# QUARTERLY NEWSLETTER

January 22, 2014

**Market Commentary:**
2013 proved to be another remarkable year for developed market equities overall, with the S&P500 posting a whopping 32.39% return for the year. Foreign large cap developed markets did lag the S&P500 return, but their return of 22.71% is certainly outstanding (see performance summary on next page).

Though developed foreign markets did perform well last year, the euro zone continues to struggle with an uncomfortably low inflation rate of 0.8% overall. Inflation in the more debt laden countries consisting of Spain, Portugal, and Ireland is 0.2 to 0.3% with Greece's inflation rate actually negative. It remains to be seen what the seemingly paralyzed European Central Bank will do to combat an all-out deflationary crisis across Europe, but I remain hopeful.

Meanwhile in Japan, which makes up approximately 21% of foreign developed markets, Prime Minister Shinzo Abe's radical financial restructuring appears to be taking hold. The Nikkei Index had its best year since 1972, the Japanese yen breached a key level of 105 to the US dollar for the first time in five years, and many think the Bank of Japan is finally in the final bouts of defeating the deflationary problem Japan has faced for over two decades now.

Emerging markets once again posted losses last year, but after extreme outperformance over the first decade of this century this is the sort of "reversion to the mean" to be expected. Specifically, however, over the past year emerging market economies generally succumbed to inflationary, interest rate, and foreign currency strains resulting largely from developed world induced pressures on those markets.

As I mentioned in previous quarterly updates, bonds are no panacea for anxious investors, and across-the-board losses in bonds last year proved that out. You will recall that bond returns are derived from two sources: interest +/- changes in principal value, with changes in the prevailing interest rate being the main cause of the latter (defaults aside). With the Federal Reserve's announced intention to begin tapering its open market operations, the market is now beginning to price in future interest rate increases which are reflected in the steepening of the yield curve and falling bond prices. Since bonds have generally had positive returns since ≈1982 most of us only have memory of bonds having positive returns, but

it's important to remember that the thirty years before 1982 bonds tended to *lose* value. The decades ahead could easily be a similar pre-1982 bond environment so it's important as ever to focus on high quality bonds with a short to intermediate term duration.

Below are the annualized returns of major market indices as of December 31, 2013.

| Benchmark | 1 Year | 3 Year | 5 Year |
|---|---|---|---|
| S&P 500 Index[1] | 32.39% | 16.14% | 17.94% |
| US Small Cap Value Index[1] | 36.67% | 15.93% | 20.47% |
| Foreign Developed Market Index[1] | 22.71% | 8.15% | 12.42% |
| MSCI EAFE Small Cap Index[2] | 29.30% | 9.63% | 18.50% |
| MSCI US REIT Index[1] | 2.47% | 9.46% | 16.83% |
| Emerging Markets Index[1] | -4.28% | -2.63% | 14.39% |
| Barclays Capital US 3-7 Year Treasury Bond Index[2] | -1.87% | 2.77% | 2.65% |
| Barclays Capital US TIPS Index[2] | -8.65% | 3.42% | 5.51% |
| Barclays Capital U.S. MBS Index[2] | -1.41% | 2.42% | 3.69% |
| Barclays Capital U.S. 5-10 Year Corporate Index[1] | -1.64% | 5.83% | n/a |

1 Source: Vanguard. Visit **www.vanguard.com** for a description of each index.

2 Source: BlackRock. Visit **us.ishares.com** for a description of each index.

**Fama, Shiller, and the 2013 Nobel Prize in Economic Sciences**

Eugene Fama (University of Chicago) and Robert Shiller (Yale University) both won the 2013 Nobel Prize in economic Sciences, but who are these guys and why did they win?

Eugene Fama is perhaps best known as the father of the Efficient Market Hypothesis (EMH) which developed from his Ph.D. thesis published in 1965. EMH boiled down to its essence basically says that all available information is priced into a security, and only new information will cause the current price to change. Today, EMH supporters generally say that the market is "informationally efficient". If true, the implications are profound. It would mean that no manner of stock picking and/or market timing skill would be possible.

Then, during the 1980s and early 1990s, Fama wrote several papers with Dartmouth professor Kenneth French in attempt to explain why some portfolio returns were higher in an otherwise "efficient" marketplace. Though somewhat controversial, Fama & French (FF) hypothesize that the Capital Pricing Asset Model (CAPM) is flawed in that it only takes into account one factor: Beta. Instead, FF now believe that two other major factors are involved (size and value) which, in turn, are the factors that cause outsized returns in portfolios that overweight those

factors. Essentially, they posit that those factors are a "risk story" thus do not run in the face of EMH. This is known as the Fama and French 3-Factor model.

If markets are efficient as described by Fama's EMH, then how are apparent price bubbles to be explained? In a recent NPR interview, Fama had this to say:

> *The word "bubble" drives me nuts, frankly, because I don't think there's anything in the statistical evidence that says anybody can reliably predict when prices go down. So if you interpret the word "bubble" to mean I can predict when prices are going to go down, you can't do it. …*
>
> *I believe markets work. And if markets work those things* [bubbles] *shouldn't be predictable. If I can predict that housing prices will go down, if the market's working properly, they should go down now ... If the market's working properly the information should be in the prices.*

Fama seems to be saying that price bubbles really aren't bubbles at all. Instead, they are perhaps the result of faulty information. It's only when new information arises will prices respond, and the timing of that new information is not predictable, therefore markets are efficient after all.

Robert Shiller, on the other hand, very much believes in speculative bubbles. In his book *Irrational Exuberance* Shiller defines speculative bubbles as:

> *A situation in which news of price increases spurs investor enthusiasm, which spreads by psychological contagion from person to person, in the process amplifying stories that might justify the price increases and bringing in a larger and larger class of investors, who, despite doubts about the real value of an investment, are drawn to it partly through envy of others' successes and partly through a gambler's excitement.*

Or as Charles Kindleberger wrote in his oft-cited classic *Manias, Panics and Crashes: A History of Financial Crises*:

> *There is nothing so disturbing to one's well-being and judgment as to see a friend get rich.*

Robert Shiller did indeed accurately predict the two largest speculative bubbles of our time (the Dot-Com and Housing Bubbles), so what does this say about the legitimacy of EMH? Fama believes that Shiller was just one of many people making predictions, and with thousands of people making predictions some will necessarily be correct. Further, Fama believes that even though Shiller correctly called the last two bubbles twice is not the empirical evidence needed to be statistically reliable.

Shiller also believes that measurement is important. For instance, at a 2010 panel discussion at the World Economic Forum in Switzerland he suggested that bubbles could perhaps be diagnosed using the same methodology psychologists use to diagnose mental illness (his wife, Virginia Shiller, is a psychologist after all!). Here is Shiller's "bubble checklist":

- Sharp increases in the price of an asset like real estate or Dot-Com shares
- Great public excitement about said increases
- An accompanying media frenzy
- Stories of people earning a lot of money, causing envy among people who aren't
- Growing interest in the asset class among the general public
- "New era" theories to justify unprecedented price increases
- A decline in lending standards

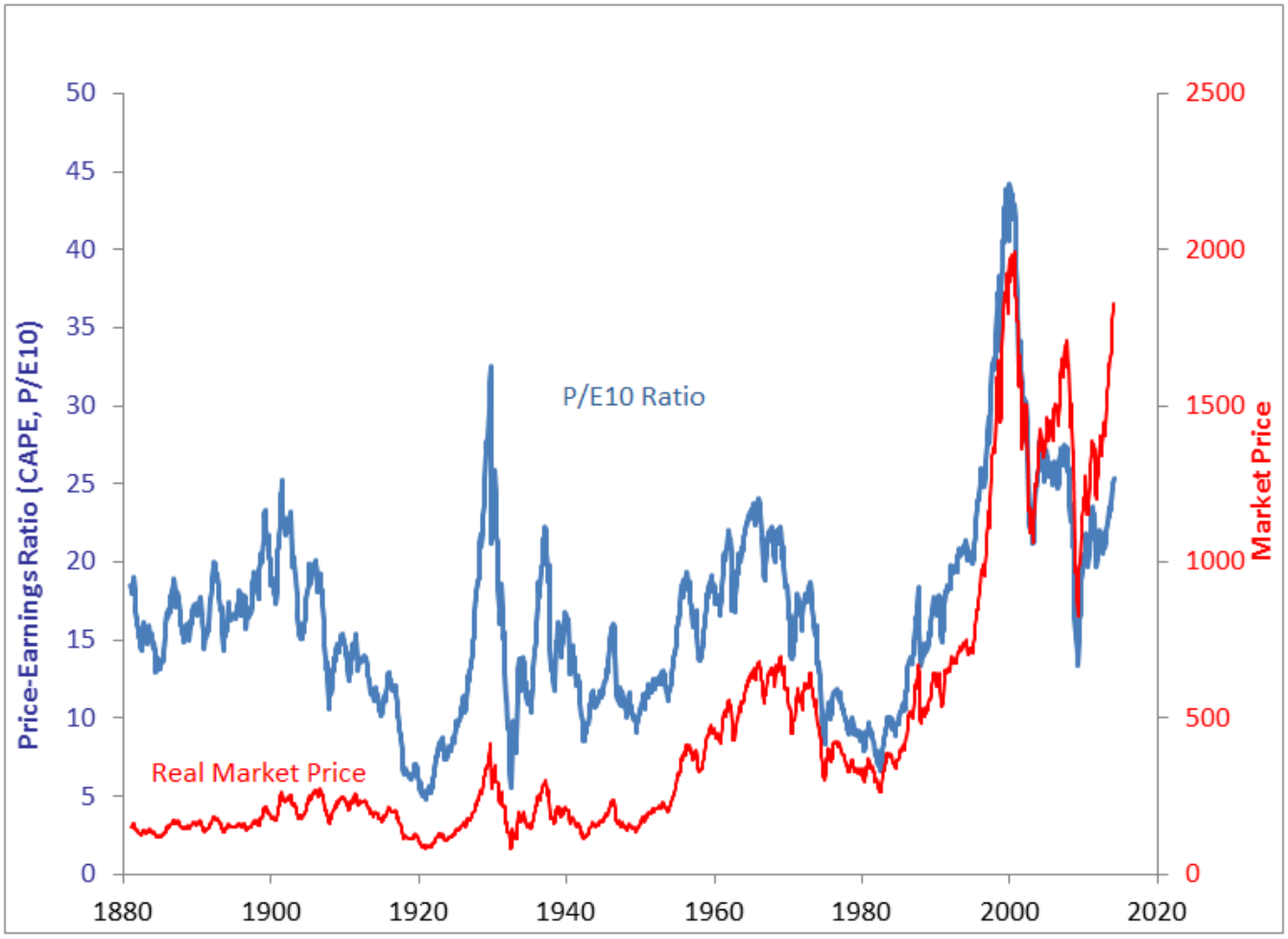
I don't know about you, but I'm not seeing much evidence that would currently support these bubble checklist items. This "bubble checklist" isn't the only measurement tool that Shiller offers, however. He has also developed the Cyclically Adjusted Price Earnings ratio (CAPE) or otherwise known as P/E10 (or Shiller's PE Ratio, if you like) for measuring whether the US stock market might be in over-heated territory.

You are probably aware of the PE ratio, which is simply Price ÷ Earnings. Generally the lower the result of this ratio the higher future returns tend to be and vice versa, with the average PE of US Large Cap stocks being approximately 15 (you'll recall that PEs leading up to the tech bust were in the 100's!).

Taking a PE snapshot offers all sorts of difficulties, though. Among them are cyclical issues and the problems associated with trying to measure the ratio real time; namely, problems due to reporting lags and inconsistent methodology. Shiller's P/E10 attempts to account for these problems by looking back at actual reported earnings and then smoothing the "cycles" by averaging the PE over 120 trailing months.

When Shiller reviewed historical P/E10 data alongside subsequent market returns he found that whenever the P/E10 ratio exceeded 25 a market correction followed, just not necessarily soon afterward. The chart on the following page reflects historical P/E10 alongside historical market prices. The data for the chart was taking directly from Shiller's own data which can be found here.

If you follow the red 'market line' you'll notice that the market did decline relatively soon after each time the P/E10 crossed over the 25 threshold. Notice that the depth and breadth from episode to episode, however, and that not all market downturns were preceded by a P/E10 25+ crossover.



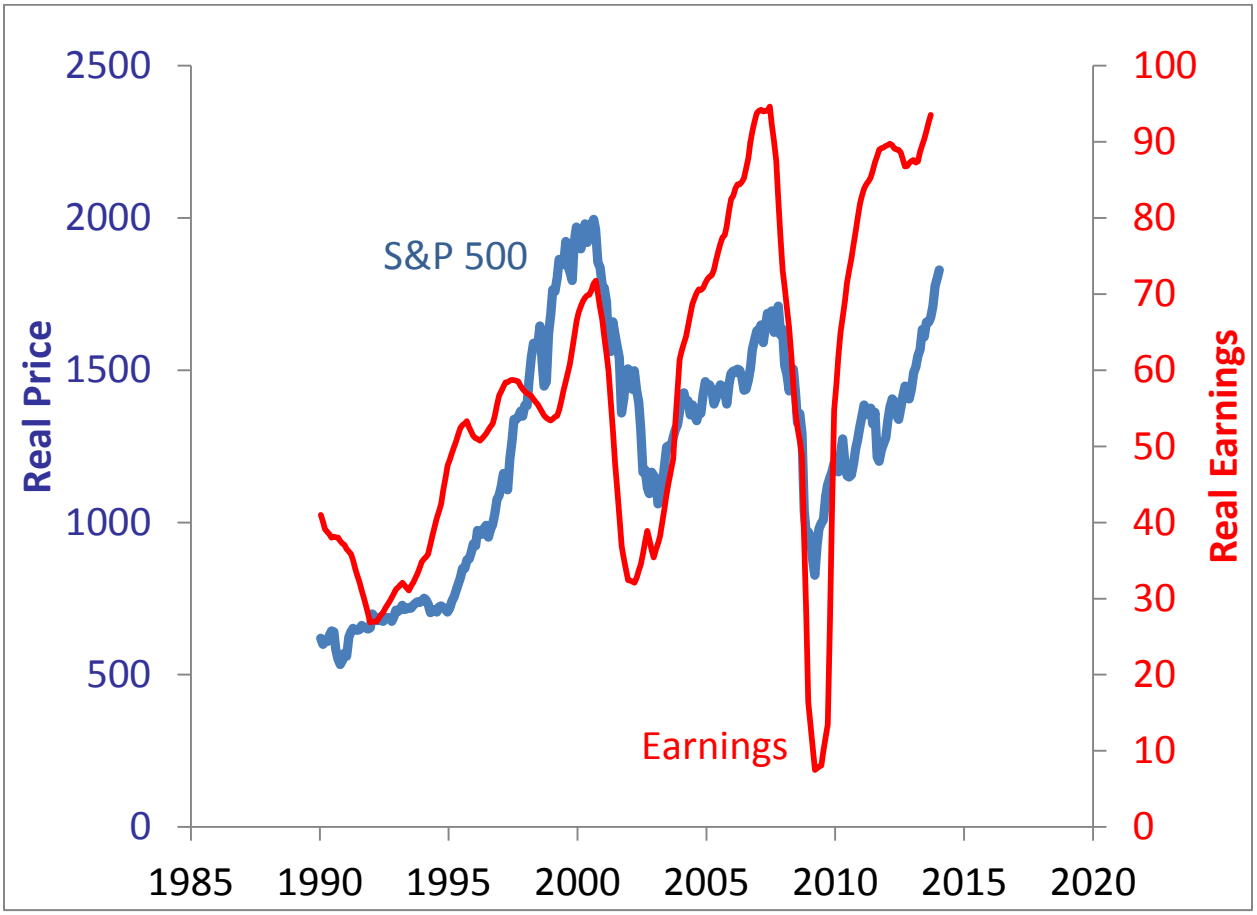

Source: Online Data Robert Shiller

You'll also be interested to know that the current P/E10 is 25.36. Though some Shiller devotees may disagree, I'm not so sure this means a precipitous market decline is imminent. First of all, few of Shiller's bubble checklist items are currently present. Secondly, we simply do not have very much historical data to go on. Relatively good data only goes back about 90 years, and while that might seem like a long data set, it certainly isn't enough to capture all potential events and probabilities.

More importantly, though, is that the PE ratio is driven by two factors: the "P" and the "E". In other words, the E could stay constant while the P increases. This would increase the PE result. Another scenario would have the P remain constant while the E decreases. This too would cause the PE to increase, but for a completely different reason (and likely in a different sort of economic environment) than in the former scenario. Though it's highly unlikely that either factor would remain constant, the point is that one of the factors could have a dramatic change in relation to the other and cause the resulting PE to be the same as if the opposite were true of each factor. Therefore, even if PE10 of 25+ has been a reasonable predictor of four historical market declines (which isn't all of the

historical declines), I believe it's too simple of an indicator to be relied upon exclusively.

The below chart reflects the S&P500 and earnings since the beginning of 1990. It should be no shock to you that the extraordinarily high P/E10 in 2000 was driven by the sky high "P" and not the "E". Fast forward to today, however, and you'll notice that the relatively high current P/E10 is driven by the low "E's" of 2008-2010, and not the "P". This is obviously perplexing and must be dealt with if we are to use P/E10 as an indicator of frothy markets.




Source: Online Data Robert Shiller

One way to deal with the effects of extraordinary outlier data is to replace it with normalized data. For instance, if we eliminate the 2008-2010 dip in "E" by holding it with at or above a more normal number like 70, the current P/E10 result would be approximately 23. That number is still high, but not the historically alarming 25+. Should we normalize that earnings dip? I'd argue we should since those years were outlier recessionary years that probably shouldn't be linked together with more normal years when making projections about the future. But who knows? As Yogi Berra famously said, "It's tough to make predictions, especially about the future."

So where does this leave Fama and Shiller? In the same NPR interview mentioned previously Fama said he'd only believe in bubbles if they were reliably predicted beforehand. He went on to say that anyone that reliably predicted the next ten bubbles would be really convincing, and he would indeed be convinced. When Shiller was asked whether he could make good on Fama's ten in a row bubble prediction test he responded, "If I lived long enough, yeah. … Uh, I think so, yeah. I'm not the most self-confident person.". Indeed, an honest response from a remarkable person.

I'm a huge fan of both Eugene Fama and Robert Shiller. In fact, check out Robert Shiller's free online Yale lectures. One I found especially good was his Econ 252 lecture which can be found here. Eugene Fama's university lectures aren't made public, but here is one you might enjoy. I, unlike most others, don't find Fama's and Shiller's positions to be irreconcilable. In fact, Shiller himself invites David Swensen to lecture each year during his Econ 252 course in which Swensen discusses, among other things, the inability to consistently time markets. Boiled down to the essence, Shiller believes that bubbles exist while Fama only chooses to believe in them if they can be consistently and accurately measured beforehand.

I choose the middle road. That is, if valuations are heady and most if not all of the "bubble checklist" items are present, I believe you should perhaps scale back an asset class target, but not bail completely. The fact is that sometimes the market has high expectations for the future and those expectations come true, but sometimes the market is wrong. Either way, it often takes the market years to get out of a euphoric state (or depressed state for that matter). As Keynes said, "Markets can remain irrational a lot longer than you and I can remain solvent." Further, you may recall that Alan Greenspan gave his famous "irrational exuberance" speech in December 1996, when the NASDAQ composite was approximately 1,200. It was not until after the NASDAQ had increased by roughly 280% more over the following three years that the Dot-Com bubble finally unwound! Many investors found it difficult to stand by idly during that time whilst their friends and neighbors got rich, much less bet against the tide (see: short selling).

The depth and breadth of the Dot-Com bubble was incredible, but staying on course and not chasing fads paid off as it would once again during the Great Recession. I have no reason to believe that staying the course will not continue to be the best approach and I do not believe that current equity valuations call for adjustments to equity targets.

As evidenced by the Nobel Prize awards, Fama and Shiller have both contributed greatly to the world of economics and finance. Though each brings seemingly opposing ideas, I believe we can learn and adopt a lot from each. From Fama we learn that we should not attempt to time the market, and returns can be explained

by various risk factors. From Shiller we learn that markets can be irrational at times, so be careful not to be swept up in the "irrational exuberance" of the crowd. From my perspective, though, Fama's theories are much more grounded in actionable quantifiable data. In fact, Fama and French's theories have been successfully tested real-world by Dimensional Fund Advisors for over two decades, while I've yet to see Shiller's performance data (though I have no doubt it'd be good if he actually acted upon his predictions!).

**In Closing**

On a fundamental basis, equities around the globe now appear fully priced, with the exception being emerging market equities. That said, if the European Central Bank can bring order and reasonable inflation back to the Eurozone, current prices in the developed world outside the US are reasonably attractive. Euro counties will also need to successfully unify their banking system as they did with their currency so many years ago, but this will be a herculean task given the multitude of different political and cultural forces.

Given the still historically low interest rate environment, bonds continue to be fraught with interest rate risk so thinking of them as a panacea would be misled. As the Federal Reserve continues to taper its open market operations, eventually leading to reversal of account positions, one would expect interest rates to continue to increase, especially at the longer end of the yield curve. Keeping bond durations low and quality high should keep returns and volatility reasonable, however. Further, I believe that tilting away from mortgage-back bonds and treasuries; and toward high quality corporate bonds makes sense.

***Remember:*** *Develop a financial plan according to your unique situation and manage your investment portfolio according to a well thought out and documented investment policy. Doing so will greatly increase the probability you will actually meet your financial goals.*

Troy Sapp, CFP®
Commencement Financial Planning LLC
www.commencefp.com

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