in IPO.

$$UPLIP = \frac{(P_c - P_i) \times (Secondary shares + Strategic shareholders \times Primary shares)}{P_i \times Total shares}$$

4. Existing Studies Literature

Initial return of IPOs in developed markets

The literature presented in this section provides several studies that attempted in the developed market to identify the most influencing factors of underpricing. The study of Austria, Belgium Canada, and Denmark, by Banerjee et al. (2011) who examined the various sample of IPOs and found initial return 23.76%. 10.36%, 39.9% and respectively 13.48%. In addition, study of listed securities at Portuguese stock exchange, by Isola et al. (2014) who examined the initial underpricing in Euro next Lisbon companies from 1990- 2010 of 28 IPOs. They found that first day trading abnormal initial return of 32.428% in the global financial crisis period. In line with this, underpricing of IPOs in UK was examined by Coakley et al. (2009) with a sample of 591 IPOs from 1985-2003 listed at London Stock exchange they found 10.50% initial return. In another study covering UK by Belghitar and Dixon (2012) they compared the performance from Venture backed sample of IPO and non-venture backed IPO, it is argued that VC-backed IPOs are less underpriced.

Listed IPOs on Stockholm Stock exchange study by Henricson (2012) who studied underpricing of IPOs in Sweden using a sample of 185 IPOs and found 11.49% of initial return.

Another study of Sweden by Bodnaruk et al. (2007) used 124 IPOs from 1995 to 2001 and documented 14% initial return. Further explored in Finland, Hahl et al. (2014) examined performance of growth and value stock of Finnish IPOs and found initial return of 15.60%. This study argued that growth related stock of IPOs is more underpriced with high initial return. Moreover added by Rupawaththa and Gunasekara (2016) they examined 254 Australian listed IPOs by industry and year during 2006 to 2011 and found abnormal initial return of 23.11% from primary and total market respectively. Furthermore, underpricing of IPO from Japan by Hamao et al. (2000) they examined the first trading day return of IPO and found 15.7%% initial return by using 355 IPOs from 1989-1994. In another covering study of Japan by Nagata (2013) who addressed the earnings management and underpricing by using a sample of 1476 IPOs from 1989-2005 and found 45.4% initial return on first trading day. This study argued that high earnings management during IPO period tends to have more underpricing.

Further explored in Hong Kong, Korea and Singapore, underpricing of IPOs by Moshirian et al. (2010) they advocated initial return of 21.43%, 70.30%, and 33.10% respectively. The USA IPO market has been studied extensively by many of researchers from last three decades, For instance, Johnston and Madura (2002) examined the 366 internet versus non-internet based IPOs from 1996-2000 and found initial return of 78.5%. Accordingly, Loughran and Schultz (2006) and Ritter and Welch (2002) examined first trading day return and reported 18.1% and 18.8% respectively. Whereas, in the recent study of USA by Guo et al. (2017) by using a sample of 208 biotechnological IPO from 1997-2012 and reported 12% initial return. Hence, US market has lowest initial return in developed countries.

Significant determinants of IPOs underpricing in developed markets

Many explanations that have been offered in developed market to mitigate the worldwide phenomena of underpricing. For instance, In Australia, Perera and Kulendran (2016) describe that there are variation in short run performance due to listing years, issue years and industry influence. In Australia, period of IPO's, listing time and delays, total net proceed ratio, and market volatility are very significant determinants of underpricing. Moreover, focuses on Australian IPO determinants which explained that Issue and market characteristics are more important than the firm characteristics. In another study covering from Australia Dimovski et al. (2011) they found that there exists an association between high underpricing, prestigious underwriters, market sentiment, share options, total capital raised and underwriter options. Further, Dempere et al. (2014) found that IPO underpricing and marketability discount are positively associated with each other. However, there exists a negative association between level of IPO underpricing and the time period between IPO date and last pre-IPO transaction. In Europe, Coakley et al. (2009) found higher underpricing is associated with venture capitalist and prestigious underwriters in bubble period of 1998 to 2000 and it is advocated that previous market condition of UK is in positive relationship with high initial return of first trading day. In another study covering in Europe by Belghitar and Dixon (2012) they explained the comparison of venture back firms versus non-venture capital back firms, and it is found that venture backed capital IPOs are less underpriced because venture capitalist reduce uncertainty, and it is negatively associated with underpricing. Bradley and Jordan (2002) found that offer price reflects public information, and underpricing can be predicted from public information. Moreover, true determinants of underpricing are venture capital backing, file range amendments, share overhang and lagged average initial return. Habib and

Ljungqvist (2001) found that underpricing increases when offer price surpasses from center of the filling range, whereas, an inverse relationship of underpricing is seen with participation ratio and promotion cost. They also found that fee, age and leverage of underwriting sales are in significant relationship with underpricing. Furthermore, study of Loughran and Ritter (2004) found that true determinants of underpricing of IPO are assets, age, top tier underwriter, ratio of shares retained. They reported that share overhang has a positive significant on underpricing of IPOs and negative association of assets and age on IPO underpricing. Zheng et al. (2005) investigated the influencing factors of initial return of IPO and it is found that offer price revision, time series auto correlation of first day trading return, market return, offer size, retention and market share of underwriter.

In Austria, Banerjee et al. (2011) examined initial return of IPO and it is found that stock market return, stock price and country level analyst are positively associated with higher level of underpricing of IPO. They also conclude that IPO's underpricing is the cost for home country bias (offer size, book building, hot/cold IPO, stock turnover, prospectus liability index) and anti-self-dealing. In Canada, Kooli and Suret (2002) investigated underpricing of IPO and found that higher underpricing is positively associated with market condition and prestigious underwriter. Early studies in UK by Brennan and Franks (1997) found that in the share allocation process underpricing increases oversubscription. Japan is one of the most developed country in the world, study by Hamao et al. (2000) identified that ratio of subscription, age, book to market, gross proceed and venture capital backed IPOs are true determinants for predicting high initial return on first day of trading. Nagata (2013) attempted to explore the favorable price formation by earnings management for more underpricing. It is found that during IPO period, firms with intensive earnings management seems to be more underpricing and stocks are sold on high price after manipulating earnings. In Hong Kong underpricing of IPO of family firms investigated by Yu and Zheng (2012) they found that high involvement of family is tend to have larger underpricing in IPO, because family owners attract more subscription of IPO share and family owners utilize underpricing for reducing block holding. Moreover, in comparison with trust-controlled firms seems to have less underpricing of IPO and it is suggested that family trust oriented are most suitable method for family control.

In the USA, Guo et al. (2017) biotechnology IPO industry, the findings explained negative relationship between strategic alliances with underpricing because IPO prospectus cannot give clear information to investors. Moreover, this study expressed the importance of understanding and disclosures into IPO company prospectus. In another study covering by Boulton et al. (2010) found that those countries have strengthened the investor position relevant to insider having high initial return. Posts IPO outside block holdings are negatively associated with underpricing and private control benefits are positively associated with underpricing. In addition, they used firm's level variables and country level variables, and found that smaller IPOs, book build IPOs, IPOs underwritten by banks have great influences on higher underpricing. On the other hand, in country level variables they found that stock market return is positively related to high underpricing.

In USA Cai et al. (2011) examined underpricing of private placement IPOs and found that private placement IPOs are less underpriced than peers and it is associated with lower underwriting spreads, high reputable underwriting syndicates. Brau et al. (2016) investigated the impact of soft information from USA listed IPOs and found that documents of IPO strategic tone positively associated with high first day return because positive or negative strategic words causes of more IPO underpricing in USA. Bajo and Raimondo (2017) found that during an IPO media play very important role in conveying information to investors, because IPO related information may shape retail investors and generate high demand for IPO and consequently high initial return on first day of trading. Moreover, positive tones are significantly related to IPO underpricing and effect from news become more when it is close to the IPO date by most reputable newspapers. Dimovski et al. (2017) underpricing of IPOs in USA real estate investment trust examined, and it is found that there exists an association between higher underpricing and higher underwriting cost. Furthermore, large capital raising requirement leads to higher underpricing.

In another study covering by Sherman and Titman (2002) who investigated that how underwriters choose investors who participate in the book building process. So far if large numbers of investors are participating at the result underpricing increased. More specifically, this study found that high needs of price accuracy lead to more underpricing of IPOs because book building pricing mechanism is not very fair and small investors exclude to participate, therefore, these determinants increases underpricing. According to Wang and Wan (2013) private and corporate VC firms have numerous effects on underpricing because of different interest, resources and motives that is explained by multiple agency and resource-based theories. As corporate VC firms are strategic oriented comparatively private VC are financially oriented. Therefore, it is found that corporate VC ownership is not significant with underpricing however; there exists a positive relationship between private VC ownership and underpricing. Park and Patel (2015) investigated the relationship of ambiguity or unclear information with IPO underpricing. It is found that those IPOs prospectus hold more unclear or ambiguous information has higher underpricing. Whereas, the prospectus with clear and less ambiguous information has less underpricing because clear information conveys true signals of quality IPO. Furthermore, ambiguity is positively associated with IPO underpricing. In nutshell, despite the different determinants on IPO underpricing, yet there is a lack of studies done on the management literature. As a result, the future research could explore the management perspective such as managerial compensation, management structure in influencing IPO underpricing. We address this gap in the literature of underpricing.

Initial return of IPOs, in developing markets

The literature presented in this section provides developing markets various studies that attempted to evaluate underpricing issue as mentioned in table 1.0 which shows the tremendous return of IPOs in developing markets. Underpricing of IPOs in Mexico by Eijgenhuijsen and Valk (1997) examined the initial return of 51 IPOs during 1991-1994 and found 3.54% initial return, which is less than Argentina. Another study of Mexico by Boulton et al. (2011) they found 7.69% initial return at first day trading of IPO by using 11 IPOs from 1998-2008. Listed IPOs on Johannesburg Stock Exchange, study of Van Heerden and Alagidede (2012) they examined underpricing of IPOs and reported that underpricing phenomena breadth and depth is various from sector to sector, country to country. This study used 138 South African IPOs from 2006 to 2010 and found abnormal initial return of 108.30% and reported that financial sector has largest IPO underpricing.

In Istanbul Stock Exchange, Kucukkocaoglu (2008) found significant abnormal initial return 7.01% from fixed price method and 11.47% with book building mechanism. In the same veins, Jewartowski and Lizińska (2012) examined the IPO performance on Warsaw Stock Exchange of Poland from 1998-2008 and found abnormal initial return of 13.95%. The underpricing of Brazilian IPO by Avelino (2013) who examined the treatment of information by underwriters through the IPO pricing mechanism by using 129 IPOs during 2004-2011 and found first day of trading return 4.79%. Moreover, Agathee et al. (2012) investigated Mauritius underpricing of IPOs by using44 IPOs from 1989-2005 and found first day trading return of 13.14%. Listed IPOs on Stock Exchange of Thailand (SET), underpricing of IPOs examined by Chorruk and Worthington (2010) from 1997 to 2008 and found 17.60% on the first trading day of IPO. Furthermore, Boonchuaymetta and Chuanrommanee (2013) used the sample of 153 IPOs to investigate the underpricing issue in Thailand market from 2001-2011 and found 18.03% initial return on first trading day. A recent study of Soongswang (2017) investigated IPO performance in Thailand stock market and documented 51.01% high initial return on first day of trading by using a sample of 123 IPOs from 2003 to 2015. Whereas, underpricing of IPOs in Busra stock exchange Malaysia has reported 99.25% by Jelic et al. (2001) through using a 182 IPOs from 1980-1995. Further explored by Rashid et al. (2014) they documented 29.44%.

Significant determinants of IPOs underpricing, in developing markets

Engelen and Van Essen (2010) explored the role of country specific characteristics named as country legal and institutional framework and their relationship on level of underpricing in the developing countries, like Argentina, Brazil, Finland, France, Mexico, Portugal and Switzerland. It is found that there is positive relationship of ex-ante uncertainty and level of underpricing.

It is found that countries with weaker legal protection system are unable to protect their investors, so they face more uncertainty risk on their investment to meet required rate of return and higher underpricing. Hence, strong legal system leads to lower cost of going public in the country and role of legal and institutional framework causes lower cost of equity financing. Therefore, the difference in level of underpricing is due to variation in the legal framework. In South Africa, study by Van Heerden and Alagidede (2012) found higher underpricing in financial sector of South Africa. It is found that in Johannesburg stock exchange large shares are higher underpriced compared to lower shares of IPOs. Further explored by Correia and Holman (2008) they investigated the IPO underpricing of listed securities South African Alternative Exchange and found that there is a higher underpricing of IPOs in development capital market than alternative market. Accordingly, it is found that there is a negative association of age, proceeds and firm size on IPO underpricing. According to Satta (2017) underpricing of IPO explored in port industry, and found that transaction features, country specific variables, and firm characteristics are true determinants of IPO initial return. This study is based upon 58 Port IPOs on international stock exchanges. This study suggested that, in the underpricing phenomena of Port domain, involvement of institutional investors helps to reduce underpricing by giving the intrinsic characteristics in Port investment. Boulton et al. (2017) investigated variation in cross country underpricing of IPOs by exploring the accounting conservatism. It is found that those countries firm applied more practice of accounting conservatism faced less underpricing. Furthermore, higher underpricing reduces from the practice of accounting conservatism that mitigates the flow and impact of information asymmetry, it is found that IPO underpricing have a negative relationship with conservatism, and therefore, accounting conservatism relation influences underpricing.

Underpricing of Mauritius listed IPOs examined by Agathee et al. (2012) and found that there is a significant positive association of aftermarket risk level, auditors reputation with

high initial return and ex-ante financial strength has negative association with high initial return. Further added the idea of underpricing of IPO in Brazil by Avelino (2013) who examined the treatment of information in IPO pricing process comes from the underwriter in Brazil. It is found that information during book building period effect offer price partially upward or downward. Therefore, first day of return on day is easy to predict upon available information. Increase issue priced from the mid-range is directly significant with the higher initial return of IPO. In Thailand IPO performance examined, by Ekkayokkaya and Pengniti (2012) they attempted to explore the governance reform to protect investor interest. In the post reform, lower price protection is linked with absolute control of retention. However, higher underpricing was found before governance reform when insider has controlled of ownership. In addition, Boonchuaymetta and Chuanrommanee (2013) found that issuer size, industry, lock up period, and hot issue of market have a positive significant association with underpricing. Furthermore, underwriter reputation does not show any influence on underpricing, but institutional investors are key player of market with their limited role.
Malaysia explored underpricing issue and Bakar and Uzaki (2012) found that offer size, company age, issue price and type of industry offering IPOs are most explaining variables in the level of underpricing in Malaysian Stock Exchange. Further explored by Jelic et al. (2001) on underpricing issue and found that market return, operating history and net assets are associated with high first trading day return. Similarly, Yong and Isa (2003) found that oversubscription is one of the most influencing determinants of high initial return of IPO in the Malaysian market. Whereas, study by Wan-Hussin (2005) discussed that owners participation ratio is negatively related but fraction of directors share is positively related with underpricing. Moreover, in further discussion offer size, oversubscription and lock up provision is significantly associated with underpricing. Yong (2011) found that in a private placement there is a higher initial return on starting trading days because of high involvement of informed (institutional) investor and indicates the bandwagon effect. In line with this, Wong et al. (2013) found that premarket demand of IPO, institutional and sponsor ownership, underwriter reputation and stock volatility are true determinant of underpricing. In the recent study of Wong et al. (2017) found that most influencing variables of underpricing are underwriter status, reciprocal of IPO price, size of IPO and market volatility. In nutshell, most of the literature focus on the information asymmetry and ownership role in signaling the underpricing. A number of scholars have devoted to understanding the imperfect information during the listing. We would like to highlight the literature related to microeconomics may have a potential avenue for future research.

Initial Return of IPOs, In Emerging Markets

The presented literature in this section provides emerging market IPO underpricing issue that has been widely discussed. Since from establishment in 1991, China stock market is one of the fastest growing market in the world, and second biggest market in entire Asia. In line with this, Tian (2011) examined the Chinese IPOs and found 247% of high underpricing. Further explored by Song et al. (2014) examined the underpricing and overpricing and reported 66% high initial return as underpricing and 14% to 53% overpricing respectively, by using a sample of 948 IPO during 2006 to 2011. In another study covering in China by Pu and Wang (2015) and Xu et al. (2017) reported initial return of 108.34% and 93% respectively.

The Indian IPO market has been studied extensively by researchers, Pande and Vaidyanathan (2007) explained that first day initial return 22.62% by using the sample of 55

IPO from 2002-2004. In line with this, Sahoo and Rajib (2010) studied the IPO underpricing in Indian market and found 46.55% initial return by using 92 IPOs from 2002-2006. Another recent study by, Bansal and Khanna (2012) and Dhamija and Arora (2017) documented initial return 73.13% and 22% respectively. Listed IPO stock on Argentina market, 20 IPO used in the study of Eijgenhuijsen and Valk (1997) and examined initial return of 4.42% during 1991 to 1994. Further explored by Boulton et al. (2011) found 1.43% initial return at first day trading of IPO. Cyprus IPO underpricing study by Gounopoulos et al. (2007) found 20.81% initial return. Listed IPOs on Egyptian Stock Market study of Omran (2005) who examined the initial return of 53 privatization IPOs between 1994-1998 and found8.40% first trading day return. Underpricing of IPOs in Sri Lankan stock market by Samarakoon (2010) who investigated 105 IPOs during 1987-2008 and found 34% initial return of first trading day. Similarly in Nigerian stock exchange study of IPO by Adjasi et al. (2011) they found 43.1% initial return during 1990-2006. Likewise, in North Africa region namely Morocco study by Hearn (2014) examined of 86 IPOs and found 18.94% initial return from 2000 to 2013. Listed IPOs on Pakistan stock exchange study by (Javid & Malik, 2016; Mumtaz & Ahmed, 2014) reported initial return of 30.30%, and 23.20% respectively.

In Indonesian stock market, IPO underpricing has been discussed widely. For instance, study of Suherman (2011) documented 50.53% initial return on first trading day. Further explored by Darmadi and Gunawan (2013) who reported 20.22% initial return from 2003-2011, moreover, from the recent study of Utamaningsih (2017) investigated 265 IPOs during 1990 to 2008 and found 39.90% underpricing. Bangladesh IPOs underpricing by Hasan and Quayes (2008) investigated 90 IPOs from 1991 to 1997 and found 108% initial return on first day of trading. Furthermore, Islam et al. (2010) examined the level of underpricing in Chittagong stock exchange Bangladesh. This study indicates over all 480.71% that is highest underpricing in entire Asia. In Saudi Arab and UAE study by Alanazi and Al-Zoubi (2015) investigated first day of initial return and found 264.5% and 288.7% respectively. Meanwhile, in Gulf countries Al-Hassan et al. (2010) documented highest underpricing of 290%. However, based on the empirical studies it is found that emerging markets have highest underpricing compared to developed and developing markets.

Significant determinants of IPOs underpricing in emerging markets

In emerging market various studies have offered varieties of explanation and this discussion is starting from Chinese listed IPOs where highest underpricing is investigated. In the recent study by Xu et al. (2017) they explored the board room heterogeneity, where educational background, age, tenure, and functional background influences the underpricing of IPO for newly listed entrepreneurial firms. However, it is found that there is a significant negative correlation between functional heterogeneity, age heterogeneity with IPO underpricing, but there is a positive association between functional heterogeneity. Moreover, it is found that functional, educational and age heterogeneity is the sources of signals to potential investors for firm quality and meanwhile heterogeneity of board influence IPO underpricing. Likewise, Pu and Wang (2015) explored the book building implementation of listed IPOs in Shanghai Securities Exchange. It is found that during 2003-2007 book building implementation for offering price noticed higher underpricing than fixed price method. The possible reason is that underwriters have total discretion of allocation of shares. In line with this, Song et al. (2014) investigated underpricing and overpricing in China listed IPOs and found different determinants of underpricing and overpricing. As per the concern of underpricing it is found that for high initial return, value uncertainty and underwriter reputation and new regulation of pricing is positively significant with IPO underpricing. Tian (2011) investigated underpricing of IPO from 1992 to 2004 listed on China market and found highest underpricing of 247%. However, it is reported that government intervention of pricing regulation is the major reason for high initial return of first trading day and IPO risk is significant as important determinants of extreme underpricing.

Underpricing of IPOs in India, Dhamija and Arora (2017) explored the influence of quality certification, such as reputation of lead managers, credit rating agencies grading, anchor investor participation, and auditor reputation on underpricing of IPOs. However, it is found that IPO grading is significant for level of IPO underpricing because graded IPOs are more fairly priced. Moreover, it is reported that issue size and oversubscription are also determinants of high initial return. In line with this, Sahoo and Rajib (2010) explored the association between post issue promoters, and retention with underpricing of IPO along with signaling impact on monetary variables. It is found that all the industries of India have high underpricing and the reasons of high underpricing are observed by this study are offer size, group holding, and time subscribed. Further explored by Pande and Vaidyanathan (2007) they attempted to explain the high initial return on first of trading from book building procedure of demand generated. However, empirically it is found that high initial return of listed IPOs on Indian market has a strong influence from generated demand through procedure of book building but negative association of market expenses on underpricing. Gounopoulos et al. (2007) analyzed the listed IPOs on Cyprus stock exchange from the period of 1999-2002, through 75 new listed IPOs as a sample and examined the difference between IPO listing price and their market equilibrium price. This study found a negative association between IPO underpricing and number of days between offering period and listing period. Second, IPO size is negatively associated with underpricing, also it is suggested that large underpricing is due to hot issue market because underpricing is positively related to the prevailing market conditions.

Underpricing of IPOs in Indonesia by Suherman (2011) who attempted to explore the post IPO ownership to manage and control post issues of firms. Indonesian stock exchange listed IPOs examined during 1999-2005 to investigate the influence of ownership structure upon underpricing. However, the result reported that there is no association between institutional ownership with high initial return. In addition, it is described that when firms go public, it is important to be underpriced rather than monitoring of IPOs. In line with this, Husnan et al. (2014) found that underwriters are the only source to stabilize most expensive IPOs along with the most efficient measure of stabilization for closing price of first thirty trading days that are equal to offer price. Darmadi and Gunawan (2013) attempted to explore the association of board structure and corporate ownership with underpricing. This study found the evidence of positive significant association of board independence with IPO underpricing. Whereas, it is also found that there is negative association of board size and institutional ownership with level of underpricing. Moreover, this study provides the importance of government intervention mechanisms that reduces information asymmetry between issuer and Indonesian investors. Another recent study covers in Indonesia by Utamaningsih (2017) they explored both fixed and book building pricing mechanism that are the major reason of information asymmetry in Indonesian stock market. However, this study empirically proved that during book building higher underpricing is found than fixed price method.

Listed IPOs on Chittagong Stock Exchange Bangladesh, underpricing of IPOs study by Islam et al. (2010) explored the underpricing and its determinants, it is found that size of the company, age of the firm, are positively associated with level of underpricing. Whereas, offer size and type of industry are not associated with high initial return and there is no association between timing of offers with high underpricing. Further explored by Hasan and Quayes (2008) they identified that high ownership involvement and high participation of foreign owners reduced the level of underpricing in Chittagong Stock Exchange. Hence, it is found that high volatility influenced underpricing, but sales did not impact on underpricing. Listed IPOs on Vietnam underpricing of IPOs by Tran et al. (2014) found that reserve price and oversubscription are most influenced factors of high underpricing. Moreover, it is also found that firm size, listing delay, ownership level and age are not associated with high initial return on first trading day of IPO.

In the Gulf cooperation countries, underpricing of IPO addressed by Al-Hassan et al. (2010) they found the highest underpricing in Asian countries, they concluded that GCC investors mostly focuses on the trend of market and their firm concerns with economic activities. In line with this offer timings, industry and country important characteristics play vital role for explaining high initial return behavior. In UAE and Saudi Arab Alanazi and Al-Zoubi (2015) explored the underpricing of IPOs in GCC and found highest underpricing and its determinants. So far, it is found that firm characteristics investor demand, subscription period, market condition and investors behaviors well explained high underpricing. In addition, it is empirically found that institutional investors are the major cause of high underpricing in marketplace because they raised high investor demand for IPOs during IPO process and subscription period. Further explored by Yar and Javid (2014) they explained the underpricing issue in Pakistan by using a cross sectional data of 59 IPOs listed on Pakistan Stock Exchange. it is found that characteristics of firms are the actual causes of underpricing and oversubscription are positively related and higher assets lower growth opportunity are negatively related to underpricing of IPOs. Further, it is empirically found that ownership structure (Breadth and Herfindahl index) are significant to influence underpricing in Pakistan. In the recent, study by Javid and Malik (2016) investigated to compare the IPO performance of private and privatize IPOs in Pakistan. For this purpose, event study is used to compare IPO performance during 2000-2015. It is found that private firm of Government entity size, after market risk of IPO and subscription are truly significant related to IPO underpricing. Furthermore, it is found that initial return negatively significant correspondence with ownership concentration.

Accordingly, Adjasi et al. (2011) investigate IPO underpricing on Nigerian Stock exchange. The result explained that size of firm and audit quality is true determinants of underpricing. Further explored by Cornanic and Novak (2013) in Polish listed IPOs and found abnormal significant return. This study reported that in an emerging market underpricing is very high because information asymmetry is likely to be greater and that’s why signaling is very valuable. In addition, this study argued that underpricing is a signal itself for quality IPO, when information asymmetry is significant, and firms underpriced IPO to offer season equity offering on immediate bases. Similarly, Underpricing of IPO in North Africa by Hearn (2014) explored the determinants of underpricing and findings explained that foreign venture capitalist and lead managers gives signal of high quality of firms. In contrast, there is a positive association between domestic VC and lead manager reputation to increase underpricing. On the other hand, in Egypt by Omran (2005) explore the high initial return and it is found that ex-anti certainty, demand of IPOs are important determinant for high initial return. Whereas, underpricing of IPO in Istanbul examined by Kiymaz (2000) who found that underpricing has inverse relationship with institutional owners therefore self-offered IPOs are more underpriced than others. However, table 1.0 presents past studies that has examined IPO initial return in developed developing and emerging markets. Furthermore, Figure 1.0 shows initial return that is taken from previous studies. It is evident from figure 1.0 that there is noticeable high initial return in emerging market over time because in emerging markets there are weak regulatory environments and the lack of ability of investment bankers to adequately manage the listing process of new issues. The illustration figure 1.0 shows that China, Saudi Arabia, UAE, and Bangladesh has highest underpricing. Thus, we encourage scholars to use not only interesting information but as well external information to develop a better model in understanding the IPO underpricing.

[1]**Table 1**: IPO average initial return in developed, developing and emerging markets

Developed Markets			Developing Markets			Emerging Markets		
Market	Source	A.IR	Market	Source	A.IR	Market	Source	A.IR
Austria	Banerjee et al. (2011)	23.76%	South Africa	Alagidede & Heerden (2012)	108%	China	Xu, Wang, & Long, (2017)	93%
Belgim	Banerjee, et al (2011)	10.36%	Mexico	Eijgenhuijsen and Valk (1997)	3.54%	India	Dhamija & Arora, (2017)	22%
Canada	Banerjee, et al. (2011)	39.19%	Mexico	Boulton, Smart, & Zutter, (2011)	7.69%	Argentina	Boulton, Smart, & Zutter, (2011)	1.43%
Denmark	Banerjee, et al. (2011)	13.48%	Turkey	Kucukkocaoglu (2008)	7.01%	Sri Lanka	Lalith (2010)	34%
Korea	Moshirian et al. (2010)	70.30%	Brazil	Avelino (2013)	4.79%	Nigeria	Adjasi et al. (2011)	43.10%
Portugal	Isola, Teixeira, & Ferreira, (2014)	32.42%	Poland	Jewartowski and Lizinska (2012)	13.95%	Cyprus	Gonupopoulos et al. (2007)	20.81%
Hong Kong	Moshirian et al. (2010)	21.43%	Mauritius	Agathee et al. (2012)	13.14%	Morocco	Hearn, (2014)	18.94%
UK	Belghitar and Dixon (2012)	12.07%	Thailand	Chorruk and Worthington (2010)	17.60%	Tunisia	Hearn, (2014)	27.07%
Finland	Aijo et al. (2014)	15.60%	Thailand	Soongswang, (2017)	51.01%	Indonesia	Utamaningsih ,(2017)	39.90%
Norway	Falck (2013)	3.14%	Malaysia	Jelic et al. (2001)	99.24%	Vietnam	Tran, Le, & Hoang, (2014)	49%
Sweden	Henricson (2012)	11.49%	Malaysia	Rashid et al. (2014)	29.44%	Bangladesh	Islam, Ali and Ahmad (2010)	480.71%
Japan	Nagata, (2013)	45.4%				Gulf	Omran et al. (2010)	290%
Australia	Rupawaththa & Gunasekara, (2016)	23.11%				Saudi Arab	Alanazi & Al-Zoubi, (2015)	264.5%
Singapore	Moshirian et al. (2010)	33.10%				UAE	Alanazi & Al-Zoubi, (2015)	288.7%
USA	Dempreeet., al (2014)	10.71%				Egypt	Omran (2005)	8.40%
USA	Guo, Wang, Jia-Lang, & Hung, (2017)	12.00%				Pakistan	Yar & Javid, (2014)	51.57%

Source: Previous studies from developed, developing and emerging Market.

[1]The table shows the FTSE classification of markets as at March 2018 in which developed, advance emerging, secondary emerging & frontier market are categorized, but for the concern of this study advance emerging is said to be developing countries based on their per capital income and after secondary emerging and frontier both are mentioned as emerging markets.

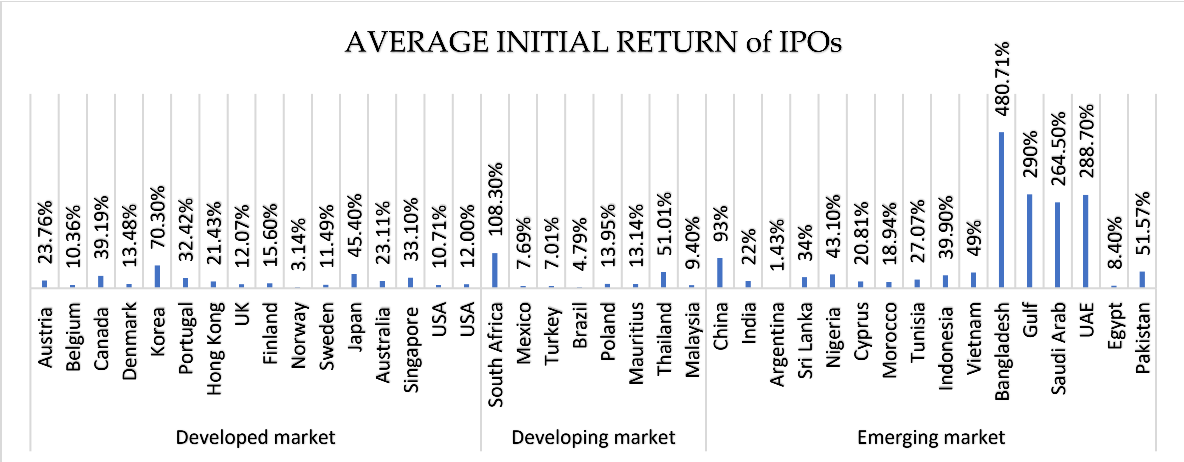

Figure 1 Average initial return from previous studies of developed, developing and emerging markets

5. Conclusion

This study attempts to explore the underpricing issue in the world financial markets categorized by FTSE Russell (2018) that provides comparison in magnitude of underpricing in developed, developing and emerging markets. It is revealed from the study that underpricing is burgeoning issue in every capital market of the world. Moreover, cross country evidences suggested that there is a high underpricing in overall emerging financial markets and more volatile regarding underpricing, such as Saudi Arab, Bangladesh, China, and UAE. We put forth the idea that the basic cause of underpricing in emerging market is information asymmetry. In addition, it is proposed that in emerging market use of fixed price mechanism, weak institutional setting and weak regulation to protect investors are the major reasons of information asymmetry. In consequence, these factors produce miscommunication in IPO process and between major parties of IPO such as issuers, underwriters and investors. Systematic findings from developed models highlighted different factors that affect underpricing. These are duration of study, methodological issues, exchange listing regulations, new issue size, underwriter involvements, information asymmetric, economic conditions, economic crises, government intervention cold or hot market. These factors are tested on various models i.e. winner's curse hypothesis (Rock, 1986), faddish behavior (Aggarwal & Rivoli, 1990), bandwagon effect (Welch, 1992) or cascade in the IPO market signaling model (Brealey et al., 1977). Furthermore, in this paper we managed to pinpoint the significant factors that influenced the initial return in developed, developing and emerging market. In line with this, the studies from developed markets and identified determinants are considered the most influencing for explaining initial return, such as Retention, underwriter fee, leverage, age, participation ratio, stock return volatility, underwriter reputation, lockup, book building, venture capital backing, promotion cost, offer size, offer price, technology and venture capital. In contrast, in developing markets oversubscription, size of firm, audit quality, market return, institutional ownership, demand ratio of the offer, ex-ante, market trend and offer size IPO are most influencing factors of underpricing. At last, in emerging markets risk, age, offer size, market condition, IPO proceeds, subscription ratio, gross proceed, venture capital backed, sponsor ownership, underwriter reputation, institutional holding pre-market demand, underwriter size and SEO are identified factors based upon previous studies of underpricing. The present study findings can be summarized as follow. First, it is highlighted that emerging markets has the highest initial return on first day of trading. Second, the influenced factors of underpricing and in last, after identifying factors in each market other remaining determinants that are yet to be explored. Overall, study concludes that issuer of IPOs takes underpricing as signal of their quality IPOs in emerging market, where information asymmetry is significant element. In line with this result Ritter (1998), also argued that information asymmetry is the major reason of underpricing.

Moreover, the present study reviews the literature of IPO underpricing in different markets. Our view is based on the review from the issue on underpricing that is still ongoing. We believe that due to different market setting, regulations, government interventions could influence the theories of underpricing differently. We believe for the future research should take the explanation on underpricing based on the nation's agenda as well allocations of the ownership which are more interesting for today research. Further the fluctuations on IPO underpricing also could be explain by the changes in regulations for the listing firms. Finally, the debate on the methodology also can explain the pattern in IPO underpricing.

However, from the beginning of this paper is managed to identify the important areas of future research and antecedents that are still yet to explore to cover the possible causes of underpricing and how it can be minimized. It seems that most of conducted studies in the developed market, can be further examined in the context of developing market and so far in emerging market. We end this paper with recommendation regarding possible future research on IPO underpricing issue. However, we do not claim at all, about the complete list of studies conducted. It is suggested that there is a need to test empirically at country specific environment such as micro and macro- economic factors, quality of legal framework based on listing regulations, and socio-political factors in all above-mentioned markets. Finally, it is identified that marketing of IPO is an important area of research and it is essential to pay serious attention from researchers in developed, developing and emerging market. Moreover, concern to this area of research can be conducted to relate IPO underpricing as a marketing tool for new listing company promotion. With that, we hope the review of underpricing from various countries will leads the researchers to extend and broaden in their selection of the issues.

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