

## Is The Stock Market Overvalued? (Part II)

Last month we asked the question, "Is the stock market overvalued?" And the answer we came up with, by examining a certain metric known as the Buffett Indicator, was a 100% definitive "maybe." Also, "maybe not."

This month we'd like to look at the same question again, but through a different lens. Instead of using a metric named after one of the greatest investors of our generation, we'd like to this time use a metric developed by one of the greatest economists of our generation.

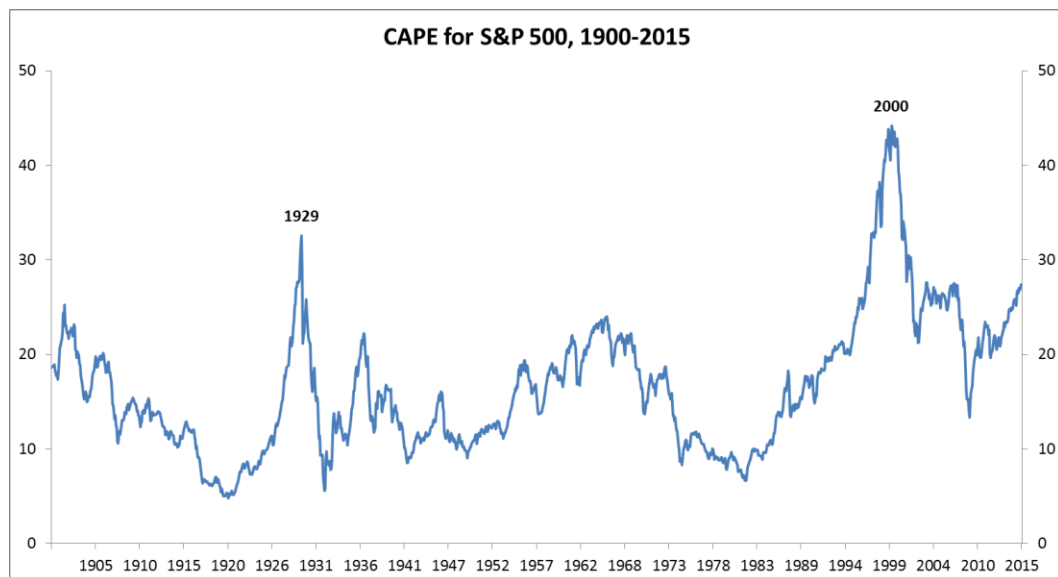
The economist in question is Dr. Robert Shiller, a professor at Yale and a recent recipient of a Nobel Prize. The metric he has developed, and which can be examined in depth at his website, is called the Cyclically Adjusted Price-Earnings ratio, or CAPE for short.

As you'll recall, the Buffett Indicator is a P/S ratio, which looks at the Price of a thing in relation to the Sales that it produces. In a stunning turn of events in which we actually disagreed with Warren Buffett, we argued that P/S is not really all that useful when applied to the market as a whole over long swaths of time.

Essentially, we were saying that a P/E ratio, which looks instead at the Price of something in relation to the Earnings, or profits, it produces, is a much more intelligent way to go about it.

And since the last half of the acronym CAPE specifically references the P/E ratio, you might think that we are proponents of its use. You will soon see whether that is actually true, but first let's look at what CAPE is telling us about the current valuation level of the stock market.

### Welcome to CAPE Fear



source: Robert Shiller



As the chart shows, CAPE bounces around over time, usually somewhere in the range of 10-20. Occasionally it will dip below 10, indicating that the stock market is selling at bargain basement levels. And occasionally it will spike quite high. In 1929 it reached a peak of 33 just before the big crash, and in early 2000 it briefly shot up above 40 before the Internet bubble burst.

At the time of this writing, we are at a CAPE level of 27, which is right about where we were from 2004 through 2007, and is surpassed only by the prior bubbly peaks of 1929 and 2000. In Shiller's database, that puts our current stock market valuation in the 94th percentile. That is, throughout recorded history, the S&P 500 has had a higher CAPE level than now only 6% of the time.

All of which seems to pretty strongly indicate that we are currently at significantly elevated valuation levels, if not in an outright bubble.

### **A Mathematical Detour**

By the way, we have explained the second half of the CAPE acronym: "PE" stands for Price-to-Earnings ratio. But what about "CA," the first half of the acronym, which we said stands for Cyclically Adjusted? That just means that the denominator of the P/E ratio Professor Shiller is using is not the Earnings from the current year, but an aggregation of all the Earnings produced over the most recent ten-year period. The theory is that a decade usually covers a full business cycle or two, so the CAPE ratio should smooth out any outlier years such as 2008.

To calculate the current CAPE of 27, one would take the value of the S&P 500 index, which is about 2,100 at the time of this writing, and put that in the numerator. For the denominator, one would take the average per-share annual profits for the S&P 500 companies over the prior ten years (i.e., from 2005 through 2014), which is about \$78.

Mathematically speaking,  $CAPE = 2,100 / 78 = 27$ .

### **Beware the Aggregation Bias**

While all of that seems plenty frightening, there are some serious drawbacks to using CAPE as your only market valuation indicator, several of which specifically relate to the current environment.

The first problem we find with CAPE relates to the fact that it uses reported accounting profits for the prior ten years as its denominator. For instance, the \$78 figure above aggregates the profits for each company in the S&P 500 index from 2005 through 2014. However, the reported accounting profits in the 2008/09 bear market took a *huge* plunge from 2007 levels: in fact, they declined by 92%. The reason for this incredible decline is from the fact that a few companies in the S&P 500 reported massive losses during this time frame: AIG had an accounting loss of \$61 billion, Bank of America \$4 billion, and Citigroup \$28 billion, to name just a few.



The reason this is a problem is that the CAPE denominator does not take into account the index weighting of each company, even though the numerator does. For example, AIG's stock during the recent financial crisis accounted for about 0.2% of the entire S&P 500 index; however, its \$61 billion loss was not weight-adjusted—it was simply added together with the profits and losses of the other 499 components of the S&P 500. That one loss immediately wiped out the profits earned by the 30 highest-earning companies for that year.

There's a name for this phenomenon, which is the Aggregation Bias. In simpler words, the Aggregation Bias says the numerator is weight-adjusted, but the denominator isn't.

### **The Denominator is Artificially Low**

The second problem is actually a cause of the first problem, which is a new set of accounting standards introduced about 15 or 20 years ago. Prior to the new standards, companies were not required to change the accounting value of their assets as their market values vacillated over time. Now, however, companies are required to make the value of certain assets recorded on their accounting books match the market value of those assets, *but only if that market value is lower than the original accounting value.*

For example, if a company bought an asset for \$5 billion in 2005, it would record that asset on its balance sheet in the amount of \$5 billion. Later, due to a severe economic decline, let's say the market value of that asset decreased to \$3 billion in 2009. In this case, the company would need to record a \$2 billion accounting loss that year. Even if the company has no plans to sell or otherwise dispose of the asset, it would still need to report a \$2 billion loss that year for accounting purposes. Continuing the example, let's say the economy later recovered and the market value of that asset increased by 2015 to \$8 billion. Not a thing would be done to the company's financial statement to record that change.

To recap, our hypothetical firm spent \$5 billion on an asset which later increased in value to \$8 billion, representing a modest 60% return on investment over 10 years. However, the only evidence of this asset on the company's financial statements would be a \$2 billion loss.

Since there were many, many firms reporting significant losses like these in the 2008-09 time frame, and since the 2008-09 time frame is included in the current denominator of CAPE (which, as a reminder, incorporates all ten years from 2005-2014), we believe the current denominator of CAPE is artificially depressed. And, as your eighth grade algebra teacher would know, if you lower a fraction's denominator, then you have increased the overall value of that fraction.

### **Other Items, and Possible Fixes**

Those are the two biggest problems with CAPE in our mind, but there are others. For instance, as we outlined in last month's article about the Buffett Indicator, due to the changing landscape of American business (i.e., there are more high-profit tech and health companies now than 50 years ago), the overall trend of corporate profit margins in America is upward.



But can anything be done about it? Can CAPE be fixed?

Perhaps we are biased in our answer, because we were both once students of his, but we believe that Jeremy Siegel of the Wharton School at the University of Pennsylvania has some good ideas on this. His most valuable suggestion so far has been to change the denominator of the CAPE ratio, from the current reported accounting profits of the S&P 500 to the federal statistic known as the National Income and Product Accounts (NIPA). According to his research, this switch would accomplish two important things: it would do a better job of predicting future expected returns from investing in the stock market, and it would indicate that today's environment should not be viewed as a potential bubble. Drs. Siegel and Shiller are actually close friends, and we are hopeful that the two will be able to work together to improve upon Shiller's original CAPE work.

### **Feel Free To Ignore All of This—We Certainly Will**

But, as we mentioned last month, "we have no horse in this race. We will neither profit nor suffer, based solely on the valuation level of the market as a whole. We are individual stock pickers, and we have no interest in making any sorts of calls of market tops or market bottoms. We have seen others chase after that fool's errand so many times in the past, we have seen the egg that inevitably ends up on their face, and—frankly—we're just fine with our complexions the way they are."

All we can do is look at the investment universe on a stock-by-stock basis. If we find one that appears to be selling at a bargain price, we may buy it. If one we own seems to be selling at a price that's higher than we think it's intrinsically worth, we may sell it. We believe that, over the course of time, this strategy will reward our patience and selectivity.



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