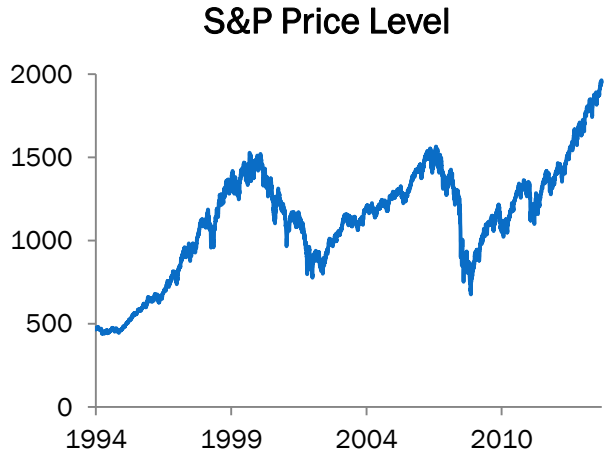
The Economy and Markets:

U.S. financial markets continue to appear healthy, though there is certainly reason to be wary. The stock market as a whole has been doing very well, with the S&P 500 closing on June 30 at a level of 1960.23. The Price-to-Earnings ratio (the "PE ratio") of the S&P 500 (averaged from its constituent stocks) is 19.05, which remains a bit on the high side, but is not excessively risky. The average PE ratio for the S&P 500 since 1981 is 20.92, but this includes some time periods in which the PE ratio was absurdly high (I discuss PE ratios in greater detail in the Quarterly Special Topic section below). It is worth noting that the VIX, which is a measure of the volatility of the S&P 500 and commonly referred to as the "fear index" is quite low at 11.60% at the end of June (its average since 1990 is 20.14%). As I have said in the past, I tend to prefer to invest counter-cyclically to this measure – I am usually a bit more fearful when the market is complacent. On balance, I'd say that, similar to last quarter, you face a relatively "typical" risk profile when entering the equity market at this time.

Markets at a Glance (June 30, 2014)	
S&P 500	1,960.23
Dow Jones	16,826.60
10 yr. U.S. Treasury	2.52%
3mo U.S. Treasury	0.01%
GDP Growth (last quarter)	-2.9%
Unemployment Rate	6.3%

As of June 30, the 10-year U.S. Treasury yield is 2.52%. This is a very low level, meaning consumers are able to borrow very cheaply. It is relatively bad news, however, for individuals trying to save. Safe investments are rewarded with historically low yields at the moment. Perhaps even more troublesome, risk is not particularly well rewarded either. As we will see in the discussion below, expected long-term outlook for the stock market is less than typical. Other risky securities, like corporate bonds, also have relatively low yields. For taking additional risk, investors at the moment aren't well rewarded.



At the end of the second quarter of 2014, the real U.S. economy appears to be in reasonable shape, with some very important caveats. The current U.S. unemployment rate stands at 6.3%, and while still on the high side, this rate has been steadily improving for years since the financial crisis high of 10% in October of 2009. Despite the extended period of low interest rates, inflation appears to be tame. Market implied inflation for the next 10 years averages around 2.1%.

However, there are some very important reasons for pause. Most notably, U.S. gross domestic product (GDP) declined 2.9% in the 1st quarter of 2014, revised downward from an initially estimated loss of 1%. This is disconcerting, though it is widely believed that the primary cause of the decline is

the poor weather this past winter. If that is the case, we should see a notable rebound in GDP this quarter. Until that rebound is confirmed economic risk remains. However, durable goods orders and similar statistics indicate that business investment is increasing recently. Further, while both current inflation and expectations of future inflation remain low, there are notable skeptics. For example Martin Feldstein (an economist at Harvard and former Chairman of President Reagan's Council of Economic Advisers) argues in a recent *Wall Street Journal* editorial that inflation may be accelerating. He cites several reasons for this. Most plausibly in my view, he argues that while unemployment remains on the high side (which means that workers are easy to replace and thus companies can resist wage increases), *short term* unemployment is relatively low. So those who are driving the high unemployment rate are the long-term unemployed, who have been looking for work for more than six months. Companies are relatively loath to hire from this segment. If companies are competing over a smaller pool of more desirable workers, they may bid up their salaries, increasing inflation.

I am not a believer in the argument that inflation is currently poised for a resurgence. Indeed, I believe that the unprecedented Fed intervention staved off *deflation*, which is a true economic calamity. I tend to believe that the market-derived measures of inflation are the best forecasts of it, and they currently indicate tame inflation. However, inflation affects every aspect of the economy, so it is prudent to be ever-wary of inflation risk. Even if the best forecast is low inflation, the cost of high inflation is great, and even the best forecasts are sometimes wrong.

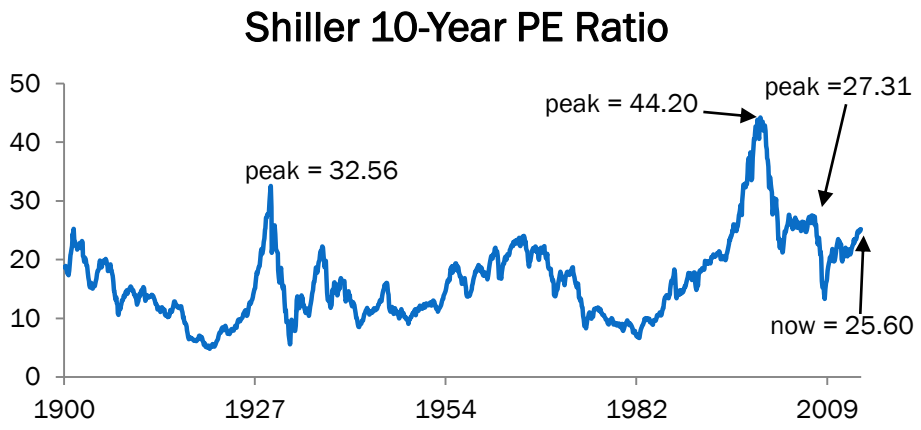
Quarterly Special Topic:
Can Stock Market Returns be Predicted?

Naturally, attempts to determine future stock market returns have long been the concern of finance practitioners and academics alike. The seminal work by Eugene Fama in 1970 claimed that markets such as the U.S. stock market were *informationally efficient* in the sense that it was effectively impossible to predict future stock prices from any information publically available – all existing information was already embedded in the prices. This work, which has become a foundation of modern financial theory, helped Eugene Fama win the Nobel Prize in economics in 2013.

Almost paradoxically to outside observers, Robert Shiller of Yale University shared the Nobel Prize with Eugene Fama. Shiller is best known academically for his work that attempts to forecast market returns – something that should not be possible if markets are truly efficient. Shiller demonstrated that while markets are efficient (completely unpredictable) in the short-run, in the intermediate run

(say, 5-10 years), asset returns are to some extent predictable. What he found was a correlation between some economic variables and future market returns. Most notably, Shiller and John Campbell of Harvard found that 30 percent of the variation of the future 10-year return to the stock market could be predicted by what they called the "cyclically adjusted price earnings ratio", or CAPE for short.

This CAPE variable requires a little bit of explanation, but is relatively straightforward. The P/E ratio of a firm is the price per share of the firm, divided by the earnings per share of a firm. For example, Microsoft stock is currently trading for around $40 per share, and last year the company earned $2.67 per share. So the P/E ratio of the stock is about 14.98. The higher this number, the more "expensive" is the stock, in a sense. You can think of it as how much money investors are willing to pay for $1 of earnings from the firm. By comparison, Amazon stock is about $320 per share, and last year's earnings per share were about $0.64. So the P/E ratio for Amazon is about 500.00. So you can buy a dollar of Microsoft's earnings for $14.98, or a dollar of Amazon's earnings for $500.00. In this sense, Amazon is clearly more expensive than Microsoft (full disclosure, I hold Microsoft stock, and this is a good part of the reason why). There may be several reasons for this discrepancy; the most common being that the market believes that Amazon's future earnings will increase sufficiently to merit the high price today.



Shiller applies a similar concept to all the constituents of the S&P 500 index, and takes an average.[1] His only twist on the standard P/E ratio is that instead of using last's year's earnings to form the ratio, he uses the average of the previous 10 years' worth of earnings for all stocks in the S&P 500. He divides the current price of the S&P 500 by this number, to get CAPE. The fluctuations of CAPE since 1900 are given in Figure 1. As you can see, it has had several local peaks, such as 32.56 in September of 1929, before the October crash and 44.20 in December of 1999 before the internet boom came crashing down. In general, Shiller has found that when CAPE is higher, the 10-year outlook for stock returns is low. Similarly, when CAPE is low, the 10-year outlook for stock returns is high.

Importantly, this is not a precise stock-market timing tool. As Eugene Fama would remind us, such tools do not exist, despite some claims by their marketers to the contrary. Shiller's CAPE is simply a mechanical method by which the *long term* expected returns may be predicted noisily. Using simple averages as an approximation, it is possible to get an annual average return of 10% over the next five years with annual returns of 12%, 9%, 12%, 7% and 10%. It may also be achieved

[1] Dr. Shiller also makes all of his data publically available here: http://www.econ.yale.edu/~shiller/data.htm

with annual returns of -10%, -30%, 30%, 20% and 30%.[2] If you'd used Shiller's method for market timing, 2 years in to the second scenario, you'd be disappointed by your results, to say the least.

However, it may be correctly argued that some adjustments around the margin are appropriate when Shiller's index shows extreme values. As Figure 1 shows, Shiller's measure has been creeping up recently. As of June 1 this value was 25.6, while its average since 1900 is about 16.5. This provides a relatively strong indication that 10-year returns on the stock market are likely to be lower than the historical average going forward. Shiller's measure provides an indication that a mild reduction in exposure to the stock market may be wise. If the measure continues to creep up, further reductions may be warranted. But Prof. Fama has not been proven incorrect. In the short-to-intermediate run, markets remain almost completely unpredictable.[3]

Related Literature

Campbell, J. and R. Shiller, 2001, "Valuation Ratios and the Long-Run Stock Market Outlook: An Update" *NBER working paper 8221*

Fama, E., 1970, "Efficient Capital Markets: A Review of Theory and Empirical Work," *Journal of Finance* 25, 383 – 417.

Fama, E., 1991 "Efficient Capital Markets: II," *Journal of Finance* 46, 1575 – 1617.

[2] This is only approximately true, but I have chosen to use examples with arithmetic averages for ease of discussion. Geometric averages would be more appropriate here.
[3] And as a true master of the dismal science John Maynard Keynes once pointed out, "In the long run we're all dead."