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Is the Market Overvalued?

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From time to time, some clients ask us "how's the market?" Usually, they are seeking our opinion on whether we think the stock market is overvalued, fairly valued, or undervalued. This is a difficult question to answer definitively. The primary variables to evaluate are stock market price levels, future earnings and cash flow growth rates of the companies that make up the market, and current levels of and likely future trajectory for interest rates.

There are many methods of analyzing whether the market[1] is overvalued, fairly valued or undervalued. In this article, we examine two. The first is the cyclically adjusted price-to-earnings (CAPE) ratio, which was developed by Yale professor and Nobel laureate Robert Shiller. It is also known as the Shiller P/E or P/E 10 ratio.

The CAPE ratio is calculated by dividing the current price of the market by its 10-year average, inflation-adjusted earnings. The 10-year average of historical earnings is used to smooth out short-term volatility and cyclical effects, providing a better reflection of the market's true, long-term earning power.

A high CAPE ratio indicates that the market is overvalued, suggesting lower prospective returns. A low ratio evidences the opposite condition.

While the CAPE ratio is useful, it comes with several limitations. First, it is based on historical earnings, which do not take into account future growth in profitability and cash flow. Such growth is a significant source of value.

Second, the CAPE ratio is based on earnings calculated under generally accepted accounting principles (GAAP). Many changes in accounting rules over time, as well as certain non-recurring, non-operating items such as write-offs that are included in reported earnings make GAAP earnings not comparable over time. Wharton Professor Jeremy Siegel has pointed out that accounting rule changes in the 1990's led to required asset write-offs under certain conditions, understated

Inside This Issue:

- Is the Market Overvalued? p.1

true earnings, and artificially inflated the CAPE ratio compared to historical norms.[2]

Third, the CAPE ratio is a lousy timing tool and fails to forecast the timing and/or magnitude of market corrections due to market overvaluation. Although the CAPE ratio for the market in the last century has consistently reverted to its historical mean over time, it can stay at extreme levels for an unpredictable period of time. Shiller pointed out in a 2014 article that the ratio has been a very imprecise market timing indicator.[3]

As the developer of the CAPE ratio, Shiller is well aware of its shortcoming as a timing tool. Shiller has online data that can compute the market CAPE ratio going all the way back to 1881. As an example, during the early stages of the dotcom bubble, the market CAPE ratio went over 30 (a very high level) around mid-1997, but the market continued rising significantly all the way into 2000 before a correction hit. Yet another example is when the market CAPE ratio increased from the mid-teen level during the Great Recession to around 30 in mid-2017 and hovered around that level until March 2020 when an abrupt and steep correction was brought on by covid. The market did not stay down for long; a robust and swift rebound has pushed the market CAPE ratio back into nosebleed territory currently at 38.34. Compared to the 20th century average of 15.21, the current reading indicates a very overvalued market.[4]

We next proceed to value the market using a different, but common method. This method focuses on market earnings from more recent and shorter periods and compare them to market price levels. For this, we use the market's closing price on September 23, 2021 and the earnings data from the S&P Global's website (which contains historical and aggregate analyst estimates for the near-term future). This method shows that the market has the following (price-earnings) P/E ratios:[5]

Earnings used	P/E ratio based on 9/23/21 market price
Past 2 quarters and next 2 quarters (i.e. actual data for 2021 Q1, preliminary data for 2021 Q2, and estimates for 2021 Q3 and Q4)	**23.99**
Next 4 quarters (i.e. estimates for 2021 Q3 through 2022 Q2)	**23.78**

Both readings from the table above are almost 50% greater than the historical market P/E ratio average of about 16. This seems to reflect an expensive stock market, though not as extreme as what the market CAPE ratio is suggesting.

But this is not the end of the inquiry, because both the current level and projected trajectory of interest rates significantly impact the market's valuation. Simplistically, the lower current interest rates are and the more likely future rates will stay at low levels, the higher the market can be without reaching overvalued levels.

Why? The market is an aggregation of all the publicly traded companies that make up the market. The value of each of those companies is calculated based on the sum of the discounted future cash flows projected to be produced by that company. Sustainable low rates enhance the value of that company in at least two ways. First, the discount rate used to discount future cash flows to present value depends on the levels of current market rates and their likely future trajectory. The lower the general market rates are, the lower the discount rate used, and the higher the present value of the sum of those future cash flows. Second, future cash flows are also enhanced as low rates lower borrowing costs and boost cash flow and earnings (holding all other variables constant).

Interest rates are at historical lows right now. The yield curve is anticipating higher future rates, but still very low by historical standards. Despite being way above the long-term average of 16, the above market P/E ratios may in fact greatly overstate the degree of overvaluation of the current market.

Further, P/E ratios should adjust for net cash (cash minus debt) on balance sheets of the companies making up the market. The market P/E ratio is disproportionately affected by the ratios of the largest companies making up the market. Many of the largest companies by market capitalization have huge net cash positions, which taken into account push their P/E ratios down, and in turn adjust the market P/E ratio down correspondingly.

In recognition of the significant role the level of interest rates plays in determining market valuation, Robert Shiller, Laurence Black, and Farouk Jivraj introduced a new metric in 2020 that compares the earnings yield (the inverse of the P/E ratio) against the 10-year *real* interest rate. The new metric is called the Excess CAPE Yield (ECY). It is calculated by inverting the CAPE ratio and then subtracting the 10-year *real* interest rate.[6] The higher the ECY is, the more attractive stocks are relative to bonds.

ECY data for the market are also available from Shiller's online database. The data show that the ECY for the market is currently at 3.22%, which is very close to its average for the past 20 years.[7] Possibly this suggests that with some justified adjustments and refinements, the current market is not nearly as overvalued as the above 2 methods indicate.

Regardless of whether the market is in actuality overvalued, fairly valued or undervalued, the market is composed of many different companies – the good, the bad and the ugly. Likewise, some are overvalued, others are fairly valued, and still others are undervalued. Because a) it is so difficult to gauge the valuation of the entire market definitively, b) market valuation is not a timing tool that signals when a market correction may materialize, c) any overvaluation can be corrected either abruptly by a quick, sizable correction or very slowly through a period of stagnation while market earnings and cash flow catch up and grow over time, and d) there are always undervalued stocks even in an overvalued market (and vice versa), you would be better served by spending your time researching undervalued stocks than focusing too much on the valuation levels of the general market.

[1] The term "market" used in the rest of this article refers to the S&P 500 Index.
[2] International Finance, "Jeremy Siegel Says CAPE Ratio Has a Big Bias," *International Finance*, Oct. 18, 2013, https://internationalfinance.com/jeremy-siegel-says-cape-ratio-has-a-big-bias/.
[3] Robert J. Shiller, "The Mystery of Lofty Stock Market Elevations," *The New York Times*, Aug. 16, 2014, https://www.nytimes.com/2014/08/17/upshot/the-mystery-of-lofty-elevations.html.
[4] Robert J. Shiller, "Online Data Robert Shiller," Sep. 22, 2021, http://www.econ.yale.edu/~shiller/data.htm.
[5] S&P Dow Jones Indices, "S&P 500 Earnings and Estimate Report," *S&P Global*, Sep. 15, 2021, https://www.spglobal.com/spdji/en/documents/additional-material/sp-500-eps-est.xlsx.
[6] Robert J. Shiller, Laurence Black, and Farouk Jivraj, "CAPE and the COVID-19 Pandemic Effect," *SSRN*, Oct. 19, 2020, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3714737.
[7] Robert J. Shiller, "Online Data Robert Shiller."

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