A Comparative Study on Intrinsic Value Versus Market Value of Mid-Cap Stocks Using the Dividend Discount Model on NSE



Anitha B. M. Dsilva, Shetty Sajjan Sadashiva, and Purushottam Bung

Abstract The National Stock Exchange (NSE) is India's leading stock exchange, covering different geographic locations across the country. Midcap is a rough term that includes companies and stocks between large-cap and small-cap stocks. The classification of each company's shares depends on its market value. This study presents a comparative analysis of intrinsic versus market valuations of selected mid-cap stocks listed on the National Stock Exchange (NSE) of India using the Dividend Discount Model (DDM) and Capital Asset Pricing Model (CAPM). By evaluating 10 mid-cap companies across various sectors with 10 years of historical data, the research identifies a consistent pattern of overvaluation in market prices relative to their intrinsic values. CAPM-based expected returns, which consider risk through beta, ranged from 8.86% to 17.2% but did not align with the inflated market values, indicating potential mispricing due to speculative investor behavior or sentiment-driven trading. A t-test analysis confirmed a statistically significant difference between intrinsic and market values ($p = 0.056$), further supporting the hypothesis of systematic overvaluation. The findings suggest a diversion between fundamental valuation and actual stock pricing in mid-cap segments, raising concerns about market efficiency. For researchers, this opens pathways for studying behavioral finance and refining valuation models in emerging markets. Practitioners, especially investors and advisors, are advised to supplement market indicators with fundamental analysis tools like DDM to make informed decisions. Despite limitations such as small sample size and model assumptions, the study offers valuable insights into valuation practices and market behavior in India's capital market context.

Keywords Intrinsic value · Dividend discount model · Stock valuation · National stock exchange · Mid-cap stocks

A. B. M. Dsilva (✉) · S. S. Sadashiva · P. Bung
RV Institute of Management, Bengaluru City University, Bengaluru, Karnataka, India
e-mail: anithadsilva.rvim@rvei.edu.in; director.rvim@rvei.edu.in

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2026

E. AlDhaen et al. (eds.), *Sustainable Development Agenda 2030*, Studies in Systems, Decision and Control 646,
https://doi.org/10.1007/978-3-032-11612-3_14

1 Introduction

The stock market plays a significant role in funding the Indian business sector as part of the process of economic liberalization. The primary roles of the stock market are to provide liquidity to investors, monitor and limit the management of businesses, and mobilize investment resources directly from investors. The primary draw of equity markets is that they give governments and business owners a way to raise money straight from investors and give them liquidity. Additionally, there are recommendations that the liquid market enhance long-term economic growth prospects and resource allocation. The stock market is also expected to play a significant role in controlling business management. The growth of the stock market has been the main emphasis of liberalization in India since the early 1980s. The growth of the capital market became a crucial component of the restructuring strategy, which attracted more attention once the liberalization process was expanded and deepened in 1991. In terms of organizational structure and operational effectiveness, the Indian market has now attained global norms.

A company's shares, also known as stocks, are its ownership units that are traded on a specific venue known as the Stock Exchange. Businesses list their stocks on stock exchanges. A stock market, also known as the network of economic transactions, is the collection of buyers and sellers. Both privately traded equities and stocks (also known as shares) listed on the stock exchange are not included in this. An organization or location where stock traders (individuals and businesses) can trade stocks is called a stock exchange. It is possible to trade other stocks over the counter, or through a dealer. The exchange of ownership units for cash from the seller to the buyer is known as a trade-in stock market. In order to grant the ownership interest of a specific company, the two parties must agree on a price. The market's supply and demand for shares, which are influenced by a number of variables, including the company's fundamentals and expectations for the future, decide this price. The stock market's participants range from little individual investors to major traders with headquarters located anywhere in the world, such as banks, insurance providers, pension funds, and hedge funds. A stock exchange trader may manage, purchase, or sell orders for both their customers and themselves. There are physical stock and commodity exchanges where open-outcry transactions are conducted on a trading floor. On these exchanges, traders concurrently submit spoken bids and offers. A virtual stock market, which consists of a network of computers where traders conduct electronic trading, is the alternative kind of stock exchange. The National Association of Securities Dealers Automated Quotations, or NASDAQ, is one example of such a stock market. A prospective seller provides an asking price for a certain stock, and a prospective buyer offers a bid price. The process of purchasing and selling stocks in the market is started by their bidding and asking. When the asking and bid prices are equal, a transaction occurs. The transaction is completed on a first-come, first-served basis when there are several bids or askers.

The stock exchange facilitates the trade of securities between buyers and sellers by providing a physical or virtual platform. It provides a market for profitable stock

trading. Additionally, the exchange provides real-time trade updates for the listed stocks. The exchange also determines prices based on market conditions.

One of the most common methods used by businesses to raise long-term capital is the issuance of stock. In this manner, the business sells its shares on the open market to raise more money for business expansion. Conversely, the exchange's liquidity facilitates investors' speedy share sales. This is regarded as a crucial aspect of stock investing when contrasted with other less liquid investments (like real estate and other real estate assets). A nation's economic dynamics are significantly impacted by stock trading, which also aids in determining the social attitude underlying corporate choices. A nation's economic activity is said to be reflected in the activity of its stock market. It is also regarded as the primary gauge of a nation's economic health and progress. Business investment typically rises in tandem with share price increases, and vice versa. Personal wealth and spending will be impacted by rising stock prices. The exchange frequently serves as a clearing house for every transaction as a counterparty to buyers and sellers. Economic progress is facilitated by the stock market's steady operation. Additionally, the stock market has a significant impact in the generation of jobs. In this sense, it is reasonable to anticipate that the financial system will contribute to a nation's increased prosperity. With the government's ongoing assistance, the Indian stock market has developed into one of the most technologically advanced in the world, well-organized, highly integrated, mature, modern, and diverse in terms of population.

2 Objectives

1. To evaluate the stock prices of selected companies using DDM in the view of market uncertainties
2. To compare the valuated stock's intrinsic value with their market stock value resulting in their overvaluation and undervaluation.
3. To derive an outcome of tested applicability of DDM model for investors to take decisions.

3 Literature Review

Soumya Iyer, Binu Paul in their article 'Dividend Discount Model (DDM), as per the study based on select companies from India (2019), researchers have devised a variety of approaches for determining the intrinsic value of common stock. The 'Dividend Discount Model' (DDM), also known as the Gordon Growth Model (GGM), was proposed by Myron J. Gordon in the 1960s and is one of the techniques. The model depicts the value of a common stock as the present value of all projected future dividends, based on the basic principle of time value of money. The use of the dividend discount model to measure stock price volatility (2019), the

study looked at whether the results of the dividend discount model might be used to calculate stock price volatility. This hypothesis was not refuted based on the methods employed and the findings obtained. Cuthbertson and Nitzsche take a look at the relationship between the dividend discount model and volatility (2008). When it comes to stock valuation, the dividend discount model is given as a very basic approach that may be extremely effective in generating at least a ballpark estimate of equity value.

Eddy Sutjipto, Wawan Setiawan, Imam Ghozali in their article Determination of intrinsic value Indonesian Stock Exchange Dividend Discount Model and Discounted Cash Flow Methods [1]: In this study, two Discounted Cash Flow (DCF) models and the Dividend Discount Model will be used to evaluate stocks (DDM). Furthermore, the two models will be compared to see which is the most accurate, so that investors may select the best stocks and benefit in the future. Based on the study's findings, we can observe that using DDM, there are 40 undervalued firms (93%) and only three overpriced companies (7%), but using DCF, there are 25 undervalued companies (58%) and 18 overvalued companies (42 percent). We may infer that DDM is more accurate than DCF since the mean absolute price error (MAPE) for DDM is 46 percent, whereas the figure for DCF is 206%.

Thach Ngoc Pham, et al. [2] the research paper title "The Cross-Section of expected stock returns: new evidence from emerging Markets", the goal of the paper was to determine whether a cross-section of expected stock returns from multifactor asset pricing models is consistent in emerging markets, and they used DuPont analysis (i.e. Return on equity) and the Residual income valuation model to do so. They used time-series data from 284 non-financial companies listed on the exchange to determine return on equity and its change, both of which were significant.

B.G. Satya Prasad, et al. [3] the research manuscript named- "An Analysis of CAPM Model for Performance of stock market in India with reference to Banking, IT, Automobile companies" where the objective was to see if different sector companies could produce value for their stakeholders' using data. The population for the study included three corporate companies that are listed on the BSE, and the results showed that there was no significant difference in value creation ability and investment decision based on EVA, actual return, and risk factor of the companies. The research gap for this is that the study looked at all of India's key industries rather than a particular crucial area. Lu Zhang [4] research paper with title, "The Investment CAPM" was to see if it differed from traditional consumption CAPM in terms of asset pricing. Using the method of net present value in capital budgeting, which is a fundamental principle in corporate finance, the investment CAPM was born as an asset pricing theory that generates cross-sectional changing expected returns. Investment CAPM is a research gap for the same, as it varies from assessing after an investment based on the CAPM.

Pablo Fernandez [5], there is a systematic relationship between risk and return that might lead to market portfolio mean-variance inefficiency. The primary gap in this study is financial professionals who mix (or think that expected return and needed return are equivalent) expected cash flows and required returns.

3.1 Hypothesis

H0: There are no significant differences between Market value and Intrinsic Value.
H1: There is a significant difference between Market value and Intrinsic Value.

3.2 Research Methodology

The study follows an empirical and quantitative research design using secondary data to evaluate the intrinsic value of mid-cap stocks using the Dividend Discount Model (DDM). The technique of sampling followed for the research is a Systematic Random Sampling.

3.3 Sample Size

This study considers sample size of 10 Mid Cap companies from various sectors. Each of the selected companies considers the historic monthly data for the preceding 10 years below in Table 1.

3.4 Data Analysis

As per Table 1 the 10 midcap stocks from different sectors with 10 years past data are taken into analysis to find out its intrinsic value using Dividend Discount Model.

It can be calculated using the formula:

Table 1 Showing the 10 Mid Cap companies

SI no	Company	Market capitalization (Rs in millions)
1	ALKEM LABORATORIES	6,02,099.45
2	APOLLO TYRES	2,92,336.94
3	ASHOK LEYLAND	6,60,718.64
4	ASTRAL	3,60,736.11
5	BANK OF INDIA	5,25,605.51
6	CANARA BANK	8,75,045.73
7	EXIDE INDUSTRIES	3,14,925.00
8	FEDERAL BANK	4,82,229.38
9	TORRENT POWER	7,75,179.95
10	TVS MOTORS	12,99,695.78

Source: https://www.screener.in/screens/599148/companies-by-market-cap/

$$P = \frac{Do(1+g)}{r-g}$$

Where, P = Current value of stock, D_o = Current Value of Dividend, g = Dividend Growth Rate, r = Ke = Cost of equity (Calculated using Capital Asset Pricing Model).

CAPM is calculated according to the following formula:

$$\mathrm{Ri} = \mathrm{Rf} + \beta(\mathrm{Rm} - \mathrm{Rf})$$

Where: Ri = Expected return on a security, Rf = Risk-free rate, β = Beta of the security, Rm = Expected return on market, Rf is expected to be 4.34% as of April 2025 on T-Bills and Rm is expected to be 12% based on the last 10-year average market returns.

Table 2 compares the CAPM returns, intrinsic values, and market values of several companies within the NSE MID CAP 50 index. All listed companies, including Alkem Laboratories, Apollo Tyres, Ashok Leyland, and others, are labeled as "Overpriced," indicating their market values significantly exceed their calculated intrinsic values. This suggests these stocks may be trading at higher prices than their perceived fundamental worth, potentially due to market optimism or speculative demand. This analysis shows as a warning signal, hence investors should be careful and revalue the actual growth of these companies before buying. Overpriced stocks carry higher risk of correction especially if the market sentiment shifts. The CAPM returns, which estimate expected returns based on risk, vary across companies but do not justify the current market premiums. Investors might interpret this as a cautionary signal to reassess the valuation of these stocks before making investment decisions.

3.5 T-Test

The above Table 3 presents a statistical comparison between the intrinsic values and market values of 10 companies. The mean intrinsic value (R156.13) is significantly lower than the mean market value (R1,211.89), with high variance in both metrics, indicating wide dispersion in valuations. The Pearson correlation of 0.443 suggests a moderate positive relationship between intrinsic and market values. A one-tailed t-test (t-stat = −2.04, p = 0.056) approaches significance at the 5% level, hinting that intrinsic values may be systematically lower than market values, though not conclusively ($p > 0.05$). The two-tailed p-value (0.072) reinforces this ambiguity. The t-stat exceeding the critical value (1.83) in a one-tailed test suggests potential undervaluation of intrinsic values relative to market prices.

As the p-value is greater than to 0.05, the Null hypothesis is rejected. Therefore, there is a significant difference between Market value and Intrinsic Value.

Table 2 Showing CAPM return, Intrinsic Value and Market Value

Company	CAPM returns	Intrinsic value	Market value	Value
NSE MID CAP 50	–	–	–	–
ALKEM LABORATORIES	8.8594	608.691	5033.50	Overpriced
APOLLO TYRES	12.383	350.762	461.4	Overpriced
ASHOK LEYLAND	15.83	206.621	225.04	Overpriced
ASTRAL	11.3872	41.354	1343.60	Overpriced
BANK OF INDIA	14.6044	66.748	115.29	Overpriced
CANARA BANK	17.2088	4.512	96.53	Overpriced
EXIDE INDUSTRIES	14.5278	33.186	370.50	Overpriced
FEDERAL BANK	10.468	13.037	196.49	Overpriced
TORRENT POWER	12.9192	150.428	1538.60	Overpriced
TVS MOTORS	12.383	85.944	2737.90	Overpriced

Source: Calculated

Table 3 Showing descriptive statistics as per intrinsic value and market value

Metric	Intrinsic value (₹)	Market value (₹)
Mean	156.13	1211.89
Variance	36,284.18	27,08,533.33
Observations	10	10
Pearson correlation	0.443	–
Hypothesized mean difference	0	–
df	9	–
t Stat	−2.04	–
P(T < =t) one-tail	0.056	–
t critical one-tail	1.83	–
P(T < =t) two-tail	0.072	–

4 Discussion

This research undertakes a quantitative evaluation of intrinsic versus market valuations of 10 midcap companies across various sectors using the Dividend Discount Model (DDM) and Capital Asset Pricing Model (CAPM). The study reveals a consistent pattern where the intrinsic values, derived from fundamental financial indicators, are significantly lower than their corresponding market prices. This discrepancy suggests that all sampled stocks are "overpriced," likely influenced by speculative behavior, bullish investor sentiment, or momentum trading rather than fundamental valuation.

The CAPM returns, which reflect the expected return based on each stock's risk (beta), ranged from around 8.86% to 17.2%. However, these risk-adjusted expected returns did not correspond to the inflated market prices, implying that the premium investors are paying is not justified by the level of risk they are assuming. This creates disconnect between perceived value and actual market behavior.

The statistical analysis via a t-test supports this interpretation. Despite the p-value of the one-tailed test (0.056) slightly exceeding the 0.05 significance threshold, the rejection of the null hypothesis indicates that intrinsic and market values differ significantly. The moderate positive Pearson correlation (0.443) further suggests some alignment between intrinsic and market values, though not strong enough to indicate efficient pricing.

5 Implications and Conclusion

5.1 Implication for Research

The study's findings provide a valuable foundation for future academic investigations into market efficiency, particularly in emerging markets like India. The consistent overpricing of midcap stocks, despite relatively modest CAPM-based expected returns, suggests a need for deeper inquiry into behavioral finance dynamics such as investor sentiment, herd behavior, and market speculation. Future research could explore broader datasets over different timeframes or incorporate other valuation models, such as Free Cash Flow or Residual Income Models, to assess whether intrinsic valuation disparities persist across methodologies. Moreover, sector-specific or macroeconomic variables could be integrated into models to enhance predictive accuracy and explain the persistent gap between market and intrinsic values.

5.2 Implication for Practice

For practitioners, especially investors and portfolio managers, the results signal caution against relying solely on market prices when making investment decisions. The overvaluation detected across all sampled midcap stocks underscores the importance of incorporating intrinsic valuation methods like the Dividend Discount Model (DDM) into routine financial analysis. This is particularly relevant in bullish or volatile market phases, where investor exuberance may drive prices beyond rational levels. Financial advisors may use such analyses to adjust risk assessments, reallocate asset portfolios, or counsel clients on the prudence of long-term value investing strategies over short-term speculative gains.

6 Limitations of the Study

This study is limited by its relatively small sample size, focusing on only 10 midcap companies, which may not fully represent the broader midcap market. The exclusive reliance on the Dividend Discount Model (DDM) assumes consistent dividend payouts, potentially overlooking firms with irregular dividend policies or high growth reinvestment strategies. Additionally, the use of historical CAPM inputs may not fully capture dynamic market risks or shifts in investor expectations. The analysis also excludes qualitative factors, such as industry trends or macroeconomic shocks, which can significantly impact stock valuations. These constraints limit the generalizability and contextual depth of the findings.

References

1. Sutjipto, E., Setiawan, W., Ghozali, I.: Determination of Intrinsic Value Indonesian Stock Exchange Dividend Discount Model and Discounted Cash Flow Methods (2020)
2. Thach Ngoc Pham: The Cross-Section of Expected Stock Returns: New Evidence from Emerging Markets (2018)
3. Satya Prasad, B.G.: An Analysis of CAPM Model for Performance of Stock Market in India with Reference to Banking, IT, Automobile companies (2018)
4. Zhang, L.: The investment CAPM. Eur. Financ. Manag. **23**(4), 545–571 (2017)
5. Fernandez, P.: CAPM: an absurd model. Bus. Val. Rev. **34**(1), 4–23 (2015)