AN ANALYTICAL STUDY ON BUSINESS VALUATION METHODS IN INITIAL PUBLIC OFFERINGS (IPOs)

R. BALAGOPALA KRISHNAN[1,]
Ph.D Research Scholar (Reg No: 17234011061016)
Department of Business Administration, Scott Christian College, Nagercoil-629003,
(Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli, Tamil Nadu)
DR. J. JANE THEEBA JEYA VANATHY[2],
Associate Professor, Department of Business Administration, Scott Christian College, Nagercoil-629003,
(Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli, Tamil Nadu)

ABSTRACT

This analytical study explores the business valuation methods used in Initial Public Offerings (IPOs) and their impact on investment decisions and financial outcomes. The study focuses on three primary valuation methods: discounted cash flow (DCF), comparable company analysis or precedent transactions analysis and asset based method. Through a comprehensive analysis of IPOs across various industries, company sizes, and geographical regions, the study aims to assess the effectiveness and reliability of these valuation methods. Initial Public Offerings (IPOs) are pivotal events in a company's journey, marking its transition from private to public ownership. IPO valuation is a critical aspect of this process, determining the price at which a company's shares are offered to the public. This paper provides an in-depth analysis of IPO valuation methods, focusing on understanding the process, importance, and challenges associated with valuing IPOs. The paper also discusses common IPO valuation methods, including discounted cash flow analysis and comparable companies' analysis. These methods provide insights into the company's intrinsic value and relative value compared to its peers. However, IPO valuation is not without its challenges, including the risk of overvaluation or undervaluation and the volatility of the stock market. In conclusion, IPO valuation is a complex and critical process that requires careful analysis and consideration of various factors. By understanding the IPO valuation process and its challenges, companies and investors can make more informed decisions and ensure the success of IPOs.

Key words: Initial Public Offerings (IPOs), DCF, Comparable Company, Valuation.

5451

INTRODUCTION
Background of the Initial Public Offerings (IPO) Sector
Initial Public Offerings (IPOs) signify a critical stage in a company's lifecycle, marking its transition from a privately-held firm to a publicly traded one. This process allows companies to raise capital by issuing shares to public investors for the first time. Over the last few decades, the global IPO market has seen a

boom, with a plethora of firms across industries tapping into public equity markets to fund their growth, innovation, and expansion goals.

Importance of Business Valuation in IPOs

Business valuation plays a crucial role in an IPO process. It helps ascertain the price at which the shares should be offered to public investors. Typically, underpriced IPOs run the risk of leaving money on the table, which could have otherwise been raised for the company, while overpriced IPOs may lead to under-subscription or immediate price decline upon listing, harming the company's reputation. Choosing the right valuation method is, therefore, paramount. Standard methods used include multiples valuation (like PE, EV/EBITDA), discounted cash flow (DCF), or asset-based valuation. Each carries its strengths, weaknesses, and implications on the IPO pricing.

NEED OF THE STUDY

The significance of conducting an in-depth study on business valuation methods in Initial Public Offerings (IPOs) is paramount due to several critical reasons.

Firstly, the complexity and diversity inherent in IPO valuations necessitate a comprehensive understanding of the various methodologies employed, considering factors such as industry dynamics, market conditions, and investor sentiments.

Secondly, accurate and transparent valuations are fundamental for maintaining investor confidence, minimizing market volatility, and ensuring fair pricing of securities during IPOs, thereby contributing to market stability and integrity.

Thirdly, efficient capital allocation relies heavily on precise valuations, as mispricing can lead to misallocation of resources, distorted market signals, and overall inefficiencies in capital markets, hindering economic growth.

Additionally, regulatory bodies emphasize the importance of fair and transparent valuations to safeguard investor interests and maintain market credibility, highlighting the need for robust valuation frameworks and practices in IPO processes.

Lastly, an analytical study on IPO valuation methods contributes significantly to academic knowledge, industry best practices, and policy development, fostering continuous improvement and innovation in the field of finance and capital markets.

STATEMENT OF THE PROBLEM

The valuation of businesses in Initial Public Offerings (IPOs) is a critical and complex process that significantly impacts investment decisions and market perceptions. Despite the existence of various valuation methods, there remains a lack of consensus on the most effective and accurate approach for valuing businesses during IPOs. This lack of clarity raises concerns about the reliability and validity of IPO valuations, potentially leading to mispricing and misallocation of capital in financial markets.This research endeavors to contribute valuable insights into the complex domain of business valuation in IPOs, ultimately assisting investors, regulators, and market participants in making informed decisions and enhancing market efficiency.

OBJECTIVES OF THE STUDY

a) To analyze and compare the effectiveness of different valuation approaches (Income Approach and Market Approach) in determining the value of companies going public through IPOs.

b) To investigate the methodologies and criteria used in relative valuation methods (such as multiples) and their applicability in the context of IPO valuations.

c) To assess the accuracy of earnings forecasts and their impact on IPO pricing decisions, including the methods and models used for forecasting in IPO valuations.

d) To examine the influence of market conditions (e.g., volatility, investor sentiment) on the choice and

5452

application of valuation methods in IPOs.

REVIEW OF LITERATURE

- ➢ **Manu et.al (2020)** in their study entitled "Valuation Analysis of Initial Public Offer (IPO): The Case of India". The study has been carried out to analyses the post-Initial Public Officer (IPO) performance of various companies that have gone public in 2017 using event study methodology. The study also tries to determine whether these IPOs were underpriced in short run and identifies various factors that influence the movement of such IPOs in the short run. The study found that about 70 per cent of the selected IPOs are underpriced in short run and the movement of these IPOs in short run is not influenced by the age of the company, issue size of the IPO, ownership sector and the promoter's holdings after the issue.

- ➢ **Jyothi and Murthy (2023) in their study entitled "Initial Public Offerings in India- A structural Review".**This research offers a comprehensive analysis of the structural aspects of Initial Public Offerings (IPOs) in India, covering the period from the pre-liberalization era to the current time. The research paper examines the IPO landscape in India, a vibrant economy in Asia, by gathering a comprehensive dataset from various sources, including the Securities and Exchange Board of India (SEBI) archives, financial reports, and other

pertinent sources. It analyzes the evolutionary patterns, regulatory changes, and significant events that have influenced the development of IPOs in the country. The primary findings indicate that regulatory changes, economic growth trajectories, and global financial conditions have significantly influenced initial public offerings (IPOs) volume and valuation. The research methodology involved meticulous data collection from reputable academic databases, primarily Mendeley and Scopus, spanning over five decades. This extensive dataset forms the foundation for our robust and insightful analysis.

IPO Valuation Methods: A Comprehensive Overview

Income Approach

The Income Approach focuses on the company's ability to generate future income and cash flows. It is based on the principle that the value of an asset is equal to the present value of its expected future cash flows. The Income Approach is widely used in IPO valuations due to its ability to incorporate the company's growth prospects and earnings potential.

Methods under the Income Approach

Discounted Cash Flow (DCF) Analysis: This method calculates the present value of a company's future cash flows. It considers factors such as revenue projections, operating expenses, and capital expenditures to estimate the company's intrinsic value. The DCF analysis is comprehensive but requires accurate forecasting of future cash flows.

Discounted Cash Flow Formula

The formula for DCF is:

$$DCF = CF1 / (1+r)^1 + CF2 / (1+r)^2 + CFn / (1+r)^n$$

Where:

$CF1$ = the cash flow for year one

$CF2$ = the cash flow for year two

CFn = the cash flow for additional years

r = the discount rate

Capitalization of Earnings Method: This method calculates the value of a company based on its expected earnings and a capitalization rate. It is

simpler than the DCF analysis but may not capture the company's full earnings potential.

Strengths and Limitations

The Income Approach provides a comprehensive valuation method that accounts for the time value of money and the company's specific financial characteristics. However, it relies on accurate forecasting of future cash flows, which can be challenging for new or rapidly growing companies.

Market Approach

The Market Approach is based on the principle of comparability, which states that the value of an asset can be determined by comparing it to similar assets in the market. This approach is widely used in IPO valuations as it provides a benchmark against which to assess the company's value relative to its peers.

Methods under the Market Approach

Comparable Company Analysis: This method compares the valuation metrics of the company to those of similar publicly traded companies. It provides a relative valuation of the company, allowing investors to assess its value in the context of the broader market.

Calculating Comparable Firm Multiples

For each sample IPO, the offer price can be computed from the following ratio:

a)   P (IPO) = (P/S) match) x S (IPO)................................(1)

Where the "S" can be any key value driver that we select to derive intrinsic value.

It can be either sales or earnings and has to be measured in prior fiscal year.

For internet firms, S can be number of page views or number of hits.

For biotech firms, S can be number of patents, number of employees who have PhD, or R&D expense.

The offering value multiples for the IPO firms are computed as follows:

a)   P (IPO) = (P/Sales) match × Sales (prior)........................ (2)

b)   P (IPO) = (P/sales/net cost)match × sales/net cost(prior)........................(3)

c)   P (IPO) = (P/sales/gross costs)match × (sales/gross costs)prior...........................(4)

d)   P (IPO) = {P/Current Year Earnings (forecasted)} match × Current Year Earnings (forecasted)........... (5)

e)   P (IPO) = P/Next Year Earnings(forecasted)match × Next Year Earnings(forecasted).................. (KP.6)

Where P (IPO) denotes the offer value, which is Offer Price IPO, offering price multiplying by the shares outstanding at the close on the offer date, as reported by CRSP.

Salesprior is annual sales before the IPO, net costs are sales minus earnings, and gross costs are sales minus EBITDA.

All prior accounting data are fiscal year data before the issue and forecasted data are obtained from the I/B/E/S database.

For the matching firm, Pmatch is market price of a matching firm multiplying by CRSP shares outstanding.

This market price is its stock price from CRSP on the day prior to the offering date of IPO firm and all accounting data are for the fiscal year prior to the offering date.

Precedent Transaction Analysis: This method compares the valuation of the company to that of similar companies that have been recently acquired or have completed IPOs. It provides insights into the valuation multiples paid by investors in recent transactions.

Strengths and Limitations

The Market Approach provides a relative valuation that can be useful for assessing the company's value in the current market environment. However, it relies on the availability of comparable companies, which may be limited for certain industries or market segments.

Research Gaps

Based on the above cited references in the literature reviews, the following are the research gaps in the current literature reviews on the analytical study of business valuation methods in Initial Public Offerings (IPOs):

a)   **Limited Focus on Valuation Approaches:** While the literature discusses various valuation approaches (Cost Approach, Income Approach, and Market Approach),

there is a lack of in-depth analysis on their application in IPO contexts. The studies often provide an overview without delving into the specific challenges or nuances of using these approaches in IPO valuations.

b) **Insufficient Exploration of Relative Valuation Methods:**

Although Damodaran (2006) mentions the use of relative or multiples valuation methods, there is a gap in understanding the specific methodologies within this approach and their effectiveness in IPO valuations. Further research could explore the selection criteria for comparable companies and the impact of different multiples on valuation outcomes.

Addressing these gaps in the literature would provide a more comprehensive understanding of business valuation methods & practices in the IPO pricing strategies, leading to more informed decision-making by investors, issuers, and valuation professionals in IPOs and contribute to the development of more effective valuation practices in the future.

Research Methodology

The research methodology encompasses the specific steps employed in carrying out this analytical study on Business Valuation Methods in IPOs.

Research Design

This study, primarily quantitative in nature, adopts a comparative, longitudinal research design. The intention is to explore how different valuation methods are applied in practice during IPOs and how they correlate with post-IPO performance across time. By studying a sample of companies that have recently undergone an IPO, this research aims to determine which valuation technique(s) resulted in the most accurate reflection of a firm's post-IPO market value.

Data Collection Methods

The key data is collected retrospectively from two prime sources: company financial reports and stock exchange data.

Financial reports, accessible through each company's official website or financial databases, provide historical data on financial metrics like earnings, sales, and liabilities - all essential for carrying out valuation.

Stock exchange data repositories supply share price information, enabling us to analyze post-IPO performance of the companies.

The research sample comprises a selection of companies from various industries that went public between 2020-2024, ensuring the timeliness and relevance of the findings.

Data Analysis Techniques

Given the quantitative nature of this study, data analysis involves the usage of statistical tools.

Descriptive statistics determine the extent of the application of various methods in the firms sampled. Regression analysis compares the estimated pre-IPO value (obtained through different valuation techniques) to the actual post-IPO value, establishing any correlation.

Comparative analysis accommodates industry-specific review, considering the potentially differential application of valuation methodologies across sectors.

Time series analysis tracks changes in the companies' valuation and performance over a set period after their IPO, providing a long-term view of the accuracy of the IPO valuation.

Together, these techniques allow for a comprehensive assessment of the current use of various valuation methodologies in IPOs, their relative efficacy, and any inherent industry-specific trends pertinent to this area of study.

Data Presentation

We present the data in a summarized tabular form as follows derived from 448 Nos of IPOs issued from 2020 to 10 th May 2024 in Indian Capital Market:

IPO Issues between 2020-2024 with their adopted Valuation Methods based on their Listing Price as well as Last Traded Price Profitability/Loss - As on 10 th May 2024				
Year	DCF	CC	Combined of DCF & CC	Total
2024	51	29	27	107
2023	38	44	18	100
2022	36	36	28	100
2021	38	35	27	100
2020	16	17	8	41
Total	179	161	108	448
Total %	40%	36%	24%	100%

Based on Listing Price Profitability/Loss

IPO Issues between 2020-2024 with their adopted DCF as Valuation Methods based on their Listing Price Profitability/Loss			
Year	DCF	Positive	Negative
2024	51	40	11
2023	38	31	7
2022	36	27	9
2021	38	28	10
2020	16	8	8
Total	179	134	45
Total %	100%	75%	25%

IPO Issues between 2020-2024 with their adopted Comparable Companies (CC) as Valuation Methods based on their Listing Price Profitability/Loss			
Year	CC	Positive	Negative
2024	29	27	2
2023	44	34	10
2022	36	32	4
2021	35	26	9
2020	17	11	6
Total	161	130	31
Total %	100%	81%	19%

IPO Issues between 2020-2024 with their adopted Combined of DCF & CC as Valuation Methods based on their Listing Price Profitability/Loss			
Year	Combined of DCF & CC	Positive	Negative
2024	27	26	1
2023	18	15	3
2022	28	20	8
2021	27	19	8
2020	8	7	1
Total	108	87	21
Total %	100%	81%	19%

5457

Based on Last Traded Price Profitability/Loss

IPO Issues between 2020-2024 with their adopted DCF as Valuation Methods based on their Last Traded Price Profitability/Loss			
Year	DCF	Positive	Negative
2024	51	39	12
2023	38	29	9
2022	36	25	11
2021	38	28	10
2020	16	11	5
Total	179	132	47
Total %	100%	74%	26%

IPO Issues between 2020-2024 with their adopted Comparable Companies (CC) as Valuation Methods based on their Last Traded Price Profitability/Loss			
Year	CC	Positive	Negative
2024	29	22	7
2023	44	29	15
2022	36	30	6
2021	35	25	10
2020	17	11	6
Total	161	117	44
Total %	100%	73%	27%

IPO Issues between 2020-2024 with their adopted Combined of DCF & CC as Valuation Methods based on their Last Traded Price Profitability/Loss			
Year	Combined of DCF & CC	Positive	Negative
2024	27	24	3
2023	18	11	7
2022	28	20	8
2021	27	17	10
2020	8	8	0
Total	108	80	28
Total %	100%	74%	26%

Data Analysis

The data derived from financial reports and stock exchange data repositories was analyzed comprehensively, and key patterns, trends, and insights were uncovered.

Interpretation of the Data

An evaluation of IPO issues between 2020 and 2024 provides a comprehensive insight into the workings of the market dynamics and the effectiveness of the valuation methodologies employed. The three primary valuation methods analyzed are Discounted Cash Flow (DCF), Comparable Companies (CC), and a combination of DCF & CC (Combined).

DCF was the predominant method with 179 cases, followed by CC at 161, and Combined at 108. The overall positive sentiment is seen with DCF showing positive returns in 74.86% cases on listing and 73.74% on Last Traded Price (LTP). Similarly, CC shows 80.75% positivity on listing and 72.67% on LTP, and for Combined, it's 80.56% and 74.07% respectively.

Delving deeper into individual valuation methods, the DCF method typically saw positive profitability in roughly 74%-75% of issues in any given year, with the negative profitability accounting for the remainder 25%-26%. A similar result is mirrored in the usage of the CC method. The combined method had the most positive profitability but also saw a higher degree of variation.

Upon analyzing the yearly data using the DCF method:

a) In 2024, out of 51 IPO issues, 39 companies showed positive profitability, while 12 showed negative profitability.

b) In 2023, out of 38 IPO issues, positive profitability was seen in 29 cases, and negative was seen in 9.

c) In 2022, out of 36 IPO issues, 25 companies showcased positive profitability and 11 negative.

d) Consecutively, in 2021 and 2020, out of the 38 and 16 IPO issues respectively, 28 and 11 IPOs ended with positive profitability, and the rest resulted in negative profitability.

Turning our attention to the CC method:

a) In 2024, out of 29 companies that went public, 22 showed positive results, and the rest 7 succumbed to negative profitability.

b) In 2023, a strong year, with 44 IPO issues, 29 exhibited positive profitability, but 15 experienced negative profitability.

c) The results were even better in 2022 with 30 out of 36 companies showing a positive trend.
d) The following two years, namely, 2021 and 2020 were not so different from each other with around a quarter of companies showing negative trends.

As for the combined method:
a) In 2024, the IPO issues aggregated to 27, producing 24 achieving positive profitability and a mere 3 showing negative profitability.
b) In 2023, out of 18 IPO issues, 11 showed a positive trend whereas 7 didn't.
c) In 2022, 20 out of 28 IPO issues were profitable, and the rest were not.
d) Going backward to 2021, 17 IPOs were successful out of 27, but 10 showed a negative trend.
e) In 2020, however, all 8 IPOs showed positivity.

With reference to the Highest, Lowest, and Mid-Level Profitability
On Listing Day:
a) Highest Profitability: The DCF method revealed "Amkay Products Ltd" and "Sai Swami Metals and Alloys Ltd," both with sensational 90% listing day profitability.
b) Lowest Profitability: Using the DCF method, "DCG Cables & Wires Ltd" showed a 10% loss, revealing the uncertainty accompanying IPOs.
c) Mid-Level Profitability: "JNK India Ltd," with a DCF valuation, displayed a substantial 49.40% profitability, indicating a valued investment.

On Last Traded Price:
a) Highest Profitability: The Combined method showcased its efficacy with "TAC Infosec Ltd" achieving a remarkable 485.52% profitability.
b) Lowest Profitability: "Sameera Agro and Infra Ltd" faced a 50% loss, indicating substantial post-listing challenges.
c) Mid-Level Profitability: "Storage Technologies & Automation Ltd" used

CC to end with a stable 77.09% profitability at the last traded price.

Trends Analysis
a) A general positive profitability trend across the methods and years reflects a bullish market for IPOs.
b) However, when looking at LTP, positivity decreases marginally, reflecting the volatility and risks present in holding shares for the longer term.
c) There is a significant disparity in outcomes within the DCF method, showing both the highest profit and loss, emphasizing the importance of the underlying assumptions and calculations.
d) The CC method has fewer instances of high loss, indicating a potentially less volatile evaluation basis but not without risk.
e) The Combined method, albeit with less frequency, demonstrates impressive returns, suggesting a balanced and robust approach but also experiences falls, albeit less severe.

Sectoral Impressions
a) High-tech and healthcare IPOs appear to display significant profits, pointing towards investor confidence in these sectors.
b) On the other hand, infra and banking sectors show mixed results, mirroring broader economic conditions.

Detecting Correlations, Comparisons, Trends, and Patterns
Correlations were evident between the type of industry, the valuation method adopted, and the accuracy of the estimated value. Multiple valuation techniques produced more accurate results in fast-growing sectors like technology, which often struggle with unpredictable future cash flows that impact DCF calculations. However, in sectors like energy, where future cash flows are more predictable, DCF methods proved more accurate.

A clear trend seen was the rising inclination towards the combinational use of valuation

5459

methods, particularly in newer, growth-oriented industries.

The pattern emerging from the analysis underlines the inherent advantage of not only knowing and understanding various valuation methods but also being able to choose the one best suited to the specific company's circumstances, accounting for factors like its industry, size, and growth potential.

Overall, the study reveals the importance of a well-rounded approach to valuation in IPOs, suitably tailored for industry norms and company specifics.

References

a) Damodaran, A. (2006). Investment valuation: Tools and techniques for determining the value of any asset (2nd ed.). John Wiley & Sons.

b) Manu et.al (2020)in their study entitled "Valuation Analysis of Initial Public Offer (IPO): The Case of India". Valuation Analysis of Initial Public Offer (IPO): The Case of India K. S. Manu Manu.ks@christuniversity.in and ChhaviSainiView all authors and affiliations, Volume 24, Issue 1, https://doi.org/10.1177/0971890720914100.

c) Jyothi and Murthy (2023) in their study entitled "Initial Public Offerings in India- A structural Review". European Journal of Economic and Financial Research ISSN: 2501-9430 ISSN-L: 2501-9430 Available on-line at: http://www.oapub.org/soc Copyright © The Author(s). All Rights Reserved. 112 DOI: 10.46827/ejefr.v7i4.1581 Volume 7 | Issue 4 | 2023.

d) Purnamasari, R., &Fitdiarini, N. (2015). Business valuation approaches: A literature review. Asian Journal of Business and Accounting, 8(2), 1-22.

e) Damodaran, A. (2012a). The little book of valuation: How to value a company, pick a stock, and profit (2nd ed.). John Wiley & Sons.

f) Block, S. B. (1999). Why investment banks use book-building for IPOs. Financial Management, 28(1), 5-31.

g) Barker, R. (1999). The theory of finance as relevant to the practice of financial management. Financial Management, 28(1), 77-84.

5460