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Investment Publications Highlights



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“Eye on the Market”

Michael Cembalest, J.P. Morgan Asset Management, May 2, 2012, and October 10, 2012

Investors analyze many different ratios to gauge equity market valuations, but the Graham-Dodd, or Shiller price-earnings (P/E) ratio, is increasingly cited by investors, as it shows the market to be expensive. A primary issue with this metric is that it effectively assumes that the prior decade is highly indicative of the future. Making slight, and defensible, adjustments to the measure—e.g., assume that reported earnings rise back to their historical average level relative to operating earnings—moves current valuations from expensive to in line with historical averages.

The 2012 year-to-date gain in equity markets is due largely to multiple expansion, given that earnings have risen only modestly. As a result, it is worthwhile to assess valuations in the wake of the rally, and gauge where the S&P 500 Index stands relative to history. We recognize that equity valuation is more art than science, investors have many different metrics from which to choose, and valuations typically do not drive equity markets in the short term.

One particular valuation metric—the Graham-Dodd, or Shiller P/E—is increasingly cited by investors, as it shows the U.S. equity market to be expensive on a historical basis. In fact, the only times equities have been this expensive were the run-up to October 1929 top and the tech bubble. The measure is calculated by dividing the current index value by the rolling ten-year average of inflation-adjusted earnings. Its proponents argue that smoothing earnings in this fashion helps capture the sustainable earnings power of the index, dampening the cyclicity in profits. However, they should consider a few assumptions inherent in this

metric. One is relying heavily on the previous decade’s earnings, which can be problematic for unusual periods. For example, there have been many profit recessions since 1873 (i.e., the beginning of the “Shiller” dataset). However, the sharp fall experienced in the global financial crisis was more pronounced than any earlier decline. As a result, it seems reasonable to ask whether the previous ten years of earnings history are a good proxy for the future.

Further, it is important to remember that the S&P 500 is a dynamic index. Of the 500 constituent companies included in the index at 2001, roughly half (240) are no longer in the index. Indeed, such companies as Lehman Brothers, Bear Stearns, Circuit City, MBIA, etc. have been replaced, meaning the earnings capacity of *current* constituents is likely more resilient than *actual* constituents over the prior decade. This may be especially true given that financials account for just 14% of the index today, compared to roughly 22% in 2007.

Finally, the Graham-Dodd/Shiller measure uses “as reported,” rather than operating, earnings. While many investors prefer this metric given that some companies repeatedly label quasi-operating items as “non-recurring,” reported earnings fell to an abnormally low level relative to operating earnings during the crisis, reaching a record-low of 83% of operating earnings over the past decade. A more reasonable assumption is perhaps 88%, which is the average prior to the global financial crisis (i.e., from December 1984 to June 2007).

Given the above, it seems reasonable to adjust the current Graham-Dodd P/E ratio by the following: (1) use the current S&P constituents, rather than the historical ones, to derive ten-year inflation-adjusted earnings; (2) assume the profit recession witnessed in the global financial crisis was a less severe 20% to 30%,

making the decline comparable to earlier drawdowns from 1873 to 2002; and (3) assume a reported-to-operating earnings ratio of 88%. After making these changes, the adjusted multiple, though not cheap, appears in line with historical averages.

“An Old Friend: The Stock Market’s Shiller P/E”

Clifford Asness, AQR Capital Management,
November 2012

Recently some controversy has surrounded the use of the Shiller price-earnings (P/E) ratio to determine the attractiveness of U.S. equity market valuations. Critics believe that the severe decline in earnings during 2008 distorts average earnings and therefore shorter-term earnings may be more predictive. While there is a certain amount of validity to these concerns, the Shiller P/E remains one of the more effective tools in gauging expectations for future earnings and long-term returns.

Analysts use several different valuation techniques to help determine if the U.S. stock market is cheap or expensive relative to history. The Shiller P/E has shown some predictive power with respect to long-term stock market returns, but has attracted some criticism in the wake of the financial crisis. Putting aside the fact that no valuation method is perfect and that it is perhaps unwise to trade based on these measures, the Shiller P/E remains better than others in gauging earnings and long-term return expectations for the U.S. equity market.

The concept of the Shiller P/E arose from the observation that one-year earnings are highly volatile and probably mean reverting. To smooth the volatility, the Shiller P/E uses the average of the prior ten years of trailing real

earnings instead of just the prior 12 months (another common valuation method). The advantage of the Shiller method is that while ten years is long enough to capture one or two business cycles of earnings, it does not go too deeply into the distant past. As of September 30, 2012, the Shiller P/E was 22.2, roughly half its peak value during the 1999–2000 tech bubble and two-thirds of its height in late 1929 before the start of the Great Depression. Yet the current Shiller P/E is higher than it has been for 80% of the time since 1926, suggesting that stocks are quite expensive.

Historically, there is an inverse relationship between starting Shiller P/E and subsequent equity returns. In fact, if you compare starting Shiller P/E ratios with subsequent S&P 500 ten-year returns for every period since 1926 and divide the data into deciles, you see that forward returns fall nearly monotonically as Shiller P/Es increase. There are some caveats, of course, and despite the strong correlation between these two, some look at the dispersion of subsequent realized returns or claim that the sample set is too small. Nonetheless, it is useful as a gauge to set reasonable expectations for future returns. Based on where the Shiller is today and what subsequent equity returns have been from similar levels in the past, it is statistically very unlikely that institutions will meet nominal targets of 10% annual returns over the next decade.

Critics of the Shiller method reference the two earnings recessions since 2000. They also cite the near-constant increase in earnings growth since 1926, and point out that the drop in 2008 in particular was an anomaly. As a result, they believe any multiple that includes this number is misleading and that the 12-month trailing P/E may provide a more accurate valuation of the market. These arguments have some short-

comings. First, ten-year real earnings are also currently above their long-term trend; thus, it has not been a bad decade for earnings. Perhaps the post-2008 earnings destruction was simply making up for earnings that, for several years prior, were “too high” (essentially borrowed from the future). Finally, if 2008 was truly an outlier, should we discount years in which earnings were remarkably strong?

The other way to combat criticism of the Shiller is by looking at alternatives suggested by critics and seeing if they imply something different about valuations. For example, we could look at the median (rather than mean) of ten-year earnings. This method is therefore not affected by huge outliers. The second way would be to look at a multiple of the maximum one-year reported earnings over the last decade. While this may be too bullish, theoretically it could represent the maximum achievable earnings going forward. The third is a P/E that uses both the prior one-year and ten-year real earnings in a regression to fit the next ten-year real earnings. The problem is that these allegedly superior alternatives all still suggest that equities are expensive, as all are above their historical averages since 1926. The “median P/E” figure is currently in the 70th percentile versus its own history, while the other two figures fall into their respective 73rd percentiles. Although these measures indicate that stocks are somewhat cheaper than the Shiller would suggest, they are much closer to the Shiller P/E (80th percentile) than the 12-month trailing P/E (54th percentile).

There are other criticisms of the Shiller, of course. One is that it does not always work (in other words, there are decades with high returns despite an elevated Shiller at the beginning). Another criticism is that it has very limited usefulness for market timing.

Nonetheless, the Shiller is a useful valuation tool for gauging expectations, and “if you don’t lower your expectations when the Shiller is high without good reason ... you are probably making a mistake.” ■