Nifty 50

Valuation Report

As on July 31st, 2023

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Nifty50

1. Introduction

1.1 Background

- The NIFTY 50 is a benchmark Indian stock market index that represents the weighted average of 50 of the largest Indian companies listed on the National Stock Exchange.
- The index has exposure to 14 sectors as on July 2023.
- Nifty 50 index was launched by National Stock Exchange (NSE) on April 22, 1996 with the inception date of November 3, 1995. The Index is well suited for benchmarking, index funds and index-based derivatives.

1.2 Key Stats

- The NIFTY 50 Index represents about 66% of the free float market capitalization of the stocks listed on the NSE as on July 2023.
- The average historical CAGR returns provided by the Index for various periods are:
  a) 15 Years – 10.53%
  b) 10 Years – 9.55%
  c) 7 Years – 9.71%
  d) 5 Years – 9.91%

1. Introduction

1.3 Background

- Nifty 50 comprises 50 companies.
- Few notable companies – HDFC Bank, Reliance Industries, State Bank of India, TCS, Hindustan Unilever, ITC, Larsen & Turbo, ICICI Bank, Kotak Mahindra, Asian Paints, Axis Bank, Tata Steel, Bajaj Finance and so on.
- Top 5 sectors of index is Financial Service, FMCG, Information Technology, Oil & Gas and Automobiles.

1.4 Sector-wise contribution in Nifty 50

Sectors	Weightage%	Sectors	Weightage%
Financial Services	37.68%	Metals & Mining	3.65%
Information Technology	12.9%	Consumer Durables	3.18%
Oil, Gas & Consumable Fuels	11.67%	Telecommunication	2.56%
Fast Moving Consumer Goods	9.47%	Power	2.23%
Automobile and Auto Components	5.94%	Construction Materials	1.88%
Healthcare	4.04%	Services	0.75%
Construction	3.71%	Chemicals	0.36%

2. Context of Valuation

2.1 Context

- The FY 2022-23 entailed a lot of uncertain events posing economic risks to almost all parts of the globe ranging from tightening Interest rates, Banking Crisis to the Russia-Ukraine War.
- The top gainers on the Nifty 50 Index were ITC, L&T, Tata Motors, NTPC and Dr Reddy. Whereas the top losers were Bajaj FinServ, Infosys, Asian Paints, Bajaj Finance and Wipro over the year.
- The Valuation report aims to determine the valuation of the Index in the above context.
- The Index has been valued considering the dividends paid, buyback yield, Future Earnings Growth, Equity Risk Premium and India's 10 Year Government Bond Yield which serves as an appropriate proxy for Risk-Free Rate. The valuation of the index is based on the methodology used by Prof. Aswath Damodaran (Dean of Valuation- NYU Stern) and his pronouncements on the Discounted Cash Flow approach. However, certain aspects of the methodology have been modified to suit the Indian capital markets and general macroeconomic scenario.
- The index's valuation date shall be 31st July 2023 and all the data used for the purpose of valuation are till 31st July 2023.

3. Approaches and Methodology

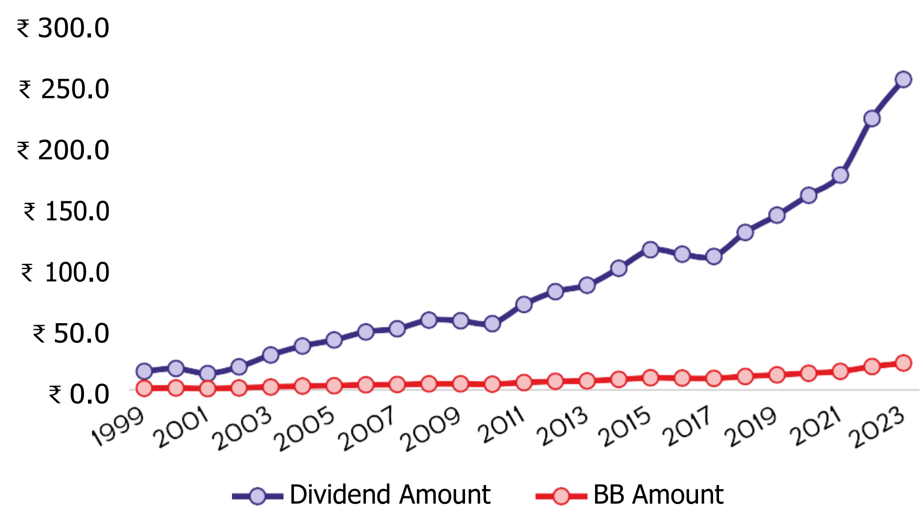
3.1 Free Cash Flow to Equity Holders

- Cash Flows being one of the key ingredients in DCF valuation implies the extent of the equity holder's right to the cash flows. Cash Flows imply Free Cash Flow to Equity holders (FCFE). However, it becomes a laborious task to derive the FCFE of all the companies in the index and hence, a convenient and effective approach has been followed where the dividend payouts and buybacks are substituted for FCFE.
- The rationale behind the above consideration is that whatever the cash a firm generates, it shall be ultimately paid to the shareholders in the long run either on liquidation or after the firm has attained maturity in its business verticals either through dividends or buybacks.
- The dividend yield has been sourced from the NSE website & the buyback data from Prof. Aswath Damodaran's website.

Historical Average Yield of Nifty 50

Years	Dividend Yield %	Buyback Yield %	Total Yield %
20 Years	1.36%	0.12%	1.48%
15 Years	1.30%	0.11%	1.42%
10 Years	1.29%	0.11%	1.40%
5 Years	1.29%	0.11%	1.40%
3 Years	1.26%	0.11%	1.37%

Historical Dividends and Buybacks



3. Approaches and Methodology

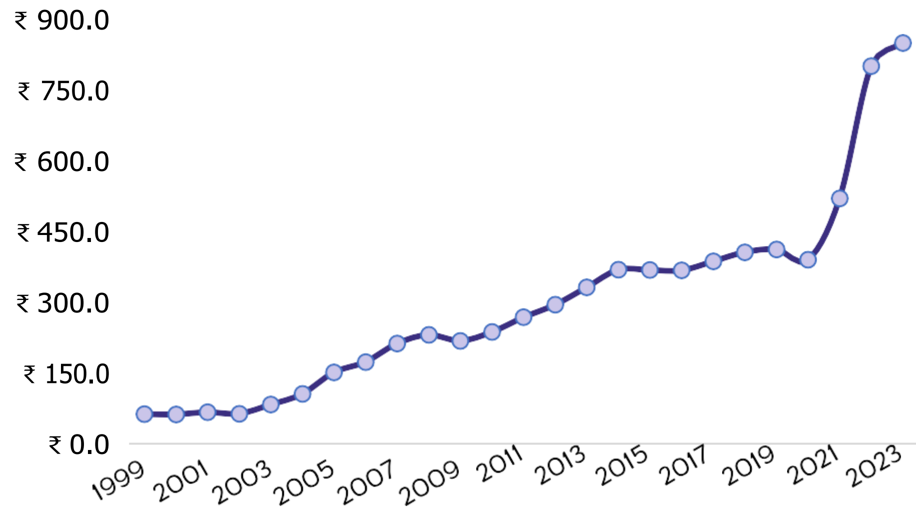
3.2 Earnings Growth

- Earnings of Nifty 50 are based on the EPS and Price of Nifty 50.
- Earnings of Nifty 50 can be derived by dividing the absolute price level by the Price to Earnings (P/E) ratio of the index.
- The P/E ratio and index levels are obtained from the NSE website and by doing a basic analysis EPS growth can be obtained.
- There could be an argument on which growth rate should be considered for the purpose of valuation. Multiple Growth rates could be used since there is no big difference between 3-year & 15-year average compounded growth %.
- Considering valuation to remain forward-looking and based on the current financial scenario, earning growth compounded for 3 years is used for the purpose of valuation in this paper because it provides the best representation of the current market trends.

Historical Average CAGR of EPS

Years	Avg EPS CAGR
15 Years	10.18%
10 Years	10.22%
7 Years	10.78%
5 Years	11.27%
3 Years	11.82%

Nifty 50 Average EPS



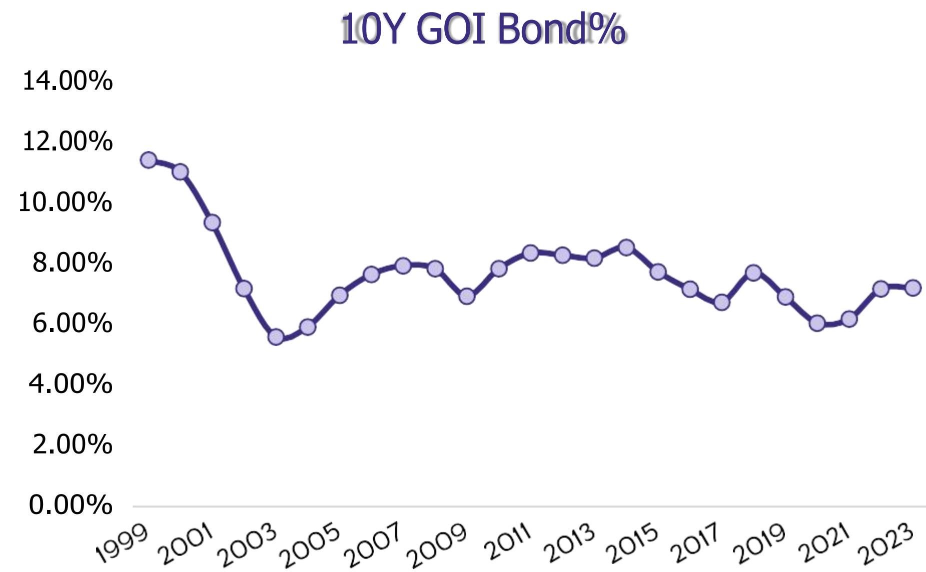
3. Approaches and Methodology

3.3 Risk-Free Rate

- Risk-free rate implies the guaranteed minimum return that any Investor shall expect for investing in a particular country. It is the basic driver for DCF valuation and is a metric of opportunity cost.
- It is a convention to use a 10Y government bond yield as the risk-free rate. However, it can be further adjusted for country risk and default risk. But, since there is a lack of data for emerging markets, it is a tedious task to account for the same and hence India's 10Y Government Bond Yield has been considered as the Risk-Free rate.
- India's 10Y Government Bond Yield has varied largely from 12% to 7%, for the purpose of valuation, the latest Risk-free rate as on 31st July 2023, has been considered to satisfy the objectives that valuation should be forward-looking.

Historical Average Rate of 10Y Govt Bond

Years	10Y Govt Yield
15 Years	7.41%
10 Years	7.15%
7 Years	6.86%
5 Years	6.72%
Latest	7.22%



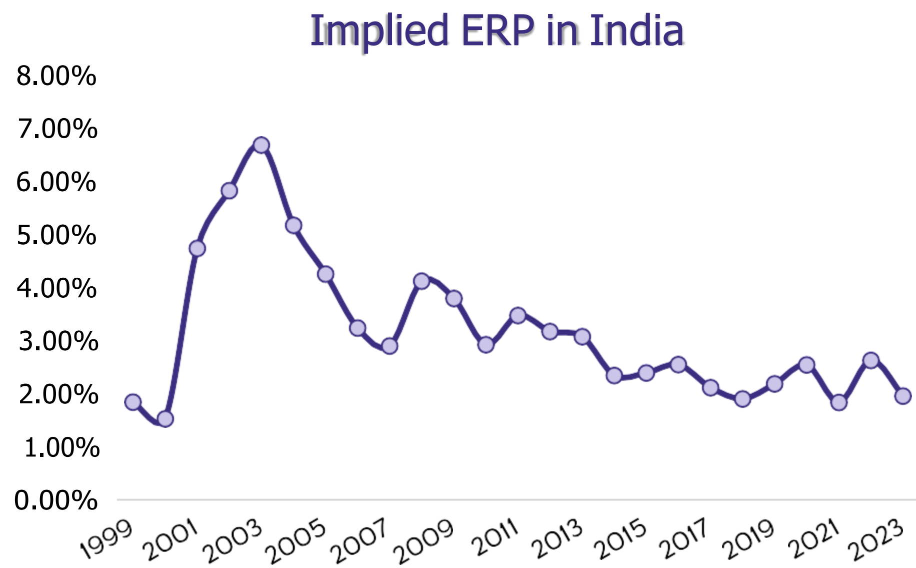
3. Approaches and Methodology

3.4 Market Risk Premium

- The market risk premium is the additional return that's expected on an index or portfolio of investments above the given risk-free rate. The market risk premium is equal to the slope of the Security Market Line (SML).
- It is an incentive for assuming risk beyond govt bonds over the equity market in general.
- A higher ERP indicates a cautious market where the investors are defensive while investing in equities and represent their willingness to pay a lower price for the same cash flow and earnings.
- The data of Market Risk premium for the valuation has been sourced from the Market Premia website.
- For the purpose of our Valuation, we have considered the latest Market Risk Premium to account for the latest developments in Indian Equity markets.

Average Implied ERP

Years	Avg Implied ERP
15 Years	2.62%
10 Years	2.28%
7 Years	2.20%
5 Years	2.26%
Latest	1.99%



4. Valuation

Nifty50

4.1 Original Case Valuation Results

Total Yield	Expected Growth	Risk-Free Rate	Market Risk Premium	Nifty 50 Valuation	Current Price	Result
1.37%	11.82%	7.22%	1.99%	22,287.03	19,753.80	Undervalued

<table>
<tr><th colspan="3">Valuation of Nifty 50</th><th>22,287.03</th></tr>
<tr><th colspan="2">Key Inputs</th><th>Assumptions</th><th>Undervalued</th></tr>
<tr><td>Date</td><td>31-07-23</td><td>31-07-23</td><td rowspan="7">The market-implied fair value of Nifty 50 is 22288. The Nifty 50 is currently trading at 19754. A 12.82% appreciation is expected from this level.</td></tr>
<tr><td>Current Nifty Level</td><td>19,753.80</td><td>19,753.80</td></tr>
<tr><td>Total Yield</td><td>3 Years</td><td>1.37%</td></tr>
<tr><td>Expected Growth</td><td>3 Years</td><td>11.82%</td></tr>
<tr><td>Risk-free Rate</td><td>Latest</td><td>7.22%</td></tr>
<tr><td>Equity Risk Premium</td><td>Latest</td><td>1.99%</td></tr>
<tr><td>Cost of Equity</td><td></td><td>9.21%</td></tr>
</table>

4. Valuation

Nifty50

4.2 Maximum Case Valuation Results

Total Yield	Expected Growth	Risk-Free Rate	Market Risk Premium	Nifty 50 Valuation	Current Price	Result
1.48%	10.18%	7.38%	2.96%	13,620.91	19,753.80	Overvalued

Valuation of Nifty 50			13,620.91
Key Inputs		Assumptions	Overvalued
Date	31-07-23	31-07-23	The market-implied fair value of Nifty 50 is 13621. The Nifty 50 is currently trading at 19754. A 31.05% correction is expected from this level.
Current Nifty Level	19,753.80	19,753.80	
Total Yield	20 Years	1.48%	
Expected Growth	15 Years	10.18%	
Risk-free Rate	20 Years	7.38%	
Equity Risk Premium	20 Years	2.96%	
Cost of Equity		10.34%	

5. Source & Disclaimer

5.1 Sources

- NSE Official Website
- Market Premia Website
- Investing.com
- Prof. Aswath Damodaran Website

5.2 Disclaimer

- This information is for educational purposes and is not an investment recommendation nor to be a representation of professional expertise.
- All analyses used herein are for illustration purposes only, and of the personal opinion of the author. This should not be considered specific investment advice. The risk of loss in trading can be substantial.
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- The author assumes no responsibility or liability for your trading and investment results. Further, it should not be assumed that the method, techniques, or indicators presented in these products will be profitable or that they will not result in losses.

5. Source & Disclaimer

5.3 End Note

I Would like to thank the readers for their time dedicated to reading the report.

Please feel free to get in touch at gaurangg@tcd.ie for any questions or feedback.

Thanks for Reading!