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WHITEOAK CAPITAL MANAGEMENT

THE ART AND SCIENCE OF INVESTING

CONCEPTOPEDIA

“Cyclically Adjusted PE Ratio (CAPE Ratio)”

Learning Objectives

- Meaning of CAPE ratio.
- Formula of CAPE ratio.
- Significance of CAPE Ratio.
- Example of how to compute CAPE ratio.
- CAPE ratio value for India.
- Difference between CAPE ratio and PEG Ratio.
- Criticism of CAPE ratio.
- Conclusion.

What is meant by CAPE Ratio?

- The **"CAPE or Cyclically Adjusted PE Ratio",** also known as **"Shiller's PE ratio",** was introduced in 1988 by economists Professor Robert Shiller and John Y. Campbell as an improvement upon the classic Price/Earnings 'PE' ratio. Robert Shiller is a Nobel Prize-winning economist and renowned professor at the Yale University. It is also known as the **"PE10 ratio".**
- It helps to study the impact of economic ups and downs on the indices' Price-to-Earnings (PE) ratio.
- It thus attempts to eliminate fluctuations that can skew corporate earnings.
- The ratio is specifically applied to indices.

Here are the terms associated with classic or traditional PE ratio:

*** The Trailing PE ratio, assesses the stock prices with respect to the trailing 12 months earnings per share (EPS).**

*** The Forward PE ratio uses the forecasted earnings per share of the company over the next 12 months for calculating the price-earnings ratio.**

*** Earnings Per Share (EPS) is a financial metric calculated by dividing the Net income minus preferred dividends by the total number of outstanding common shares.**

Formula of CAPE Ratio:

- The CAPE ratio is calculated by dividing the company's share price by the average earnings (EPS) for the last or trailing 10 years adjusted for inflation, instead of a single year earnings as taken in the classic PE ratio formula.
- The inflation that is used in most countries for calculation purposes is the Consumer Price Inflation (CPI).

CAPE ratio = Share price / Average earnings per share (EPS) of a company for the last 10 years adjusted for inflation

Or

CAPE ratio = Share price / Real Average EPS of a company for the last 10 years

Significance of CAPE Ratio:

Just like PE ratio, it tells you whether the stock or index is undervalued or overvalued. Hence, it helps in framing investment strategies and deciding whether it is the right time to invest.

Assets with a **lower CAPE ratio** are generally considered to be **"undervalued"** and indicate attractive future returns, while assets with a **higher CAPE ratio** are generally considered to **be "overvalued"** and indicate poor future returns.

It helps to assess the long-term financial performance, as it leverages historical earnings data of the last 10 years and thus smoothens out the impact of economic and cyclical fluctuations.

- For instance, during **economic expansions**, companies report strong earnings and due to higher EPS value in the denominator, the traditional PE metric will show a lower artificial value.
- During **economic contractions**, the earnings of companies would be lower and hence the traditional PE ratio will artificially show a higher value due to a lower EPS value in the denominator.
- **CAPE or Shiller P/E ratio bypasses these cyclical periods** by calculating the historical 10-year average earnings, with the proper adjustments made to account for the effects of inflation.

Example:

Particulars	Value
Current Market Price (Rs.) (A)	500
Current EPS (B)	50
Current PE ratio (C = A/B)	10

Last 10 years EPS data			
Year	**EPS**	**Inflation**	**Inflation Adjusted EPS**
1	40	10%	36
2	100	15%	85
3	120	15%	102
4	80	7%	74
5	70	9%	64
6	95	12%	84
7	65	10%	59
8	102	20%	82
9	82	10%	74
10	50	7%	47
Average (D)			**71**
CAPE ratio (A/D)			**7.04**

- Let us take a hypothetical example of a company whose current share price is Rs. 500, has an EPS of 50 and its current PE Ratio is 10 (500/50).
- However, the firm has posted varied EPS numbers for the past 10 years and every year's inflation data has been also given.
- The inflation data helps to calculate the inflation adjusted EPS or Real EPS which is EPS * (1 – Inflation rate).
- By taking the average of the inflation adjusted EPS for the last 10 years, gives us a value of 71. When we divide the current market price of Rs. 500 by 71, we arrive at a CAPE ratio of 7.04.
- It shows that despite having a current PE ratio of 10, the CAPE or Shiller PE ratio is 7.04, indicating undervaluation of the stock.
- However, we also need to compare the current CAPE ratio of the company with its industry peers to get a better understanding.

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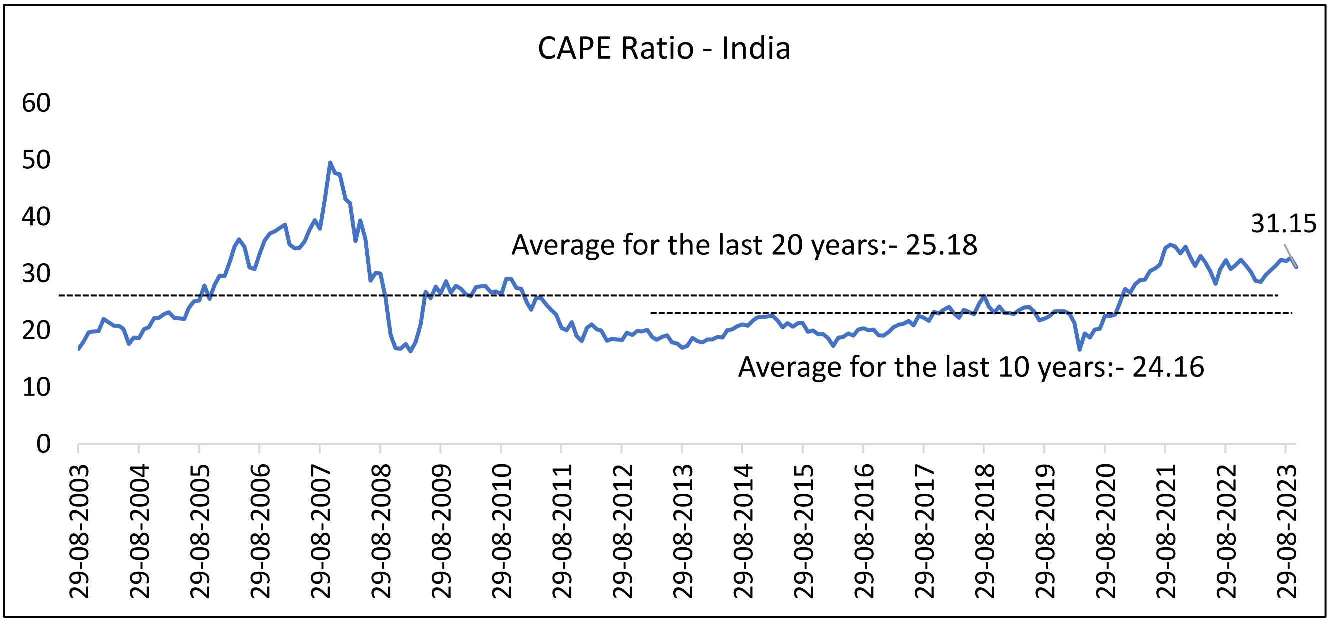
CAPE Ratio – India:



Source: https://indices.cib.barclays/IM/21/en/indices/static/historic-cape.app

Disclaimer:- The above chart is for illustrative and educational purposes only and should not be considered as an investment advice.

- **The current CAPE ratio for India (as of 31st Oct' 2023 and computed by Barclays) is 31.15 which is far higher than the average CAPE ratio values for the last 10 years and 20 years.**
- **The value is also higher than the trailing (23.10) and forward PE ratio (19.44) of MSCI India Index (as of 31st Oct' 2023).**
- **The value for India (as represented by MSCI India Index) is higher than CAPE ratio values of several developed and emerging markets, indicating that it is overvalued.**
- **However, one should not blindly trust the CAPE ratio as there are few limitations of this metric and we need to consider other variables like future earnings growth, FII and DII activities, GDP, IIP and employment data etc. to ascertain the attractiveness of an Index or Equity markets.**

Source for Trailing and Forward PE ratio of MSCI India Index:- msci.com

How different is CAPE ratio from PEG ratio?

CAPE ratio	PEG Ratio
CAPE ratio is calculated by dividing a company's stock price by the average of the company's earnings for the last ten years, adjusted for inflation.	Price/Earnings to Growth or PEG Ratio is calculated by taking a company's Price/Earnings (PE) ratio and dividing it by its expected earnings growth rate expected over a time period (typically the next 1,3 or 5 years).
CAPE ratio = Share price / Real Average EPS for the past 10 years	PEG ratio = PE ratio / Expected EPS growth rate Or PEG ratio = (Share Price/EPS) / Expected EPS growth rate
It takes historical EPS data into consideration.	It takes estimated or future EPS numbers and growth into account. Though trailing PEG ratio can also be calculated but it can be inaccurate, if the future EPS growth rates deviate from the company's historical growth.

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Criticism of CAPE Ratio

Backward Looking: - The ratio is a backward-looking ratio and not a forward looking one, as it is based on historical data.

Lagging Indicator: - CAPE ratio is perceived mostly as a lagging market indicator that is better suited for understanding the past and current market trends, and hence is yet not a reliable predictor of future market performance.

Changing rules and scenarios: - Accounting rules change over time, as well as corporate actions such as share buybacks etc. and hence CAPE ratio may not consider these changes.

Conclusion

- Despite of its criticism, it remains a good valuable indicator of sustainable performance as it smoothens out the effects of economic cycles, that artificially inflates or deflates the traditional PE ratio values.
- Though the ratio may not have always given predictions accurately, however it showed a value of 28 for S&P 500 index in January 1997, which was considered expensive there-by predicting that equity markets would be 40% lower in 10 years' time. The forecast was almost accurate as the S&P 500 index plunged by almost 60% during the Global Financial Crisis and market crash of 2008.

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