

Fischer Black
on
MARKETS

Vol. 1, No. 1
February 17, 1976

IS THIS THE TIME TO SWITCH TO BONDS?

From the start of 1926 to the end of 1974, stocks grew (with dividends reinvested) at an annual rate of 8.5%.* Other starting and ending points would give quite different rates of growth, because this period includes some major upward and downward moves in the stock market. Over the same period, a continuous investment in long term government bonds would have returned 3.2% per year, while a continuous investment in short term Treasury Bills would have returned 2.2% per year. Thus stocks returned 5.3 percentage points more than long term governments, and 6.3 percentage points more than Treasury Bills.

Currently, long term government bonds are yielding up to about 8% per year, while Treasury Bill rates are less than 6%. If we compare a yield of 8% with a return on stocks of 8.5%, we might well think that bonds are a better investment, since they are much less volatile than stocks. Similarly, if we compare bond yields with bill yields, we might think that the longer term bonds are clearly better than shorter term bonds such as Treasury Bills. But before calling a broker, let's think about these comparisons more carefully.

The Future for Stocks

To some extent, the future for stocks will undoubtedly be like the past. But there's no reason to believe that the numbers will be identical, no matter how far back we look in the past, or how far ahead we look in the future. More generally, there is no reason to believe that the average rate at which investors expect stocks to grow (including reinvestment of dividends) stays fixed.

We can't tell directly how rapidly investors expect stocks to grow because we can't see into their minds. But there are some factors that we would expect to be important in guiding investors' expectations. And no matter how many factors we think of, there will be others that we didn't think of causing expected returns on stocks to change over time.

One factor that investors doubtless consider is the rate of inflation. An increase in the rate of inflation may be associated with a fall in the market. But after the market falls, if there is no further increase in the rate of inflation, investors will likely expect a higher growth rate for stocks. One reason for this is that inflation may mean higher dollar figures in the corporation's income statement. Another reason is that the market can grow faster if it starts from a lower point, even if the dollar figures in its future income statements are unchanged.

Another factor affecting expected returns on stocks is the level of the market generally. After stocks rise, investors as a group may be more willing to risk their money, and they may invest in stocks even though they expect slower growth for stocks than they expected before the rise. After stocks fall, investors as a group may be less willing to risk their money, and it may take a higher expected return on stocks to coax them into the market. While I think this is the most likely direction of the relation between past returns and future returns on the market, it is also conceivable that the reverse is true: that a rise in the market leads investors to expect a further rapid rise, while a fall in the market leads investors to expect only a modest rise in the future. For the moment, the important thing is that the rate at which stocks are expected to grow is related to what the market has been doing.

A change in the volatility of the market or in how investors feel about the volatility of the market may also be associated with a change in the expected return on the market. When the market is more volatile, either because companies are using more leverage or because uncertainties about fundamental

factors affecting future earnings are higher, it may take more to bring investors into the market than it takes at other times. If investors did not expect more of stocks at such times, there would be an imbalance between the amount of stock investors want to hold and the amount of stock outstanding.

It's likely, too, that changes in the tax laws affecting investors in stocks and changes in the amounts that corporations pay out in dividends will have an impact on the expected returns on stocks. It turns out to be difficult to predict the direction of these effects. Surprising as it might seem, higher taxes may increase the level of the market and reduce future before-tax expected returns, and higher dividends may decrease the level of the market and increase future expected returns. For now, let's just note that there will be an effect of one sort or the other.

The Volatility of the Market

The volatility of the market can be observed more easily than the market's expected rate of growth. We know that the typical move in the price of a stock (as a fraction of the price) was higher in the depression of the 30's than it was either in the 20's or at any time since the depression. We can see changes in the volatility of a stock that seem to occur gradually over time, and we can see changes that depend on specific events such as a re-capitalization that changes the company's debt-equity ratio.

We also observe a rather strong relation between changes in the level of the market and changes in the volatility of the market. When the market goes up, its volatility (expressed in percentage terms) goes down, and when the market goes down, its volatility goes up. In fact, the effect seems so strong that an increase in the level of the market may be associated with at least a temporary fall in the dollar volatility of the market. A stock that moves \$0.50 on a typical day when it sells for \$20 may move only \$0.375 on a typical day when it sells for \$40.

There are several possible reasons for a relation between stock prices and volatility. Changing stock prices may cause changing volatilities, or changing volatilities may cause changing stock prices, or there may be underlying factors causing changes in both stock prices and volatilities, or all of the above may be true. We don't need to know why the effect is there to know that volatilities change, sometimes dramatically.

Interest Rates

Interest rates are even easier to observe than the volatility of the market. No one doubts that interest rates change over time. (In fact, it is a general rule about markets that nothing can safely be taken as constant over time.) We can even use the yields on long term bonds to forecast changes in the yields on short term bills. That's why an investor may buy bills yielding 6% when bonds are yielding 8%, even if he doesn't mind the fluctuations in bond values. If the average yield on bills over the life of the bonds is expected to be about 8%, then many investors may be indifferent between holding bills and holding bonds.

Interest rates seem to be affected by all the things that can cause changes in the expected return on the market. An increase in the rate of inflation seems to be associated with an increase in short term interest rates. So does an increase in the volatility of the market. And in recent years, a decline in interest rates has been the occasion for many a striking rally in the stock market (though the cause may well be more from stock market changes to interest rate changes than the other way around).

From the start of 1926 to the end of 1974, the rate of inflation (as measured by the consumer price index) averaged 2.2% per year.* The consumer price index has many defects as a measure of the level of prices or the rate of inflation, so we should not make too much of the fact that the average return on Treasury Bills for this period was also 2.2% per year. But if it makes sense to talk about a real interest rate at all, it seems clear that the average real interest rate has been a fairly small number.

There is some evidence that changes in the rate of inflation that investors expect are reflected approximately point for point in changes in Treasury Bill rates. If an investor is in a 50% tax bracket, this means that a one point increase in the rate of inflation is associated with a half-point decrease in the "real" after-tax interest rate. Half of the one point increase in the nominal interest rate is taken away from him in taxes. In other words, for an investor in a 50% tax bracket, an increase in interest rates associated with higher inflation may mean a lower effective interest rate for him. When the nominal rate goes up, his real after-tax rate may go down. If he's a lender, he may be sad when rates go up; while if he's a borrower, he may be happy when rates go up.

What Should We Do?

Interest rates are now higher than they were from 1926 through 1974, partly because the rate of inflation is higher. But higher inflation probably means higher nominal returns for stocks in the future, too.

The last decade has been a bad time for stocks, especially relative to bills. From the start of 1965 to the end of 1974, stocks returned an average of 1.2% per year, while Treasury Bills returned an average of 5.4% per year. But it seems plausible that a relative decline in the market means higher relative expected returns on the market in the future.

On the other hand, the volatility of the market has been lower in recent years than it was for much of the period from 1926 to World War II. A lower level of volatility would suggest lower relative expected returns on the market in the future. Taking the recent performance of stocks and the recent volatility of the market together, I can see no reason to forecast either a higher relative return or a lower relative return than we have experienced in the past. Thus the expected return on stocks may be about 6.3 percentage points higher than interest rates on Treasury Bills. With Treasury Bills

at current levels, this implies an expected 12% per year for stocks in the short run. Since bond yields imply that investors think short term rates will rise in the future, the long run expected return on stocks may be even higher than 12% per year.

Thus today's investor may have about the same wealth, and may face about the same volatility and difference between stock returns and bond returns as the investor of 10 years ago. Such an investor may decide to keep in stocks the money he currently has in stocks.

What's more, shifting money between stocks and bonds because of changes in an investor's beliefs about their relative future returns can have high transaction costs and can introduce a form of poor diversification over time that is much like poor diversification across stocks.

In sum, this is probably not the time to switch to bonds. Nor is it likely to be the time to switch to stocks. Some investors should do one, and some investors should do the other, but the typical investor should very likely stay put. And I expect to continue to believe this no matter what may happen to the stock market or to interest rates in the future.

*The figures in this letter are taken from "Stocks, Bonds, Bills, and Inflation: Year-By-Year Historical Returns (1926-1974)," by Roger G. Ibbotson and Rex A. Sinquefeld. It appears in the January, 1976 issue of the Journal of Business.

If you have any questions or comments, please call me at 617-253-6691, or write me at 50 Memorial Drive, Cambridge, MA 02139.