Nifty50

Nifty 50 Valuation Report

As on July 30, 2023

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1. Introduction

1.1 Background

- National Stock Exchange of India Limited (NSE) is one of the leading stock exchanges in India, based in Mumbai. NSE was the first exchange in India to implement electronic or screen-based trading which began its operations in 1994; a pioneer in technology which ensures the reliability and performance of its systems through a culture of innovation and investment in technology.
- The National Stock Exchange of India Limited (NSE) is India's largest financial market and the fourth largest market by trading volume.
- The NSE is the largest private wide-area network in India. The NIFTY 50 is a diversified 50 stock index accounting for 13 sectors of the economy.
- The NSE has been a pioneer in Indian financial markets, being the first electronic limit order book to trade derivatives and ETFs.

1.2 Key Stats

- The Nifty 50 stocks represent about 66% of the total float adjusted market capitalization of the National Stock Exchange (NSE).
- The Average historical CAGR returns provided by the Index for various periods are :

a) 20 years CAGR Return- 12.44%
b) 15 Years CAGR Return- 10.32%
c) 7 Years CAGR Return- 9.51%
d) 5 Years CAGR Return- 9.61%

1. Introduction

1.3 Composition of NSE

- Nifty 50 index has stocks of 50 Companies.
- The index represents 50 companies selected from the universe of Nifty 100 based on freefloat market capitalisation and liquid companies having average impact cost of 0.50% or less for 90% of the observations for a basket size of Rs. 10 Crores.
- Reliance Industries Ltd., HDFC Bank Ltd., ICICI Bank Ltd., HDFC, Infosys Ltd., ITC Ltd., TCS, L&T, Kotak Mahindra Bank Ltd., Axis Bank Ltd.
- The index comprises wide range of sectors such as Conglomerates, Financial Services, Information Technology, Energy, Telecom, Metals, Infrastructure, Automotive to name a few.

1.4 Sector wise contribution in Nifty 50

Sector	Weightage (%)
Banks	37.59%
IT Consulting & Software	12.65%
Oil, Gas and Consumable Fuels	11.99%
FMCG	9.82%
Automobile and Auto Parts	5.98%
Healthcare	3.86%
Construction	3.54%

Sector	Weightage (%)
Metals and Mining	3.52%
Consumer Durables	3.30%
Telecommunication	2.61%
Power	2.10%
Construction Materials	1.89%
Services	0.74%
Chemicals	0.41%

2. Context of Valuation

2.1 Context

- The uncertain events of FY 2022-23, such as the tightening of interest rates and the Russia-Ukraine crisis, can have a significant impact on the Sensex.
- The largest winners of the year were the banking stocks, particularly the PSU banks. In December, the Sensex achieved all-time highs. Despite the dire status of the global economy, the Sensex and Nifty 50 Index are up by more than 7% in 2022. It demonstrates the resilience of the country's retail investors.
- The top movers on the Nifty 50 Index were TCS, Infosys, Tech Mahindra, LTIMindtree, HCL Tech, Whereas, the top losers were HDFC Life Insurance, Power Grid, Titan, Dr Reddy Laboratories.
- 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 a 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 Report is prepared using assumptions. Thus, the interpretation of results shall be subjective and based on the user’s requirements. The report provides a broader idea on whether the Nifty index is “Overvalued”, “Undervalued” or “Fairly” valued which are derived primarily from the cash flows (Dividends and Buy Backs) in the hands of investors/shareholders.
- The index’s valuation date shall be “31st March, 2023” and all the data used for the purpose of valuation are till 31st March, 2023.

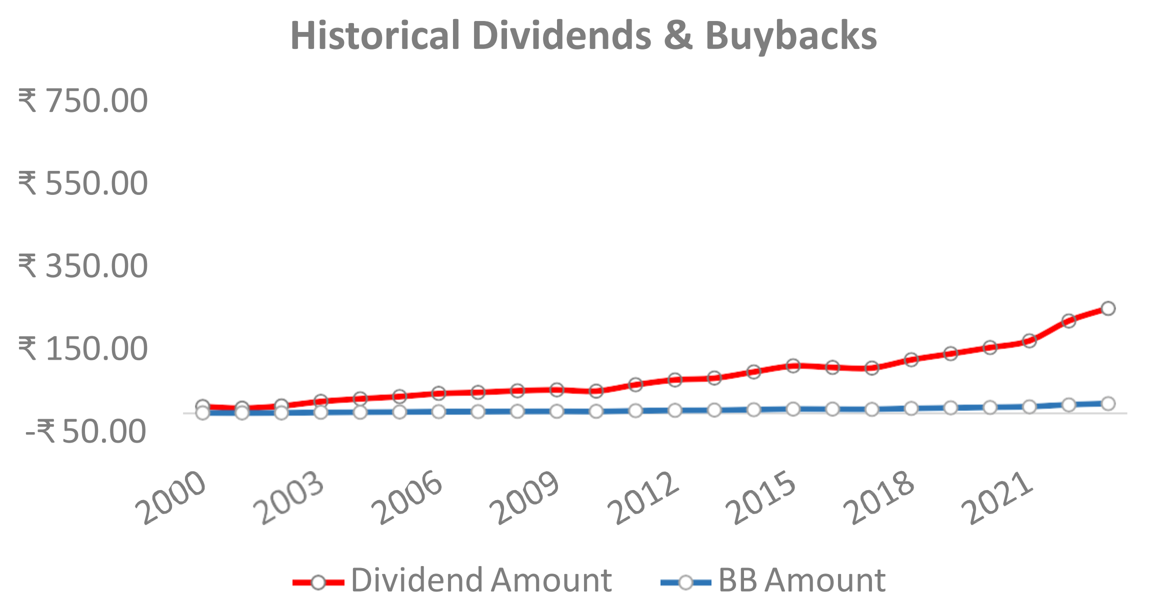
3. Approaches & Methodology

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 holders right on the cash flows. Cash flows implies Free Cash Flows to Equity holders i.e. FCFE.
- However, it becomes a laborious task to derive FCFE of all the companies in the index and hence, a convenient and effective approach has been followed where the Dividend pay-outs 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 NSE Website and since the buybacks in emerging economies are miniscule, they are not readily available.
- Hence, the Buyback data has been sourced from Prof. Aswath Damodaran's website which has been consolidated based on the sectoral buybacks conducted.
- As buybacks do not contribute a big chunk of Cash flows, using the sectoral Buyback yield doesn't cause a major fluctuations in the valuation results.

Historical average yields of Nifty

Year	Dividend Yield	BuyBack Yield	Total Yield
20 Years	1.36%	0.13%	1.49%
15 Years	1.30%	0.12%	1.42%
10 Years	1.29%	0.12%	1.41%
5 Years	1.29%	0.12%	1.38%
2023	1.39%	0.13%	1.38%



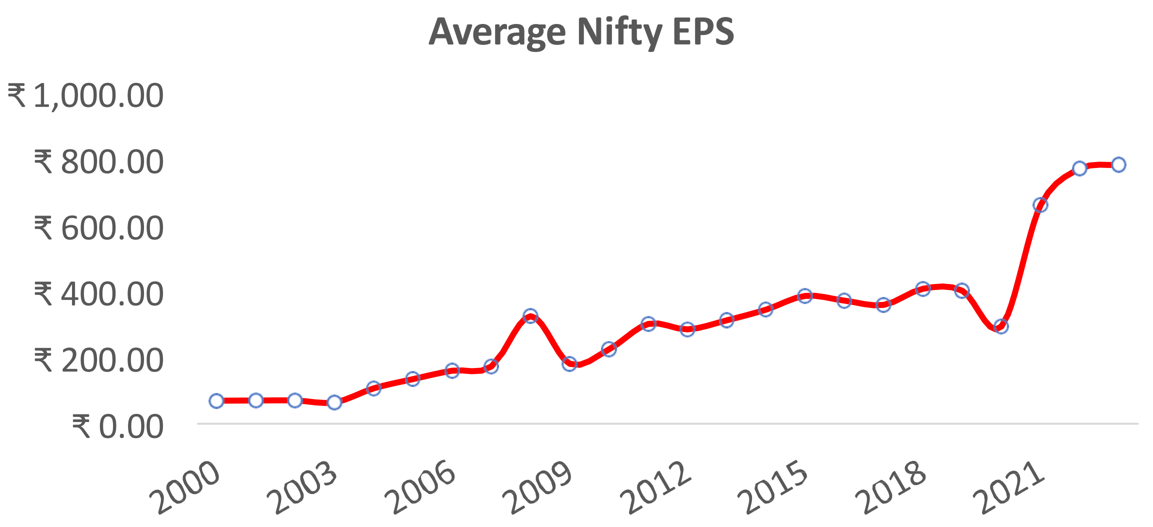
3. Approaches & Methodology

3.2 Earning Growth

- Earnings of Nifty 50 companies are function of Index EPS and Index's price.
- Earnings are computed using P/E ratio formula where the earnings are obtained by dividing Index's PE Ratio by the price of Nifty i.e. Nifty points.
- The Nifty PE ratio and the corresponding price levels are sourced from NSE website and then earnings are derived. The data in NSE website provides daily data of Nifty prices and PE ratios. Yearly Average PE range and yearly average Nifty price levels have been considered for the sake of brevity and convenience.
- EPS CAGR for 3Y, 5Y, 7Y and 10Y were calculated and average of those has been considered for the final growth figures.
- For computing future cash flows, Average EPS CAGR 3Y has been considered over 5Y, 7Y and 10y as 3Y provides the best. representation of the current market trends along with factoring the slowdown caused by Covid-19, geopolitical tensions, distressed supply chains and so on.
- However, there has been no significant difference in the growth rates between the above mentioned time frames. The same has been depicted in the table beside.

Historical average CAGR Growth of Nifty

Average EPS CAGR	Earnings Growth (%)
3 Years	12.52%
5 Years	11.31%
7 Years	10.58%
10 Years	10.11%



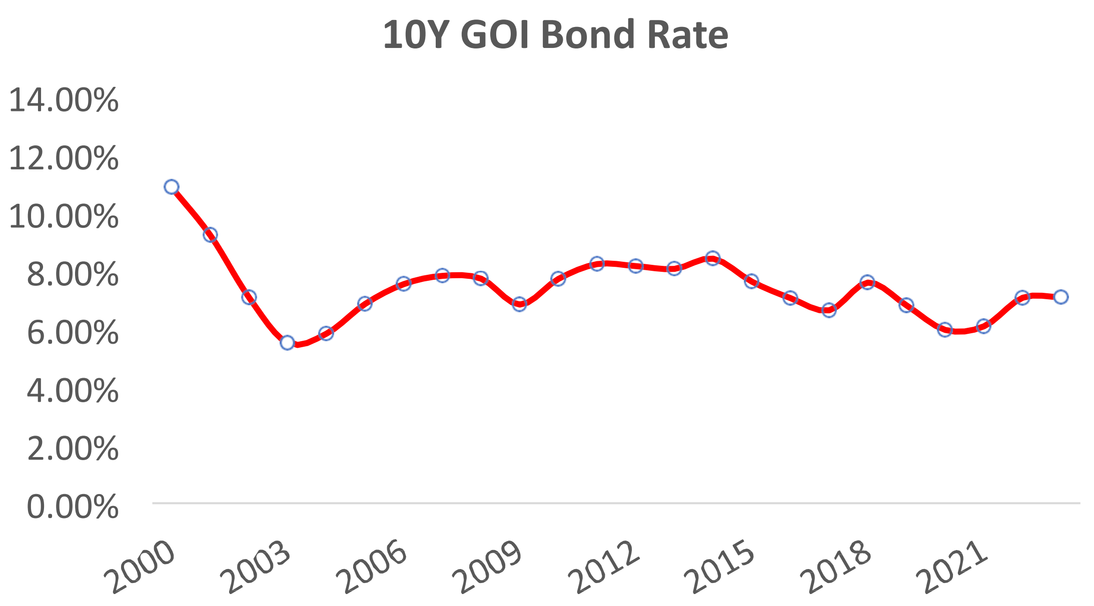
3. Approaches & Methodology

3.3 Risk Free Rate

- The risk-free rate is the guaranteed minimum return that an investor can expect for investing in a particular country.
- For valuation purposes, an economy's 10-year government yield is often used as the risk-free rate, but it is more appropriate to deduct a country's default spread to factor in sovereign default probabilities.
- India's 10-year government bond yield is used as the risk-free rate, given the lack of data on default spreads for emerging economies. The latest risk-free rate as of March 31, 2023, is used for valuation to provide a forward-looking perspective and to reflect the current economic scenario in India, as the yield has varied significantly from around 7% to 12% in the past.
- For emerging economies like India, data on default spreads may not be readily available or may be difficult to obtain. As a result, India's 10-year government bond yield is used as the risk-free rate for valuation purposes.

Historical average 10Y GOI Bond Rate of Nifty

Average Rate	10Y GOI Bond Yield
20 Years	7.38%
15 Years	7.41%
7 Years	6.86%
5 Years	6.71%
Latest	7.12%



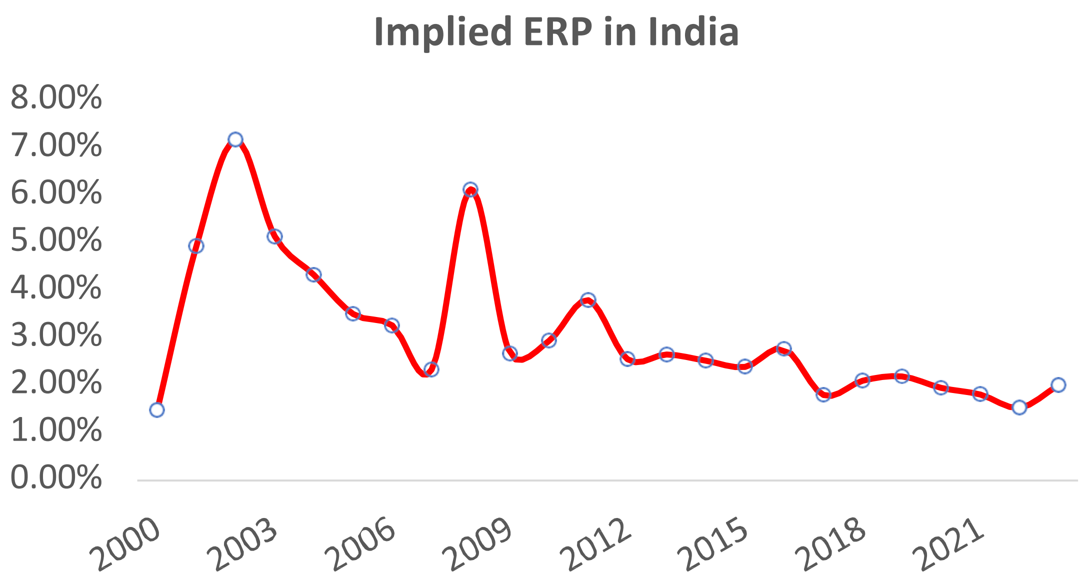
3. Approaches & Methodology

3.4 Equity Risk Premium

- the market risk premium for Nifty is the extra return that investors demand for investing in a market that is considered to be risky, over and above the risk-free rate.
- It is also a risk that is specific to the Indian market, and it varies depending on the current market situation.
- Investors expect to be compensated for this additional risk in the form of a higher return on their investments compared to risk-free assets like government bonds.
- To estimate the market risk premium, data from the Market Premia website is used for our valuation, which provides estimates of market risk premiums for different regions and countries.
- For our valuation purposes, we have considered the latest market risk premium to account for the latest developments in the Indian equity markets.

Historical average Implied ERP of Nifty

Average Implied ERP	ERP
20 Years	2.76%
15 Years	2.38%
7 Years	1.91%
5 Years	1.90%
Latest	2.01%



3. Approaches & Methodology

3.5 Time Frame for the Valuation report

- The Valuation date for the purpose of the report shall be 31st March, 2023.
- All the averages for the data such as Risk-Free Rate, Equity Risk Premium, Nifty historical returns, EPS Growth, dividend yield have been calculated from FY 2000-2001 to FY 2022-23.
- The valuation assessment for Nifty has been made by comparing the derived Nifty value as per our valuation and the closing price of Nifty as on 31st March, 2023. This comparison helps in evaluating the degree of “Overvaluation”, “Undervaluation” or “Fairly” valued of the Nifty index based on our valuation model.

3.6 Beta

When valuing an index ,the beta is typically considered to be 1, as the index is regarded as a broad representation of the overall market.

4. Valuation

4.1 Original Case Valuation Results

Total Yield of	Expected EPS Growth of	Risk-Free Rate	Equity Risk Premium	Cost of Equity	Valuation	Current Price	Result
5 Years	3 Years	Latest	Latest	9.13%	24419.64	19646.05	Undervalued

Valuation of Nifty 50

Key Inputs		Assumptions
Date	30-Jul-23	30-Jul-23
Current Nifty Level	19646.05	19646.05
Total Yield	5 Years	1.41%
Expected Growth	3 Years	12.52%
Risk-free Rate	Latest	7.12%
Equity Risk Premium	Latest	2.01%
Cost of Equity		9.13%

24419.64

Undervalued

The market implied fair value of Nifty is 24420.The Nifty is currently trading at 19647.A 24.30% appreciation is expected from this level.

Current Valuation	24419.64	
Current Level	19646.05	
Trading at Discount/Premium % of (Discount)/Premium	Traded at Discount	-24.30%

4. Valuation

4.2 Maximum Time Frame Case Valuation Results

Total Yield of	Expected EPS Growth of	Risk-Free Rate	Equity Risk Premium	Cost of Equity	Valuation	Current Price	Result
20 Years	10 Years	20 Years	20 Years	10.14%	14555.23	19646.05	Overvalued

Valuation of Nifty 50			14555.23
Key Inputs		Assumptions	**Overvalued**
Date	30-Jul-23	30-Jul-23	The market implied fair value of Nifty is 14556.The Nifty is currently trading at 19647.A 25.91% Correction is expected from this level.
Current Nifty Level	19646.05	19646.05	
Total Yield	20 Years	1.49%	
Expected Growth	10 Years	10.11%	
Risk-free Rate	20 Years	7.38%	
Equity Risk Premium	20 Years	2.76%	
Cost of Equity		10.14%	

Current Valuation	14555.23	
Current Level	19646.05	
Trading at Discount/Premium % of (Discount)/Premium	**Traded at Premium**	**25.91%**

5. Sources & Disclaimer

5.1 Sources

- BSE India Website
- Market Risk Premia
- Investing.com
- Prof. Aswath Damodaran website

5.2 Disclaimer

- The Valuations carried out are based out of good amount of assumptions which are built based on the understanding of the current scenario in Indian Capital markets.
- The report has been prepared solely for educational purpose and not emanating from the professional in practice.
- The author assumes no liability or responsibility for the losses caused by using this report as an investment advice.
- Although, every endeavor has been made to bring this report as accurate as possible, users should not rely on this report for investment purposes.

5.3 End Note

I would like to express my gratitude to the readers for taking the time to read the report. Your feedback is highly appreciated and welcome. Please feel free to get in touch at kulshrestharajat1@gmail.com for any Critisim and/or feedback.