

## Long-run Price Performance Phenomenon of Initial Public Offerings A Review of Theoretical and Empirical Perspectives<sup>1</sup>

Jas Bahadur Gurung

### Abstract

This article focuses on reviewing, discussing, and synthesizing the literature on the long-run price performance of initial public offerings. The systematic review was assumed to review articles published between 1990 and 2023. The author developed an inclusive framework and suggested an upcoming research agenda found in their discussion. This comprehensive overview of IPO's long-run performance can be an interesting document for Nepali scholars as well as scholars of the global academic community. To the best of the author's knowledge, this is the pioneer comprehensive review paper that reviews, synthesizes, and drafts the imminent research agenda. This review can be appropriate for researchers, policymakers, finance professionals, and anyone else interested in the Nepali IPO market. Bibliometric and PRISM methodologies of the literature can be employed to gain a better understanding of the findings of prior studies in the future.

**Keywords:** Aftermarket, BHAR, Market-adjusted abnormal return, underperformance, underpricing

### Introduction

The sale of securities to the wider public for the first time is recognized as an initial public offering (IPO). Corporate houses as well as government bodies have ended public offering of numerous securities like equity shares, debentures, bonds, etc. to the general public through Merchant Bankers in Nepal (Vaidya & Parajuli, 2004). It is often only major source of obtaining large sums of long-term funds to meet the financial needs

---

<sup>1</sup> Cite this article as: Gurung, J. B. (2024). *Contemporary Research: An Interdisciplinary Academic Journal*, vol. 7 (2); DOI: <https://doi.org/10.3126/craiaj.v7i2.72161>

Jas Bahadur Gurung, Assistant Professor, Prithvi Narayan Campus, Tribhuvan University, Nepal.

Email: [gurung.jmk@gmail.com](mailto:gurung.jmk@gmail.com)

Article history: Received on August 31, 2024; Accepted on Nov. 19, 2024; Published on Nov. 28, 2024

Peer reviewed under the authority of CRAIAJ, academic journal of Ghodaghodi Multiple Campus, Kailali, Nepal, with ISSN 2717-4611 (Print) and ISSN 2717-462X (Online).

© 2024 CRAIAJ, A Star Rated Journal Indexed in Nepjol



Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License

Full text can be downloaded: <https://www.nepjol.info/index.php/craiaj> & <http://www.craiaj.info/>

of firm especially for working capital, business growth, research and development, payment of the loan, and acquiring other companies that may have significant implications on the performance of the company (Allison et al. 2008). On the other hand, an IPO provides an opportunity to share rewards of the growth of the company to the investors. Investing in equity IPOs is considered as one of the choices with high risk-return. While risk-averse investors would pursue investing on securities like bonds, debentures, and preference shares issued corporate bodies rate that provide fixed returns over a period of time. However, IPOs equity almost always remains risky (Ibbotson et al., 1988). Risks are faced by each of the three major parties involved in the IPO process: the issuer, the merchant banker or issue manager, and the investors.

IPO concerned with the sale of securities to the public at large, and some of the major parties may possess no public information, resulting in asymmetric information (Ibbotson & Ritter, 1995). When information is not distributed evenly among major three parties during IPO, known as information asymmetry, actions of managers may affect the underlying value of the firm, which can cause the problem of adverse selection and the market may face moral hazard problems. Ritter (1991) presented three anomalies associated with the pricing of IPO equities: (i) new issue underpricing, (ii) cycles in the extent of underpricing, and (iii) long-run underperformance. Scholars have explained these patterns by developing various theories and/or hypotheses, during the 1970s and 1980s, contributing to generate a large set of empirical literature in the field of finance.

The first anomaly asserts that the new issues are, on average, underpriced which is a global phenomenon (Wong & Chiang, 1986). It is also known as initial returns as initial investors earn positive stock returns on the very first day of listing, in which the offer price is less than the first-day price (Perera, 2014). The phenomenon of underpricing was pioneered by Stoll and Curley (1970), Logue (1973), and Ibbotson (1975). The second anomaly focuses on the new issue market cycles in terms of initial return specifically indicated by hot and cold markets. This concept was first documented in the finance literature by Ibbotson and Jaffe (1975), in which they argued that hot issues generally state to certain stock issues that have increased from offer price to above average premia in the aftermarket. Likewise, Loughran and Ritter (1995) describe the 1980s as a “hot issue” because most of that decade had much higher issuance volume than the 1970s in the US. Thus, the IPO markets other than “hot issue” are called “cold issue” markets having lower levels of issuance, and much over-pricing of IPOs.

The third anomaly is associated with the long-run underperformance in the market. Long-run negative earnings by the investors are known as long-run underperformance, in which successive prices of stocks are lesser than the initial day price (Perera, 2014). Thus, this anomaly assumes that the listing day pricing is overly valued (or overpricing) as such the long-run returns of IPOs will have reasonable corrections. In this regard, Ritter (1991) reported a high mean adjusted initial returns of 14.06 percent (median 4.61 percent), which meaningfully converted into the worst aftermarket performance (-29.13 percent) in the first three years after the date of listing. He argued that this tendency is stronger for smaller issues than larger ones. Similarly, Levis (1993) also documented an average first-day return of 14.3 percent having a t-statistic of 18.2, which in turn, demonstrated an underperformance by 26.3 percent in the first 36 months of trading of aftermarket in the UK markets. Moreover, Hawaldar et al. (2018) found a negative cumulative average abnormal returns in 1-year, 3-year, and 5-year post-listing IPOs in the Indian market. However, IPOs in Malaysia and Thailand have been revealed to outperform in the long run (Corhay et al., 2002). Thus, these findings associated with long-run IPO performance are considered a puzzle.

Given the background of the third anomaly of IPO pricing, the present paper has three major objectives. First, to provide theoretical explanations of long-run underperformance of IPOs; second, to provide some empirical explanations for the documented long-run performance and their theoretical alignments; and third, to identify research gap and suggest future research agenda on long-run IPO performance.

### **Methods of the study**

This study employs a systematic review of literature under a quantitative approach to identify trends and developments in the field of IPO long-run returns, and also uncover the future research agenda in this field.

### **Data and sources**

The study employed reliable and valid data extracting them from various authentic sources. The research papers were collected, from 1990 to 2023, as data to review, discuss, and synthesize the literature focusing on long-run price performance of IPOs. Mainly the sources of data were databases such as Web of science, Scopus, ABDC, EBSCO, scholar google, NepJOL, and proquest. The data from the Web of science, Scopus, and ABDC databases having a wide range and high-quality papers were

collected from Ratan Tata Library of Delhi School of Economics, University of Delhi in January and February 2023.

### **Data analysis methods**

Collected data were screened, sorted based on eligibility, and removed the duplicates. The final data was used for the analysis. First, the data analysis identified the major theories or hypotheses that explain the long-run underperformance of IPOs categorized explanations based on a) behavioral finance, b) asymmetric information, and c) efficient market hypothesis. Second, the data on long-run returns of IPOs were presented in tabular forms, dividing them empirical evidence into three phases as, a) long-run returns prior to 2000; b) long-run returns from 2000 to 2014; and c) long-run returns from 2015 onwards. Each table contains details of each selected paper such as country name, author(s) name and year of publication in parenthesis, sample size, study period (or time period), results of long-run IPO returns in percentage measured in terms of average return, cumulative market-adjusted abnormal return, holding period return, buy-and-hold abnormal return and wealth relatives. These details provide an insight of existing knowledge on long-run IPO returns as illustration. Similarly, the data related to cross-sectional regressions that explain long-run returns of IPO are tabulated in a combined table for the whole period with a details of author(s) surname and year of publication, nature of the study (or title of the paper), and major findings of the study. Then the results are discussed and synthesized.

### **Review and synthesizing**

The modern or standard finance provides a deeper insight into securities pricing based on the various risk-return models. Standard finance is developed on the proposition that markets are profoundly rational. However, the price performance of IPOs in the long-run, measured based on the event time approach, has been better explained by theories or hypotheses developed over time.

### **Review of theoretical explanations of long-run underperformance**

The third anomaly concerning IPOs is the long-run underperformance. This segment deals with the theoretical explanations of long-run underperformance and provide several reasons why IPOs underperform in the long run. Studies on long-run performance have reported debatable and inconsistent findings (Thomadakis et al., 2012). Therefore, much consideration has been waged to theoretical explanations for the long-run performance of IPOs in the recent IPO literature.

### ***Explanations based on behavioral finance***

Behavioral theories have been proposed to describe the phenomenon of long-run underperformance of IPOs (Ritter 1998). These explanations suggest that the illogical emotion of the investors at the time of listing IPOs results in the long-run underperformance of IPOs. *The divergence of opinions hypothesis* (Miller, 1977) presented the differences in opinions about the long-run market performance of IPOs. If there is excessive uncertainty of IPO valuation, the divergence of opinion about an IPO between an optimistic and pessimistic investor will be higher, resulting in a higher valuation of shares on the listing day by the former one. Their valuation determines the initial trading day's price. As time passes, more information is available in the market, and different opinion between optimistic and pessimistic investors will become slim because of the accessibility of information. Therefore, it will direct to a decrease in the market price, consequently IPOs underperforming in the long run. Krigman et al. (1999), Aggarwal and Conroy (2000), and Hough et al. (2001) provide empirical research in different aspects of this relationship. *The impresario/fads hypothesis* (Shiller, 1990) assumes that by underpricing new issues, the underwriters can create more demand for the issue. Shiller claims that the market for IPOs is subject to fads (rumor, fashion, or whim) and that IPOs are underpriced by investment bankers (the impresarios) to produce the presence of superfluous demand. It ensures returns are gained for the initial day investors. However, the greater the magnitude of initial returns or underpricing, the more the occurrence at which the successive correction takes place, leading to lower returns for IPOs in the long-run. The fads hypothesis is verified using 'underpricing' as one of the independent variables in the regression model.

*The windows of opportunity hypothesis* (Ritter, 1991) forecasts that firms that go for IPO in high-volume periods are more likely to be overestimated than other IPOs. Ibbotson and Ritter (1995) argue during the period when investors are hopeful about the growth prospects of firms going public, a large cycle in volume may occur, which represents a response by firms trying to 'time' their IPOs to take benefit of these blows in investor sentiment. Issuers can take this as a chance to issue shares at a higher price, thus grasping the 'window of opportunity' since the market is willing to overpay for their equity. Similarly, Ritter (1991) and Loughran and Ritter (1995) advocated the firms that successfully issue their IPOs during the high valuation period earn low returns for investors in the long run. The high volume periods (hot issue market) and IPO

underperformance are associated. Therefore, *IPO activity period* can be considered a factor to test the applicability of the 'windows of opportunity hypothesis' in explaining the lowest long-run underperformance.

#### ***Explanations based on asymmetric information***

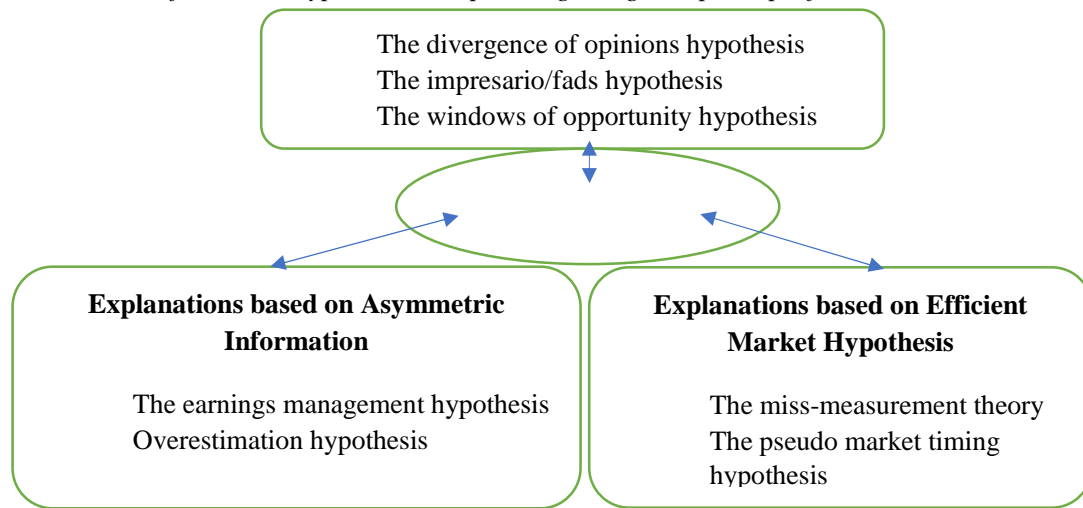
These explanations suggest that the IPO market is characterized by high levels of information asymmetry. The expectations based on such information may drive up the listing prices. However, if the claims of the company or forecasts of the analysts do not materialize in the long run, the hopes will be revised and stock prices decline. *The earnings management hypothesis* contends that firms manipulate earnings for the following purposes: to window-dress financials before issue, to rise managers' compensation and job safety, to remove violating lending bonds, to decrease regulatory expenses, or to surge regulatory aids. There is a general tendency for firms to attempt to appear gorgeous before going public, resulting in an aftermarket underperformance of IPOs (Agathe et al., 2014). Regarding this, Jain and Kini (1994) argue that it will subsequently result in pre-IPO performance being overstated and post-IPO performance being understated.

*Overestimation hypothesis* assumes that stock prices on the listing of IPOs depend on the anticipations of the companies' future actions, forecasts made by managers or analysts are significant for investors. Rajan and Servaes (1997) observed that new issues with high first-day returns attract more consideration from market analysts, who usually use this information to overestimate companies' prospects and profitability. The managers may themselves be overestimating when forecasting the growth of the company. As these exaggerated forecasts by managers and analysts do not materialize, investors revise their expectations and induce a decline in stock prices, resulting in long-run underperformance.

#### ***Explanations based on efficient market hypothesis (EMH)***

These explanations suggest that stock markets are efficient, and therefore, the observed underperformance exists because of miss-measurements or inappropriate computational methodology for long-run performance. *The miss-measurement* theory observed underperformance may be due to the methodology employed to compute long-run returns on IPOs. Some important methodological issues are inappropriate measures (BHARs vs. CARs) for long-run performance, the absence of a good model for computing expected returns, and problems in statistical tests for abnormal performance.

**Figure 1** *The pseudo-market timing Framework of theories/hypotheses<sup>2</sup> explaining Long-run price performance*



*Hypothesis* proposed by Schultz (2003) assumes that the principle of the pseudo-market timing hypothesis is that the greater the firms go public the level of stock prices increases, though managers are not able to forecast future returns. As a result of this pseudo-market timing, the probability of perceiving long-run underperformance ex-post may far exceed 50 percent. Equally weighted returns will display underperformance, as the averages will be distorted by many underperforming IPOs that followed good performers.

The summary of theoretical explanations of IPO long-run performance has been presented in Figure 1.

### **Review of empirical evidence on long-run IPO pricing**

The review of empirical works on long-run return has been performed categorizing it into three phases in the following ways:

#### **Phase 1. Empirical evidence on long-run return prior to 2000**

Table 1 presents the outcomes of research works on long-run performance of IPOs undertaken in developed and emerging markets prior to 2000. Using 53 common stock IPO samples Reilly and Hatfield (1969) reported that the long-run performance, from the

<sup>2</sup>This framework provides the detail theories or hypotheses related to long-run performance of initial public offerings.

day of the offering to the Friday one year after the offering, was 43.70 percent during 1963 to 1965 in US market. The reason for better performance was the strong secular trend in the stock market. The majority of the new issues did better during that period, which was expected too.

**Table 1**

*Summary evidence on average long-run return of IPOs prior to 2000 exclusive of the first trading day return and wealth relatives*

Country	Author/s (Year)	Sample size	Time period	LR return (%)	Wealth relatives
United States	Reilly & Hatfield (1969)	53	1963-1965	43.70 <sup>a</sup> AR (O)	
	Ritter (1991)	1501	1975-1984	-1.91a AR; -10.23a CAR	
		1397		-1.09b AR; -16.89b CAR	
		1254		-1.67c AR; -29.13c CAR	
		1526		-16.67c HPR (Median) 34.47c HPR (Mean)	0.831c
United Kingdom	Levis (1993)	705	1980-1988	-7.20a CAR	
		656		-17.33b CAR	
		483		-22.96c CAR	
		712		55.72c HPR	0.787c
Australia	Lee et al. (1996)	263	1979-1986	-0.515a AR; -13.502a CAR	
		240		-1.39b AR; -31.029b CAR	
		169		-3.809c AR; -51.259c CAR	
				-18.768a HPR -35.602b HPR -51.581c HPR	
Germany	Uhlir (1989)	97	1977-1987	-7.40 <sup>a</sup>	
	Ljunqvist (1997)	145	1970-1993	-12.10 <sup>c</sup>	
Switzerland	Kunz & Aggarwal (1994)	42	1983-1989	6.70a MAR	
		41		1.80b MAR	

Full text can be downloaded: <https://www.nepjol.info/index.php/craiaj> & <http://www.craiaj.info/>



		34		-6.10 <sup>c</sup> MAR	
Brazil	Aggarwal et al. (1993)	57 48 48	1980-1990	39.20a MAR (O); -9.00a MAR (C) 0.40b MAR (O); -34.90b MAR (C) -25.60c MAR(O);- 47.00c MAR(C)	
Chilly	Aggarwal et al. (1993)	15 15 8	1982-1990	-9.80a MAR (O) ; 1.10a MAR (C) 33.90b MAR(O); -2.00b MAR(C) 0.80c MAR (O); -2.00b MAR (C)	
Mexico	Aggarwal et al. (1993)	38	1987-1990	-17.7a MAR (O) -19.60a MAR (C)	
Korea	Kim et al. (1995)	169	1985-1989	51.51b BHAR 80.63c BHAR	1.510b 1.460c
India	Madhusoodanan & Thiripalraju (1997)	1922	1992-1995	55.62a MAR (O) 27.62b MAR (O) 16.33c MAR (O)	

*Note.*(1) <sup>a</sup>one-year return, <sup>b</sup>two-year return, <sup>c</sup>three-year return, <sup>d</sup>five-year return, AR – average return, MAR -Market-adjusted abnormal returns, CAR -cumulative market-adjusted abnormal return, HPR – holding period return, BHAR – buy-and-hold abnormal return, O -Offer price, C -Closing price at day 1. (2) A negative sign indicates underperformance and a positive sign indicates over performance in the long-run.

*Source: Literature review 2022-23*

Another major study undertaken by Ritter (1991) conducted 1526 IPO samples reported the mean matching firm-adjusted returns (AR) and cumulative mean matching firm-adjusted returns (CAR) for the three-year monthly after offering date. Both AR and CAR are negative for 12 months, 24 months and 36 months of seasoning. The underperformance of the IPOs is both economically and statistically significant. The distribution of three-year holding period return (HPR) showed that the median IPO is -

Full text can be downloaded: <https://www.nepjol.info/index.php/craiaj> & <http://www.craiaj.info/>

16.67 percent in contrast to 38.54 percent for the median matching firm, but the mean IPO three-year HPR is only 34.47 percent. However, the three-year wealth relative ratio was 0.831 confirming the widespread IPO underperformance. It implied that the trends prevailing in 1975 to 1984 are the illustrative of a longer spring of capital market history of US.

Levis (1993) reported aftermarket CARs for 12-month, 24-month and 36-month are negative, indicating underperformance of UK IPOs during 1980 to 1988. Moreover, a wealth relative of 0.787 implied UK IPOs underperform in the long-run, which is economically and statistically significant. Thus the results based on CAR were similar to the US markets. Consistent results were found in the Australian and German markets too. Kunz and Aggarwal (1994) documented positive market-adjusted abnormal return for the first two years after listing, but it turned into negative return in the third year indicating correction in price took a long time in Swiss market. Another comprehensive work of the three Latin American countries by Aggarwal et al. (1993) documented the existence of both underpricing and overpricing when the IPO returns were valued at an offer price. The long-run returns computed as market-adjusted abnormal return based on closing price at day 1 for one year, two years, and three years are all negative indicating underperformance of IPOs.

In Korean market, the buy-and-hold returns, market index benchmark, exclusive of the first trading day return for 24 months and 36 months of seasoning is positive and wealth relatives of more than one indicating the Korean IPOs outperform in the long-run. Likewise, Madhusoodanan and Thiripalraju (1997), using a sample of 1922 IPOs listed in Bombay Stock Exchange (BSE) during 1992 to 1995, documented a positive overall market-adjusted excess returns, based on offer price, for one-, two-, and three-year period in the Indian IPO market.

Thus, IPO is overpriced and investors earn negative returns in most of the developed countries, while IPOs are underpriced in Asian markets over time. Investors in Asian markets have a better opportunity to earn good returns by investing in IPO shares. The results of Latin American markets are inconclusive.

## **Phase 2. Empirical evidence on long-run returns during 2000 to 2014**

Table 2 provides empirical results on long-run returns of IPOs during 2000 to 2014. A Canadian study by Kooli and Suret (2004) documented a negative one year and two year returns after listing during 1991-1998. Another extensive study of European

markets undertaken by Schuster (2003) found a positive long-run returns in terms of buy-and-hold abnormal returns for three years except in Spain over 1988 through 1998. While the study carried out by Jaskiewicz et al. (2005) showed a negative BHARs during 1991 to 2001 in Germany and Spain. Similar negative long-run returns of IPOs are documented in Cyprus and Austria. In Greece, the IPOs are underpriced for the first two years, and overpriced it in the third year

**Table 2**

*Summary evidence on average long-run return of IPOs during 2000 to 2014*

Country	Author/s (Year)	Sample Size	Time Period	Avg. LR Return (%)	Wealth relatives
Canada	Kooli & Suret (2004)	445	1991-1998	-35.15 <sup>a</sup> -43.66 <sup>b</sup>	
Germany	Schuster (2003) Jaskiewicz et al. (2005)	155	1988-1998	1.3892c BHAR	1.701
		493	1991-2001	-33.80c BHAR -38.30c BHAR(F) -26.60c BHAR(N-F)	
Spain	Schuster (2003) Jaskiewicz et al. (2005)	68	1988-1998	-0.0465c BHAR	0.755
		61	1991-2001	-27.30c BHAR -40.40c BHAR(F) -14.90 c BHAR (N-F)	
France	Schuster (2003)	213	1988-1998	0.5367c BHAR	0.881
Italy	Schuster (2003)	59	1988-1998	0.1794c BHAR	0.705
Netherlands	Schuster (2003)	53	1988-1998	0.7369c BHAR	1.044
Sweden	Schuster (2003)	99	1988-1998	0.7290c BHAR	0.960
Switzerland	Schuster (2003)	31	1988-1998	0.5595c BHAR	0.943
Cyprus	Gounopoulos et al. (2005)	75	1999-2002	39.08a AR (O); - 3.68a AR (C) 1.72b AR (O); -7.42b AR (C) -4.96c AR (O); - 15.36c AR(C)	
Austria	Aussenegg (2007)	66	1984-1996	-2.62a BHAR	0.980a
		57		-47.42c BHAR	0.730c

Full text can be downloaded: <https://www.nepjol.info/index.php/craiaj> & <http://www.craiaj.info/>

		51		-73.95d BHAR	0.640d
		31		-118.60d BHAR(F)	0.400d
		7		49.85d BHAR (N-F)	1.250d
Greece	Thomadakis et al. (2008)	247 240 231	1994-2002	40.82a BHAR(L); 15.71 a BHAR (C) 13.49b BHAR (L); 8.09b BHAR (C) -15.35c BHAR (L); - 31.43c BHAR(C)	
China	Shanghai Stock Exchange (2013)	357	2001-2011	-46.03a BHAR -68.11c BHAR	
India	Sahoo & Rajib (2010)	92	2002-2006	41.24a BHAR (O); 50.13b BHAR (O) 41.91c BHAR (O) -1.44a BHAR (L) 1.96b BHAR (L) 0.35c BHAR (L)	1.416a 1.537b 1.469c 0.998a 1.043b 1.063c
Australia	Perera (2014)	242 199 180	2006-2011	0.0148a AR; 0.0841a CAR 0.0283b AR; 0.1786b CAR -0.0163c AR; 0.3427c CAR	

Note.1) <sup>a</sup>one-year return, <sup>b</sup>two-year return, <sup>c</sup>three-year return, <sup>d</sup>five-year return, AR – average return, MAR -Market-adjusted abnormal returns, CAR -cumulative market-adjusted abnormal return, HPR – holding period return, BHAR – buy-and-hold abnormal return, F = family business N-F = non-family business, O -Offer price, L listing price, C -Closing price at day 1. 2) A negative sign indicates underperformance and a positive sign indicates over performance in the long-run.

Thus, IPOs are underperforming in some European countries such as Cyprus, Austria and Greece. Similarly, the Shanghai Stock Exchange (2013) reported the negative buy-and-hold abnormal return of 357 IPOs for the period of 2001 to 2011. However, Sahoo and Rajib (2010) documented that the BHARs based on offer and closing price were found positive with wealth relatives of more than indicating IPOs outperformed in the long-run for one-, two-, and three-year period in Indian market.

Full text can be downloaded: <https://www.nepjol.info/index.php/craiaj> & <http://www.craiaj.info/>

However, the one-year BHAR was negative with wealth relatives of below one. In Australian market, the market-adjusted abnormal returns and cumulative abnormal returns were positive during 2006 to 2011 (Perera, 2014).

Thus, there is long-run underperformance of IPOs in Canada and most of the European markets including the Shanghai Stock Exchange. However, some studies of European markets undertaken in earlier periods reveal an underpricing (outperformance) of IPOs in the long-run. IPO markets of India and Australia also show an outperformance indicating investors are able to earn return on their investments in the long-run.

**Phase 3. Empirical evidence on long-run returns from 2015 onwards**

Table 3 shows the empirical findings of long-run returns of IPOs undertaken from 2015 onwards. In this regard, Cotgrove (2018) documented a negative CAR for one year and positive thereafter, while the BHARs for one year and three year periods are positive and it is negative in five year. Similarly, the mixed results found in France market (Coste, 2020). Similarly, AR and CAR of Mauritius market are

**Table 3**

*Summary Evidence on Average Long-run Return of IPOs from 2015 Onwards*

Country	Author/s (Year)	Sample Size	Time Period	LR Return (%)	Wealth relative
United Kingdom	Cotgrove (2018)	194	2006-2017	-2.16a CAR; 1.95a BHAR 16.10c CAR; 12.08c BHAR 14.61d CAR; -1.61d BHAR	
France	Coste (2020)	274	1999-2019	-2.20a AR; 3.82a CAR 1.25b AR; -2.77b CAR	
		250		-0.66c AR; 6.19c CAR	
		230		0.19d AR; 16.08d CAR	
		189		11.62a BHAR 7.51b BHAR 10.19c BHAR 20.79d BHAR	1.06a 1.02b 1.09c 1.20d

Full text can be downloaded: <https://www.nepjol.info/index.php/craiaj> & <http://www.craiaj.info/>

Netherlands	Reede (2017)	1022	2000-2011	-1.82a AR; -17.69a CAR -1.27b AR; -27.80b CAR 0.74c AR; -36.22c CAR	
Gulf Countries*	Alanazi & Al-Zoubi (2015)	120		-7.04a HPR -16.36b HPR -21.09c HPR	0.92a 0.97b 0.79c
Mauritius	Agathee et al. (2014)	44 44 43	1989-2010	0.0960a AR; 0.0250a CAR 0.0060b AR; 0.1138b CAR 0.0002c AR; -0.0406c CAR	
Malaysia	Khin et al. (2017)	313	1998-2008	-2.00a BHAR -8.00b BHAR -15.00c BHAR	
Pakistan	Mamtaz et al. (2016)	57	2000-2010	2.70a AR; -22.80a CAR -7.40b AR; -19.30b CAR -3.80c AR; -22.50c CAR -11.00a BHAR 7.70b BHAR 7.70c BHAR	
India	Dhamija & Arora (2017)	377	2005-2015	-2.87a AR; -37.73a CAR -0.77b AR; -63.19b CAR -2.79c AR; -87.34c CAR -26.38a BHAR -40.82b BHAR -57.34c BHAR	

Full text can be downloaded: <https://www.nepjol.info/index.php/craiaj> & <http://www.craiaj.info/>

Note.1) <sup>a</sup>one-year return, <sup>b</sup>two-year return, <sup>c</sup>three-year return, <sup>d</sup>five-year return, AR – average return, MAR –Market-adjusted abnormal returns, CAR –cumulative market-adjusted abnormal return, HPR – holding period return, BHAR – buy-and-hold abnormal return, F = family business N-F = non-family business, O -Offer price, L listing price, C -Closing price at day 1. 2) A negativesign indicates underperformance and a positive sign indicates over performance in the long-run. 3) \* Gulf countries include Saudi, Kuwait, Qatar, Bahrain, Emirates, and Oman. *Source: Literature Review 2022/23*

Positive for one-, two-, and three year except CAR of three year. The long-run returns of IPOs are negative in some markets including Asian Markets. Long-run return measures in terms of AR, CAR, HPR, and BHAR are negative and wealth relatives of less than one especially in the Netherlands, Gulf Countries, Malaysia, Pakistan and India. However, the two-year and three-year BHARs are positive in Pakistani market.

Thus, there is a negative long-run return (or underperformance) in Netherlands, Gulf Countries, Malaysia, Pakistan, and India. The returns are positive (or outperformance) in the Mauritius market. The results of the UK, France, and Pakistani markets are mixed.

#### **Cross-section of IPO long-run returns**

Table 4 provides a summary of major studies on factors affecting the long-run performance of IPOs. Offer size of an IPO is the sum of capital the firm wants to acquire through IPOs. Aggarwal and Rivoli (1990), Lee et al. (1996), Sahoo and Rajib (2010), and Rathnayake et al. (2022) found that the offer size of IPO shares showed a negative relation with long-run returns. Sahoo and Rajib (2010) argued that there is stronger long-run IPO underperformance, especially in smaller firms in Indian markets. Due to divergence of opinion between optimistic and pessimistic investors, uncertainty about the value of IPO exists resulting a high valuation on listing day. Gradually, more information becomes available that narrowed the divergence opinion leading to reduction in market price of stocks. The negative relation of offer size with long-run return, thus, supports the divergence of opinion hypothesis. However, Aussenegg (2007) and Agathee et al. (2015) found a positive relation between offer size and long-run returns.

Higher market-adjusted abnormal return (underpricing) on listing day signals high quality of firms. Coste (2020) argued that greater underpricing leads to poorer long-run market performance of IPOs due to fads and investor over-overreaction in the initial day. Ritter (1991), Sahoo and Rajib (2010), Mumtaz et al. (2016), Coste (2020) and

Rathnayake et al. (2022) documented negative relation of underpricing with long-run returns, thus, supports fads/impresario hypothesis and investor over-reaction hypothesis of long-run. Another variable, hot issue dummy, measured as the period of high IPO volume and high initial returns, firms successfully issue their IPOs during the high valuation period (hot issue period) yield low returns for investors in the long-run (Ritter, 1991). Study findings of Thomadakis et al. (2008), Sahoo and Rajib (2010), and Lin et al. (2021) are similar to the argument of Ritter (1991) indicating their findings support the windows of opportunities hypothesis of long-run IPO returns. While Gounopoulos et al. (2005) reported positive relation between hot issue dummy and long-run returns.

Ownership concentration by the initial owners signals firm quality and lessen the agency problem implying IPO investors yield a positive long-run returns. Thomadakis et al. (2008) and Mumtaz et al. (2016) found a positive relation between ownership concentration and long-run IPO returns which supports the signaling hypothesis. However, Aussenegg (2007) reported negative relation between ownership concentration and long-run IPO returns. Sahoo and Rajib (2010) and Wang and Wang (2021) documented that price to book value ratio has negative relation with long-run returns supporting earnings management hypothesis. Market return, investor sentiment (standard deviation of market return) negatively related to long-run return of IPOs (Coste, 2020; Wang & Wang, 2021; Rathnayake et al. 2022) supporting ex-ante uncertainty hypothesis. Leverage, return on assets, bank dummy, book to market, and GDP have positive relation with long-run returns, while there is negative relation of offer price, IPO volume, firm dummy, z-score value with long-run returns of IPOs.

**Table 4**

*Summary of Major Studies on Factors Affecting Long-run Returns*

Author/s (Year)	Nature of the study	Major findings
Aggarwal & Rivoli (1990)	Fads in IPO market	The initial day returns are positive and significant for all size categories of the offering registered. Both IPO offer size and offer price has a significant negative relation with one-year market-adjusted returns.
Ritter (1991)	Long-run performance of IPOs	The market-adjusted initial returns are negatively related to the first aftermarket raw three-year return, but is not statistically significant. Age of the IPO firm, market return and bank dummy have a positive significant relation with the aftermarket

Full text can be downloaded: <https://www.nepjol.info/index.php/craiaj> & <http://www.craiaj.info/>



		three-year returns. Annual volume of IPOs in the year of issuance and oil and gas production companies have a negative significant relation with the aftermarket three-year returns in US markets.
Loughran & Ritter (1995)	The new issues puzzle	Size, the market value of equity, had not statistically related with return on IPO stock. The coefficient of the ratio of book value to market value of equity has significant positive relation with IPO returns implying higher monthly returns, while issuing firm dummy negatively related with the IPO returns.
Lee et al. (1996)	IPO pricing in the short and long run	Offer size of equity and market index adjusted underpricing (market-adjusted abnormal returns) have a negative significant impact on one-year average returns at 10 percent and 5 percent levels in Australia.
Jaskiewicz et al. (2005)	IPO performance of German and Spanish family-owned firms	In both German and Spanish IPOs, non-family business IPOs achieve insignificantly better. In family-owned businesses family involvement has positive impact on the long-run market performance stocks, while there is negative influence of age of the firm.
Gounopoulos et al. (2007)	Short- and long-term performance of IPOs	IPO listed in “hot issue” periods positively significant impact both on adjusted returns in three years’ time and adjusted returns in three years’ time from the end of the first day of trading in Cyprus.
Aussenegg (2007)	Underpricing and the aftermarket performance of IPOs in Austria	Reputation of the underwriter proxied by cumulative gross proceeds of issues by a bank as lead manager positively related to the 5-year buy-and-hold abnormal returns, while ownership structure proxied by family and market have a significant negative impact on 5-year buy-and-hold abnormal returns at 1 percent and 10 percent level respectively.
Sahoo & Rajib (2010)	Aftermarket pricing performance of IPOs in Indian market	Underpricing, offer size of IPOs, price to book value and IPO activity period i.e. time have a negative relation with BHAR_12 i.e. underperformance. Leverage ratio, and ex-ante uncertainty have a positive relation with BHAR_12 in Indian IPOs.

Full text can be downloaded: <https://www.nepjol.info/index.php/craiaj> & <http://www.craiaj.info/>

Thomadakis et al. (2012)	Long term performance of Greek IPOs	Ownership concentration by the initial shareholders has a positive significant relation with long run returns of IPOs while IPOs listed in the hot period (1998-2000) negatively related to the buy-and-hold abnormal returns of Greek IPOs.
Agathee et al. (2014)	Long-run performance of IPOs in Mouritius	Issue proceeds has a positive significant relation with 3-year buy-and-hold abnormal returns, while the ex-ante financial strength measured by Z-score negative significantly related to the long run returns.
Mumtaz et al. (2016)	The aftermarket performance of IPOs in Pakistan	Post-issue promoter's holding, return on assets and financial leverage positively related to aftermarket performance, but the long-term investment ratio, and market-adjusted abnormal returns have a negative effect on aftermarket IPO performance.
Coste (2020)	Long-run IPO performance and its determinants in France	There is a negative relationship between investor sentiment and abnormal returns. However, there is a positive and significant relationship between GDP growth and abnormal returns of IPOs.
Lin et al. (2021)	IPO's long-run performance	IPOs issued in the hot market period leads to underperformance in the long run. On the other hand, IPOs that are issued in the cold issue period, in general, there is no longer underperform in the long run even the managers involve in earnings management.
Wang & Wang (2021)	IPO underpricing and long-term performance	Price limit, price-to-book ratio, and market return have a negative relation with long run performance of IPOs in China.
Rathnayake et al. (2022)	Aftermarket performance of IPOs in emerging markets	Age of the firm from its incorporation, and hotel industries have a positive significant relationship with aftermarket performance of IPOs, whereas initial returns, size of IPO issues and standard deviation of daily market returns for the first 30 trading days prior to IPO have a negative significant relationship with aftermarket performance of IPOs.

Source: Literature Review 2022-23

Full text can be downloaded: <https://www.nepjol.info/index.php/craiaj> & <http://www.craiaj.info/>

The above facts indicate that the various factors influence on the aftermarket performance of IPOs in the market. In general IPOs underperformance in long-run, though some mixed findings appeared over time. However, the study variables can be selected based on the theoretical and empirical literature along with the accessibility of the data for the study.

### **Concluding remarks**

#### **Proposed framework and implications**

The entire range of factors that influence the long-run performance of firms can be categorized into broader categories: (1) issue-specific factors, (2) firm-specific factors, and (3) market-specific factors. The framework is advised in light of the previous summary of major findings explaining long-run IPO returns in Figure 2.

This framework is the result of the review, discussion, and synthesis of the literature, both theoretical and empirical, related to the long-run performance of IPOs. Among all, variables such as offer size, underpricing, or market-adjusted abnormal return, market return, hot issue dummy, ownership concentration, leverage, return on assets, and GDP growth were dealt frequently, and tested them establish a relation with long-run returns. Testing their relationship helps identify the application of theory or hypothesis in the context of market performance of IPOs that supports inculcating the required suggestions for improvement in the future course of actions.

The study can be the reference guide for the academicians for classroom discussions and research, IPO investors for long-run investment decisions, regulators for policy related issues as the paper gives concrete framework of trends and development of IPO market in the global context.

#### **Research gap and direction for future research**

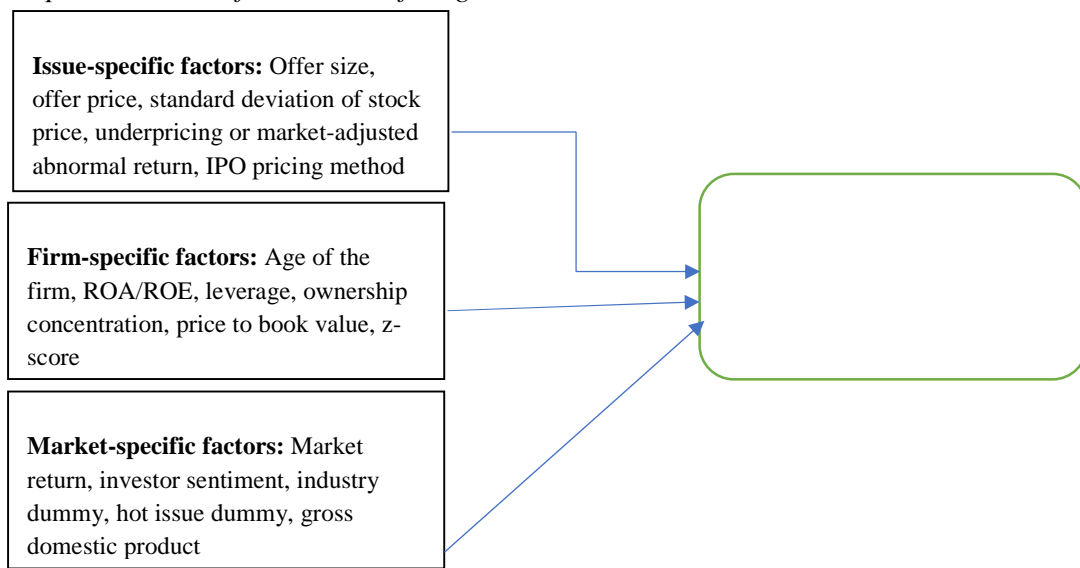
As literature suggested, so far the studies of such kind is lacking in the context of Nepal. Investigation of long-run market performance of IPOs under different performance measures using different sample sizes and sample periods is yet to be evaluated. Whether IPOs from Nepali enterprises are overvalued, undervalued or rightly valued both on offer and list price for the long-run is still unanswered. In other words, IPO investors are able to make profit in the long-run, or they are suffered from loss or bearing a situation of no profit or loss in their investments, is one of the most interesting issue in Nepali primary market. Besides, examining relation of issue-specific, firm-specific, and market-specific

factors with long-run price performance of IPO is also left unobserved in the Nepali finance literature.

Future research might be undertaken in a broader context considering a bigger sample following sophisticated research designs such as bibliometric analysis, PRISM, and meta-analysis. These methodologies are widely adopted in writing review papers giving richer insights on the issue to be discussed and synthesized. Further, future researchers should carry out an empirical study based on the suggested conceptual framework, which might help explore new knowledge in the area of long-run performance of IPOs. It could be a milestone contribution in the literature of Nepali corporate finance.

**Figure 2**

*Proposed research framework<sup>3</sup> of long-run IPO returns*



**Acknowledgements**

I am thankful to my PhD supervisors Professor Keshar J. Baral, PhD, and Professor Dilli Raj Sharma, PhD, for their invaluable guidance and mentoring throughout the study. I also acknowledge the support of University Grants Commission Nepal for

<sup>3</sup>This framework provides a researcher’s proposed plan or model for the study on factors explaining long-run IPO returns. It consists variables and their relationship based on both theoretical and empirical reviews. Normally research/conceptual framework is presented in visual illustration.

rewarding me PhD Fellowship with the award no. PhD-78/79- Mgmt- 02. I never forget my colleague Ramkrishna Chapagain, a PhD scholar at Delhi School of Economics, University of Delhi, for assisting me with several inaccessible resources for this study.

### References

- Agathee, U. S., Sannassee, R. V., & Brooks, C. (2014). The long-run performance of IPOs: The case of the stock exchange of Mauritius. *Applied Financial Economics*, 24(17), 1123-145.
- Aggarwal, R., & Conroy, P. (2000). Price discovery in initial public offerings and the role of the lead underwriter. *Journal of Finance*, 55, 2903-22.
- Aggarwal R., Leal, R., & Hernandez, L. (1993). The aftermarket performance of initial public offerings in Latin America. *Financial Management*, 22, 42-53.
- Aggarwal, R., & Rivoli, P. (1990). Fads in the initial public offering market? *Financial Management*, 19(4), 45–57.
- Alanazi, A. S., & Al-Aoubi, H. A. (2015). Extreme IPO underpricing and the legal environment in wealthy emerging economies, *Journal of Multinational Financial Management*, 31, 83-103.
- Allison, S., Hall, C., & McShea, D. (2008). *The initial public offering handbook: A guide for entrepreneurs, executives, directors and private investors*. St. Paul, Minnesota: Merrill Corporation.
- Aussenegg, W. (2007). Underpricing and the aftermarket performance of initial public offerings: The case of Austria. In G. N. Gregoriou (Eds.). *Initial public offerings: An international perspective*. UK: Butterworth-Henemann: An Imprint of Elsevier Inc. 187-213.
- Corhay, A., Teo, S., & Rad, A. T. (2002). The long run performance of Malaysian initial public offerings (IPOs): Value and growth effects. *Managerial Finance*, 28(2), 52-65.
- Coste, L. (2020). Long-run performance of initial public offerings and its determinants: Evidence from France. Unpublished Working Paper. EDHEC Business School. <https://www.afte.com/sites/default/files/inline-files/M%C3%A9moire%20du%203e%20prix%20ax%20a%20a%20Coste%20L%C3%A9.pdf>
- De Bondt, W., & Thaler, R. (1987). Further evidence on investor overreaction and stock market seasonality. *Journal of Finance*, 42(3), 557–581.

Full text can be downloaded: <https://www.nepjol.info/index.php/craiaj> & <http://www.craiaj.info/>

- Gounopoulos, D., Nounis, C., & Stylianides, P. (2007). The short and long term performance of initial public offerings in the Cyprus Stock Exchange. *Journal of Financial Management*, 1-27.
- Hawaldar, I. T., Kumar, K. R., & Mllikarjunappa, T. (2018). Pricing and performance of IPOs: Evidence from Indian stock market. *Cogent Economics and Finance*, 6(1), 1-20.
- Houge, T., Loughran, T., Suchanek, G., & Yan, X. (2001). Divergence of opinion, uncertainty and the quality of initial public offerings. *Financial Management*, 30(4), 5-23.
- Ibbotson, R. G. (1975). Price performance of common stock new issues. *Journal of Financial Economics*, 2, 235-272.
- Ibbotson, R. G., & Jaffe, J. F. (1975). "Hot Issue" markets. *The Journal of Finance*, 30(4), 1027-1042.
- Ibbotson, R. G., Sindelar, J. L., & Ritter, J. R. (1988). Initial public offerings. *Journal of Applied Corporate Finance*, 1-2, 37-45.
- Jakobsen, J., & Sorensen, O. (2001). Decomposing and testing long-term returns: An application of Danish IPOs. *European Financial Management*, 7(3), 393-417.
- Jain, B. A., & Kini, O. (1994). The post-issue operating performance of IPO firms. *The Journal of Finance*, 49(5), 1699-1726.
- Jaskiewicz, P., González, V. M., Menéndez, S., & Schiereck, D. (2005). Long-Run IPO performance analysis of German and Spanish Family-Owned Businesses. *Family Business Review*, 18(3), 179-2002.
- Kim, J., Krinsky, I., & Lee, J. (1995). The aftermarket performance of initial public offerings in Korea. *Pacific-Basin Finance Journal*, 3(4), 429-448.
- Kooli, M., & Suret, J. M. (2004). The aftermarket performance of initial public offerings in Canada. *Journal of Multinational Financial Management*, 14(1), 47-66.
- Krigman, L., Shaw, W. H., & Womack, K. L. (1999). The persistent of IPO mispricing and the predictive power of flipping. *Journal of Finance*, 54, 1015-1044.
- Kunz, R. M., & Aggarwal, R. (1994). Why initial public offerings are underpriced: Evidence from Switzerland. *Journal of Banking and Finance*, 18(4), 705-723.
- Lee, P. J., Taylor, S. L., & Walter, T. S. (1996). Australian IPO pricing in the short and long run. *Journal of Banking & Finance*, 20(7), 1189-1210.

- Levis, M. (1993). The Long-Run Performance of Initial Public Offerings: The UK Experience 1980–1988. *Financial Management*, 22(1), 22–41.
- Ljungqvist, A. (1997). Pricing initial public offerings: Further evidence from Germany. *European Economic Review*, 41(7), 1309-1320.
- Logue, D. E. (1973). On the pricing of unseasoned equity issues: 1965-1969. *Journal of Financial and Quantitative Analysis*, 8(1), 91-103.
- Loughran, T., & Ritter, J. R. (1995). The new issues puzzle. *The Journal of Finance*, L(1), 23-51.
- Madhusoodanan, T. P., & Thiripalraju M. (1997). Underpricing in initial public offerings: The Indian evidence. *Vikalpa The Journal of Decision Makers*, 22(4), 17-30.
- Miller, E. M. (1977). Risk, uncertainty, and divergence of opinion. *Journal of Finance*, 32, 1151-1168.
- Mumtaz, M. Z., Smith, Z. A., & Ahmed, A. M. (2016). The aftermarket performance of initial public offerings in Pakistan. *The Lahore Journal of Economics*, 21(1), 23–68.
- Perera, K.L.W. (2014). Evaluation of market performance of initial public offerings (IPOs) and its determinants: Evidence from Australian IPOs [Unpublished doctoral dissertation]. Victoria University.
- Rajan, R. G., & Servaes, H. (1997). Analysts following initial public offerings. *Journal of Finance*, 52, 507-529.
- Rathnayake, D. N., Zhang, Z., Yang, B., & Louembe, P. A. (2022). The aftermarket performance of initial public offerings: New evidence from an emerging market, *PLoS ONE*, 17(8), e0272092. <https://doi.org/10.1371/journal.pone.0272092>
- Reede, B. (2017). The long-run underperformance of initial public offerings. *Master Thesis Financial Economics*. Erasmus School of Economics, Erasmus University Rotterdam.
- Reilly, F. K., & Hatfield, K. (1969). Investor experience with new stock issues. *Financial Analysts Journal*, 73-80.
- Ritter, J. R. (1991). The long run performance of initial public offerings. *The Journal of Finance*, XLVI(1), 3-27.
- Ritter, J. R. (1998). Initial public offerings. *Contemporary Finance Digest*, 2, 5–30.

- Sahoo, S., & Rajib, P. (2010). Aftermarket pricing performance of initial public offerings (IPOs): Indian IPO market 2002-2006. *VIKALPA The Journal of Decision Makers*, 27-43. <https://doi.org/10.1016/j.mulfin.2010.07.003>.
- Schultz, P. (2003). *Pseudo market timing and the long-run performance of IPOs*. *Journal of Finance*, 58(2), 483-517.
- Schuster, J. A. (2003). An empirical analysis of European IPO markets [Unpublished PhD Dissertation]. University of London.
- Shanghai Stock Exchange (2013). Underpricing and long-term performance of IPOs in China 2001-2011. [https://mediacast.blob.core.windows.net/production/Faculty/StoweConf/submissions/swfa2014\\_submission\\_108.pdf](https://mediacast.blob.core.windows.net/production/Faculty/StoweConf/submissions/swfa2014_submission_108.pdf)
- Shaw, D. (1971). The performance of primary common stock offerings: A Canadian comparison. *Journal of Finance*, 26, 1103-1113.
- Shiller, R. J. (1990). Speculative prices and popular models. *Journal of Economic Perspectives*, 4(2), 55–65.
- Stoll, H.R. & Curley, A.J. (1970). Small business and the new issues market for equities. *Journal of Financial and Quantitative Analysis*, 5(3), 309–322.
- Teoh, S., Welch, I., & Wong, T. (1998). Earnings management and the long-run market performance of initial public offerings. *Journal of Finance*, 53(6), 1935-1974.
- Vaidya, D., & Parajuli, P. (2004). Public offering of securities. *SEBO Journal*. 88-92.
- Wong, K. A., & Chiang, H. L. (1986). Pricing of new equity issues in Singapore. *Asia Pacific Journal of Management*, 4, 1-10.