

THE ENIGMA OF FED POLICY AND BOND MARKET RETURNS

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Investors spend enormous time and resources monitoring, analyzing and forecasting the Federal Reserve's (Fed's) monetary policy. The premise is that Fed policy affects market interest rates, and changes in market interest rates affect bond returns. But is this relationship true? This question is particularly relevant at a time when many investors anticipate the Fed will progressively increase interest rates, with potential implications for the returns of their bond portfolios.

In a previous research article, "The Enigma of Economic Growth and Stock Market Returns," we showed that conventional wisdom can be wrong when it's not based on key principles of how capital markets work. In particular, stock market investors are not compensated for economic growth but for bearing diversified risk. We will demonstrate a similar example for bond market investors, with implications for their bond portfolios.

FED POLICY AND MARKET INTEREST RATES

The Fed's primary tool to affect interest rates is the Federal funds rate, which is the interest rate banks charge each other on overnight loans to meet reserve requirements. The target Fed funds rate is the policy rate the Fed attempts to achieve, supported by open market operations. The effective Fed funds rate is the weighted average rate earned by bank lenders in the overnight loan market. We use the target Fed funds rate as our proxy for Fed policy.

PETER MLADINA

Director of Portfolio Research,
Wealth Management

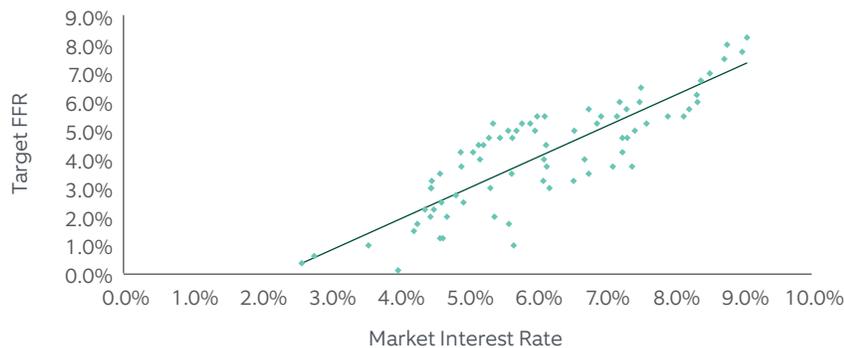
CHARLES GRANT, CFA

Senior Analyst, Wealth Management
Portfolio Research

It is generally accepted that the Fed influences short-term interest rates through the target Fed funds rate. But economists continue to debate whether Fed policy also influences longer-term interest rates. On average, investors own a market portfolio of bonds across all maturities and qualities which, in aggregate, provides the market rate of interest. So the market rate of interest is what should matter most to investors who contemplate Fed policy. The Bloomberg Barclays U.S. Aggregate Bond Index (BB Aggregate) is the standard index for the investment-grade U.S. bond market, and we use the index's yield and total return as our proxies for bond market interest rates and returns.

Does Fed policy affect bond market interest rates? Starting in 1990, the Fed began providing public notice on the day it changed its target rate. We tested the relationship between the target Fed funds rate and the yield on the BB Aggregate, focusing on the 75 months between 1990 and 2016 when there were changes in the target Fed funds rate – changes in Fed policy. Exhibit 1 shows a clear relationship.

EXHIBIT 1 – FED POLICY AND MARKET INTEREST RATES

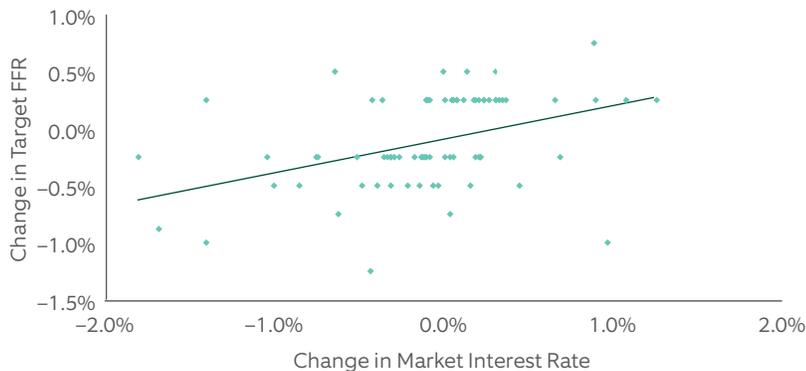


Sources: Northern Trust Research, Federal Reserve, Morningstar.

The explained variation (R^2) is 71%, and this relationship is statistically significant. In other words, the level of market interest rates is related to the level of target Fed funds rates for the months when the Fed changed policy. But correlation is not necessarily causation. Is Fed policy driving market interest rates, or is the Fed merely tracking with the general level of market interest rates?

We can more directly investigate the effect of Fed action by testing the relationship between changes in the target Fed funds rate and changes in the market interest rate over the gaps between changes in Fed policy. The scatterplot in Exhibit 2 shows a weak relationship,¹ with an R² of just 16%. The effect is present and in the right direction, but it is small and far outweighed by more powerful market factors. These results suggest Fed policy is largely tracking with market interest rates over time, rather than driving them by its actions.

EXHIBIT 2 – CHANGES IN FED POLICY DO NOT MATERIALLY AFFECT CHANGES IN MARKET INTEREST RATES



Sources: Northern Trust Research, Federal Reserve, Morningstar.

FED POLICY AND BOND MARKET RETURNS

Although economists are interested in the relationship between Fed policy and market interest rates, investors are often more focused on the effect of Fed policy on bond market returns. We already showed that a weak relationship exists between Fed policy actions and changes in market interest rates. Next we tested whether a relationship exists between changes in the target Fed funds rate and bond market returns during the months when the Fed changed policy. Exhibit 3 shows a weak relationship, with an R² of just 11%.² The effect is present and directionally consistent with unexpected increases (decreases) in interest rates reducing (increasing) bond returns. But the effect is very small and far outweighed by more powerful market factors. We found the same overall results when we tested the monthly effective Fed funds rate since 1976, capturing a longer history of Fed policy and interest rate cycles.³

1 The dispersion shows that the majority of changes in target FFR have been quarter or half-point in magnitude.
2 This result supports the notion that the weak effect observed in Exhibit 2 is due to Fed action.
3 The monthly effective FFR is a less precise proxy for changes in Fed policy, but it offers a longer history.

EXHIBIT 3 – CHANGES IN FED POLICY DO NOT MATERIALLY AFFECT BOND RETURNS



Sources: Northern Trust Research, Federal Reserve, Morningstar.

The results show the bond market does a very good job of anticipating future interest rates and pricing them into current expected bond returns. The bond market is a forward-looking and highly competitive pricing engine, constantly adapting to new expectations and information. When changes in interest rates are largely anticipated, bond market returns are mostly unaffected. This is because the yield-to-maturity is not earned equally each year, but through the compounding of different period returns (forward rates), which capture the term structure of current and expected future interest rates.

YOU ARE COMPENSATED FOR BEARING DIVERSIFIED RISK

So which market factors largely explain bond returns? Systematic risk factors are aggregate, diversified risks. Risk factors explain the compensated portion of a diversified portfolio’s return and risk. Researchers have found that at least two systematic risk factors explain bond returns. These include a portfolio’s sensitivity to interest rate risk (term factor) and to default risk (default factor).

We tested the relationship between the BB Aggregate’s monthly returns against term and default risk factors during the months when the Fed changed policy. We found a strong relationship between systematic risk and bond market returns. The scatterplot in Exhibit 4 shows that 96% of the bond market’s return variation is explained by exposures to term and default risk factors during those months.

EXHIBIT 4 – SYSTEMATIC RISK EXPLAINS BOND MARKET RETURNS



Sources: Northern Trust Research, Morningstar.

If bond markets are competitive, they already price in expected future interest rates. What is left is compensation for bearing the systematic risk (uncertainty) that the future will turn out to be materially different than what the market anticipates. You are compensated (on average) for bearing this risk within a well-diversified bond portfolio. Therefore, the question to ask is not whether future interest rates will be higher (or lower), but whether they will be materially different than what a highly competitive bond market expects. From this perspective, most investors should stay the course with a strategic bond allocation aligned with their goals – not just now, but always.

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