

The Equity Premium: A Long-Term View

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Introduction

Through April 2009, the MSCI World Index of global equities declined just over 47% in dollar terms from its peak in October 2007. The decline in the MSCI US index was almost as severe at 43% over the same period. In this note we consider what these large price declines imply for the equity premium. We take a long-term view rather than a tactical view; our analysis gives us a reasonable estimate of average returns over the next five to ten years, but should not be used to forecast returns over shorter periods such as a year.

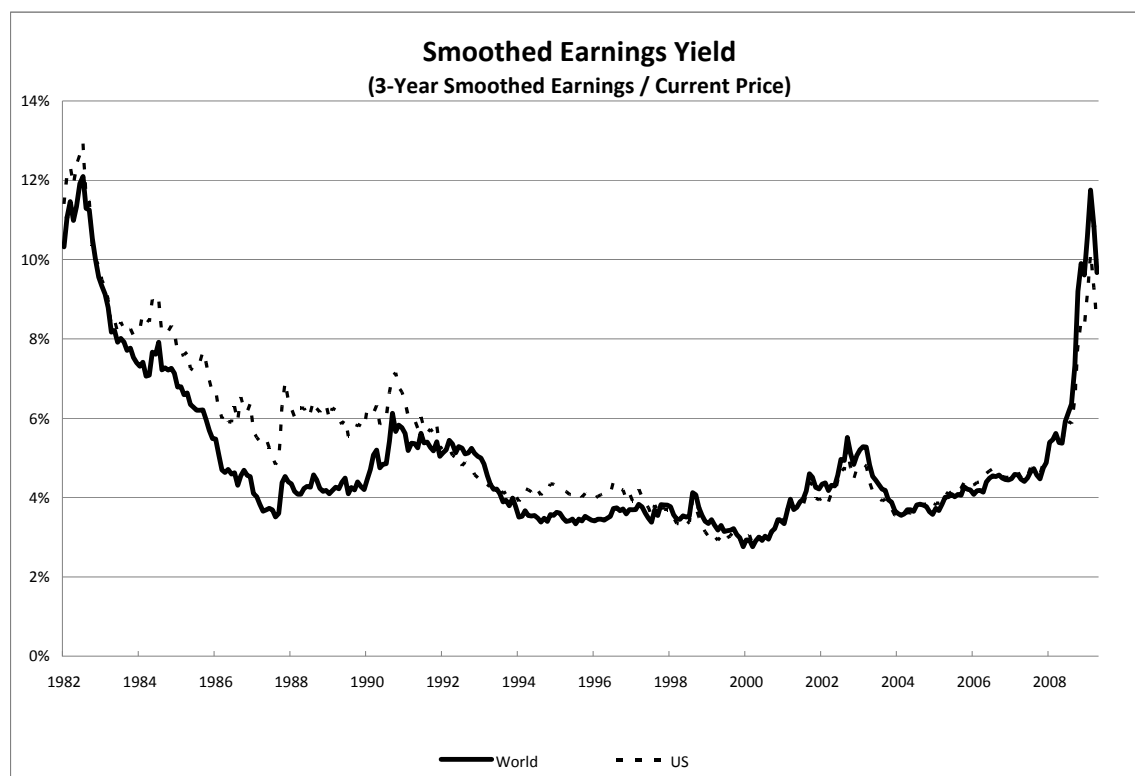
Any long-term analysis of an asset return must take into account both the cash flows that the asset will deliver in the future and the price that an investor must pay for the asset. In the case of a government bond, for example, the yield to maturity is the known rate of return if the bond is purchased at today's price and held to maturity, given the known future coupons and principal payments on the bond.

In the stock market, of course, future cash flows are not known with certainty. Nevertheless, it is possible to calculate the equivalent of a yield to maturity on the market using the fact that total return equals dividend yield plus capital gains, and that over the long term capital gains must come from growth in dividends.

Recent academic work has shown that the market's yield to maturity delivers better forecasts of the equity premium than the conventional practice of averaging past historical returns to predict future returns on stocks (Campbell and Thompson, 2008). One reason why this is so is that the market's yield to maturity rises when stock prices fall, whereas the average past return declines when stock prices fall. History shows that over long horizons, future realized returns are higher when stock prices are low, consistent with the forecast generated by the market's yield to maturity.

There are several ways to calculate the market's yield to maturity. Our preferred method combines the smoothed earnings yield (the earnings-price ratio, with earnings smoothed over three years to reduce the impact of cyclical variation in earnings), the dividend payout ratio, and corporate profitability as measured by accounting return on equity. Figure 1 illustrates the first of these inputs, for both world and US data, over the period from 1982 through September 2008.

Figure 1:



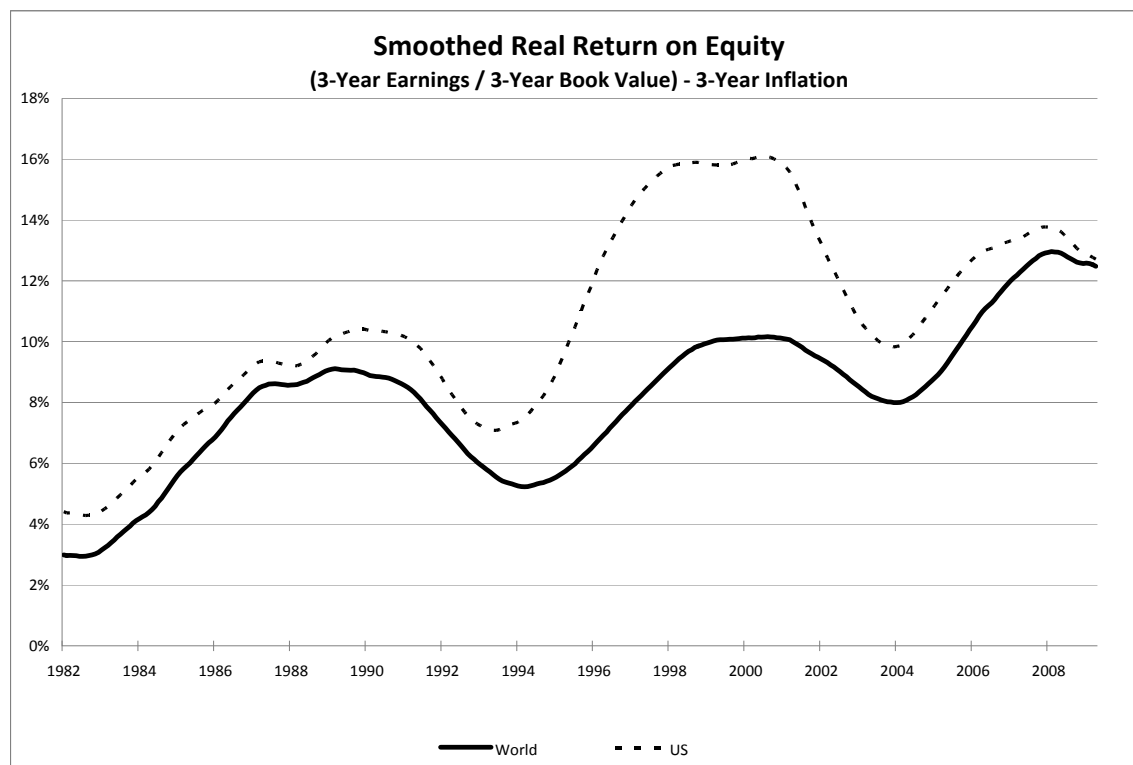
Source: MSCI Index, Inflation data from OECD, Real government bond yields from Bank of England web site and US Treasury web site.

After bottoming out at 3% at the peak of the technology bubble in the year 2000, the smoothed earnings yield increased during the 2000's, first because of price declines in the aftermath of the tech bubble, then because of strong profit growth in the mid-2000's, and most recently again because of price declines. At the end of April, even after the rally that began in early March, the smoothed earnings yield was almost 10% for the MSCI World index and over 8% for the US index, higher than at any time since the early 1980's.

These patterns do not depend sensitively on the particular valuation ratio that is plotted in Figure 1. Other reasonable choices, such as the book-to-price ratio or the ratio of prices to a 10-year moving average of earnings analyzed by Campbell and Shiller (1998, 2005), show similar movements. Campbell and Shiller look at long-term US data back to the 1880's and calculate an average price-to-smoothed-earnings ratio of about 16 over that period, close to the current level for the US market.

In Figure 2 we illustrate historical trends in corporate profitability, using a three-year moving average of earnings relative to a similar moving average of book value and adjusted for three-year inflation. This is a smoothed measure of real return on equity (ROE).

Figure 2:



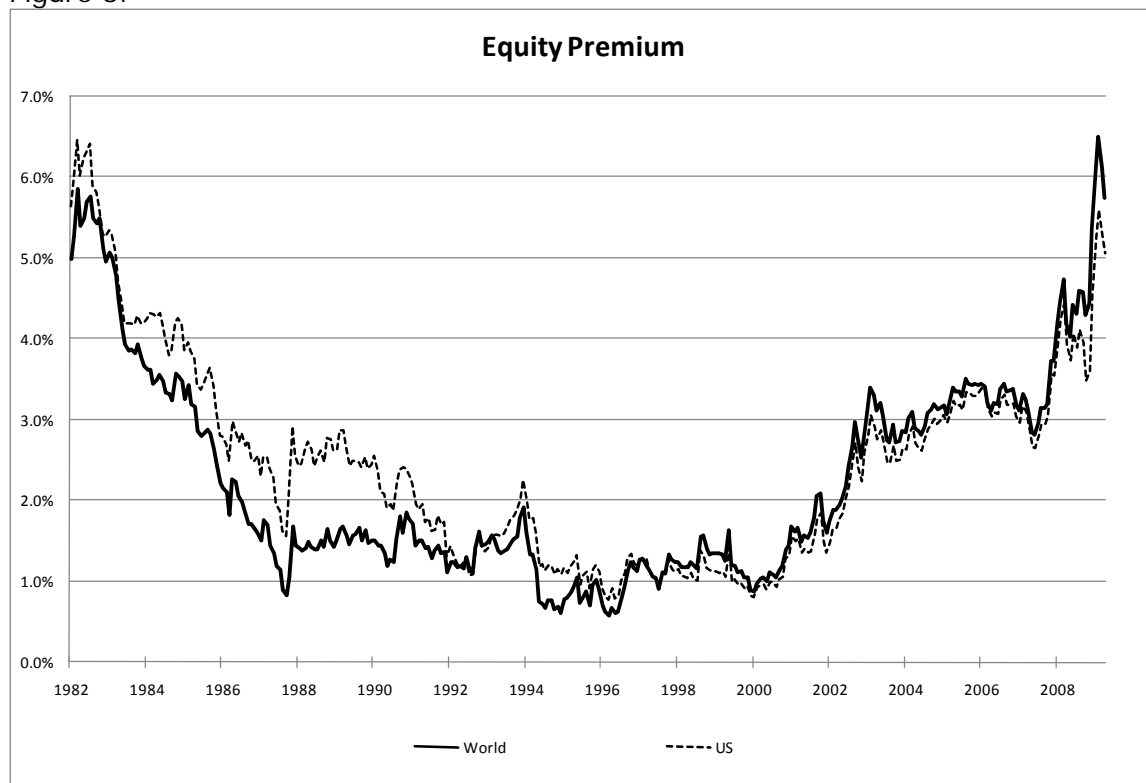
Source: MSCI Index, Inflation data from OECD, Real government bond yields from Bank of England web site and US Treasury web site

It is striking how much more profitable firms have been in the current decade than in the 1980's and early 1990's, particularly in the US. In the last eighteen months this measure of profitability has begun to decline, reflecting the current downturn, but is still well above the trough of the last downturn in the early 2000's and even the peak levels of profitability reached in the 1980's.

This history poses a difficult problem of forming reasonable expectations about the future. It is not reasonable to expect a rapid return to the profit boom of the mid-2000's; on the other hand, it is equally unreasonable to expect current losses to be long-lasting. For long-term equity analysis, a conservative assumption is a return to the average level of world ROE in the 1980's, a number like 6%.

Combining these inputs with a dividend payout ratio of 50% (close to recent averages), and subtracting the real yield on government inflation-indexed bonds, we obtain the equity premium forecasts shown in Figure 3. The long-term equity premium has increased dramatically from around 1% in the late 1990's to over 5% today: 5.7% for the world, and 5.1% for the US. Equity premium numbers like this were last seen in the early 1980's.

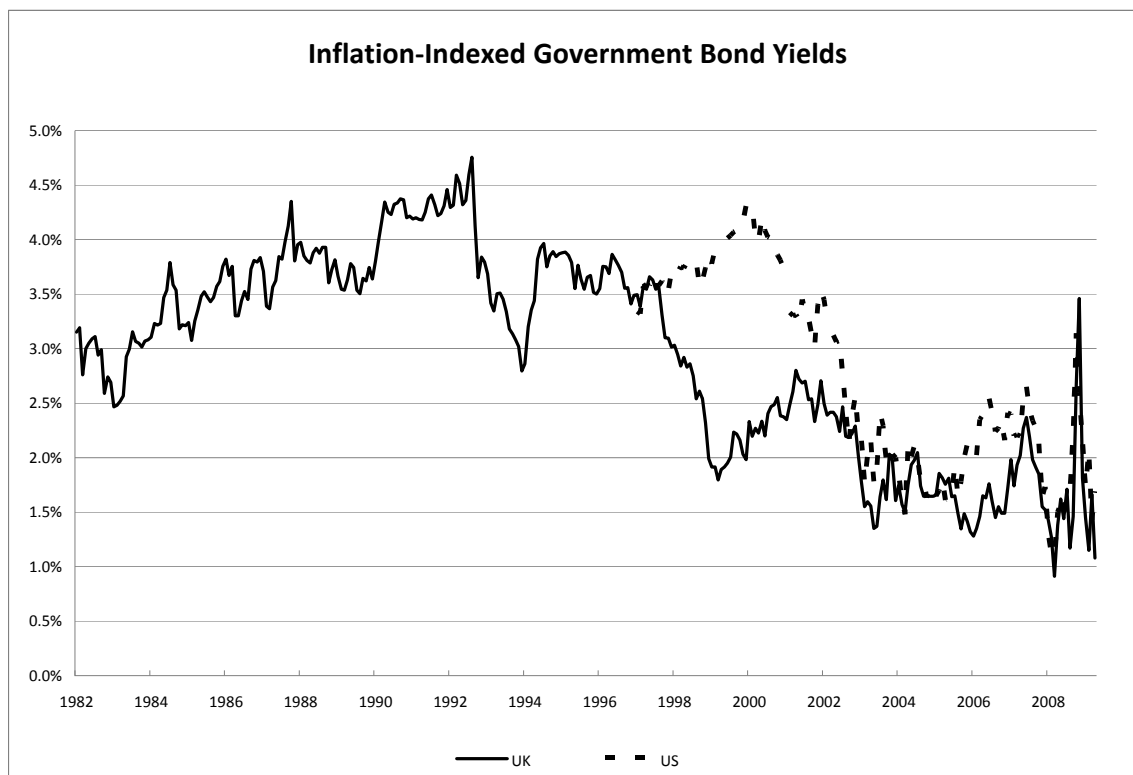
Figure 3:



Source: MSCI Index, Inflation data from OECD, Real government bond yields from Bank of England web site and US Treasury web site

To understand these numbers, it is helpful to keep two points in mind. First, the equity premium is high today in part because real interest rates are low. Figure 4 shows the yields on inflation-indexed bonds in the UK and the US since 1982.

Figure 4:



Source: MSCI Index, Inflation data from OECD, Real government bond yields from Bank of England web site and US Treasury web site

Although TIPS and inflation-indexed gilt yields spiked up in the fall of 2008 because of liquidity effects in fixed-income markets (Campbell, Shiller, and Viceira 2009), they have since fallen back to 1.7% in the US and 1.1% in the UK. The recent decline in yields explains why Figure 3 shows a higher equity premium today than at the end of 2008, even after the recent stock market rally.

Taking a longer-term view, inflation-indexed bond yields are far lower today than the 3.5% average that prevailed in the US and UK during the 1990's. Investors face low rates of return on safe assets, making equities relatively more attractive.

Second, as Campbell (2008) emphasizes, these numbers should be interpreted as geometric average rates of return. The simple or arithmetic average rate of return on equities is higher by one-half the variance of return. Given a long-term average standard deviation of stock returns of about 15% per year, the correction factor is just over 1%, implying an arithmetic equity premium of 6.7% for the world and 6.1% for the US.

References

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