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RESEARCH

All Eyes on the Fed? A Look at Federal Funds Rate, Bond Return, and Term Premium

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KEY TAKEAWAYS

- The prospect of an increase in the federal funds rate has raised questions about future bond performance for some investors.
- Our analysis of global government bond data from 1984–2021 shows no reliable relation between past changes in the federal funds rate and either future bond excess return over cash or future term premiums.
- We can target higher expected returns by dynamically varying a strategy's duration decision based on current term spreads across global yield curves.

Please see the end of this document for important disclosures.

US consumer prices were up 7.9% for the year ending February 2022, the largest annual increase since January 1982.[1] Against this macroeconomic backdrop of inflation, the monetary policy response of the US Federal Reserve has become the center of attention for many US and global fixed income investors. With Fed officials recently signaling a more hawkish policy stance,[2] some market participants might predict that bonds will underperform cash and that longer-duration bonds will underperform shorter-duration bonds. Thus, they might choose to shift their allocation from bonds to cash or favor shorter-duration bonds over longer-duration bonds.

As these narratives have gained media attention, this might be a good time to examine the empirical relation between the federal funds rate, global bond performance, and term premiums. The federal funds rate is the overnight interest rate at which one depository institution (like a bank) lends to another institution some of its funds that are held at the Federal Reserve. The Fed's Open Market Committee meets regularly to set the target for the federal funds rate (Federal Funds Target Rate). Bond prices and yields reflect the aggregate expectations of all market participants, including opinions on how and when the Fed will act in response to macroeconomic conditions. Even if the timing and direction of federal funds rate changes could be predicted perfectly, we would still not know for certain how other interest rates would react. Research by Nobel-winning economist Eugene Fama (2013) finds that any effects of the target federal funds rate on other rates dissipate quickly for longer maturities, and that there is no conclusive evidence on the role of the Fed versus market forces in the long-term path of interest rates.[3] Despite its significant policy role, the Fed is one of many market participants in a larger ecosystem that impacts yield curves at large.

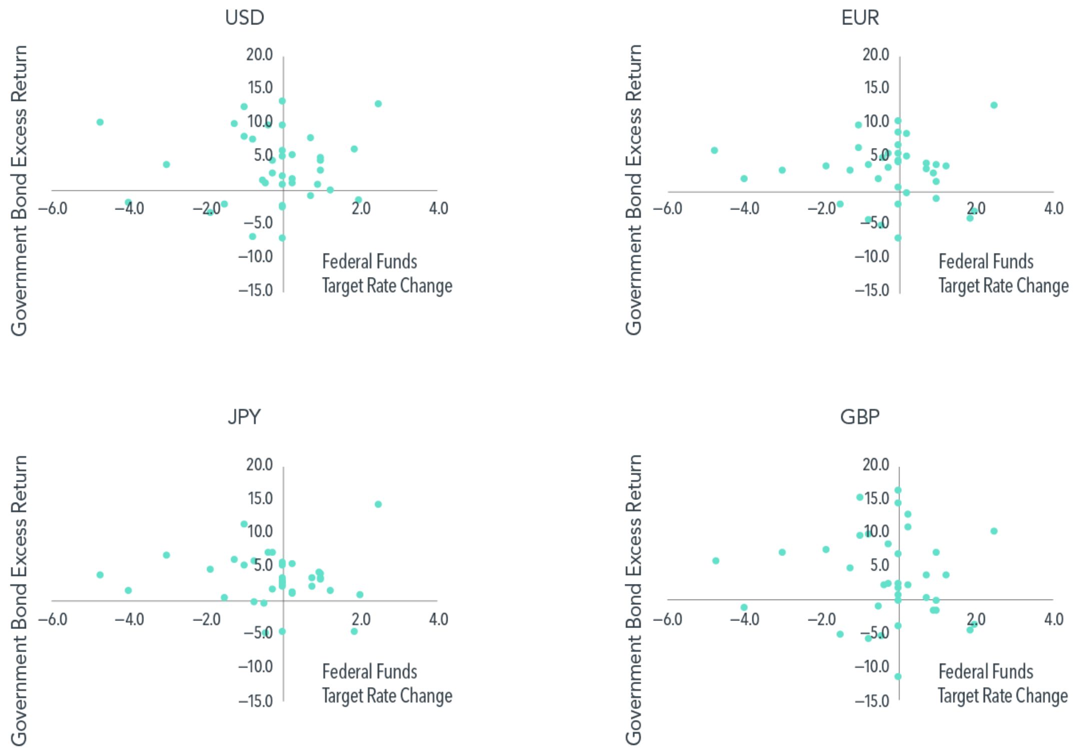
IS CASH REALLY KING?

Using FTSE World Government Bond Index data spanning over 30 years across multiple countries, we examine the relation between the change in the federal funds rate in a given year and the returns on government bond indices in excess of cash over the following year.[4] **Exhibit 1** shows charts of the changes in federal funds rate each calendar year (horizontal axis) versus government bond excess returns in the subsequent year (vertical axis) for the US dollar (USD), the euro (EUR), the yen (JPY), and the British pound (GBP). Across the four currencies, we find no reliable relation between past federal funds rate changes and future government bond performance. In addition, average annual government bond excess returns were positive and similar in magnitude regardless of changes in the federal funds rate in the past year across all four major currencies (**Exhibit 2**). Therefore, our analysis does not support the idea of allocating away from bonds to cash in response to changes in the federal funds rate.

Exhibit 1

Government Bonds vs. Cash

Annual Global Government Bond Returns in Excess of Cash (%) vs. Federal Funds Target Rate Changes in the Prior Year (%), 1984–2021



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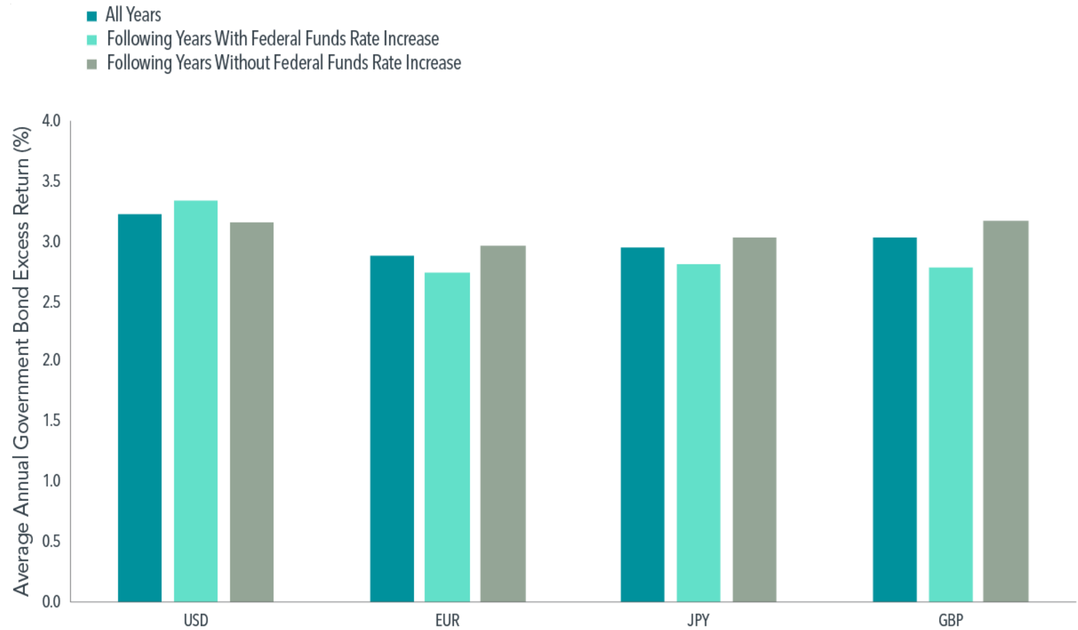
Source: USD-hedged returns from FTSE World Government Bond Index data. 1-Month US treasury bill returns from Morningstar. Federal Funds Target Rate spliced from Federal Funds Target Rate (DFEDTAR, Jan 1984–Dec 2008) and Federal Funds Target Range - Upper Limit (DFEDTARU, Dec 2008–Dec 2020) series in FRED database, St. Louis Fed. The horizontal axis shows the annual change in the federal funds rate in each calendar year (%), and the vertical axis shows government bond excess returns in the following year (%).

Exhibit 2

Positive Excess Return on Average

Average Annual Government Bond Returns in Excess of Cash, 1984–2021



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LONGER DURATION OR SHORTER DURATION?

To answer that question, we study the relation between past federal funds rate changes and future term premiums. We define the term premium as the return difference between the 7–10 year and 1–3 year government bond index for USD, EUR, JPY, and GBP.[5] Again, as shown in **Exhibit 3** and **Exhibit 4**, we find no reliable relation between past changes in the federal funds rate and future term premiums. We also observe positive term premiums on average regardless of changes in the federal funds rate in the past year across all four major currencies. Therefore, shortening portfolio duration in response to changes in the federal funds rate is unlikely to lead to better investment outcomes, either.

Exhibit 3

Longer Duration vs. Shorter Duration

Annual Global Term Premiums (%) vs. Federal Funds Target Rate Change in the Prior Year (%), 1984–2021

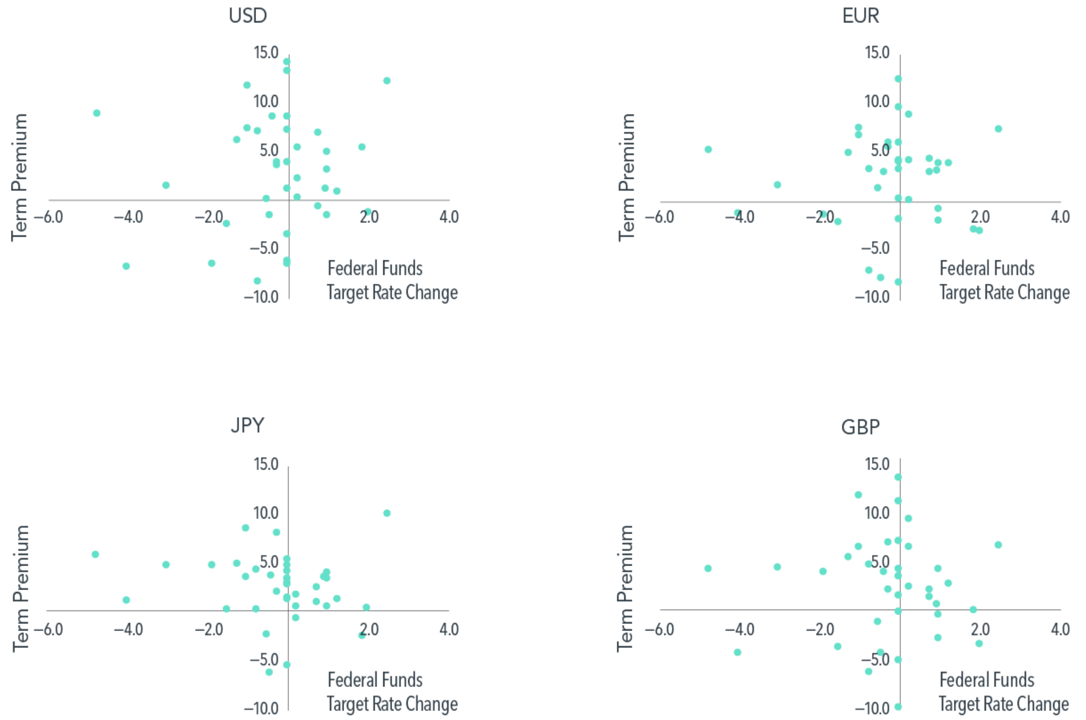

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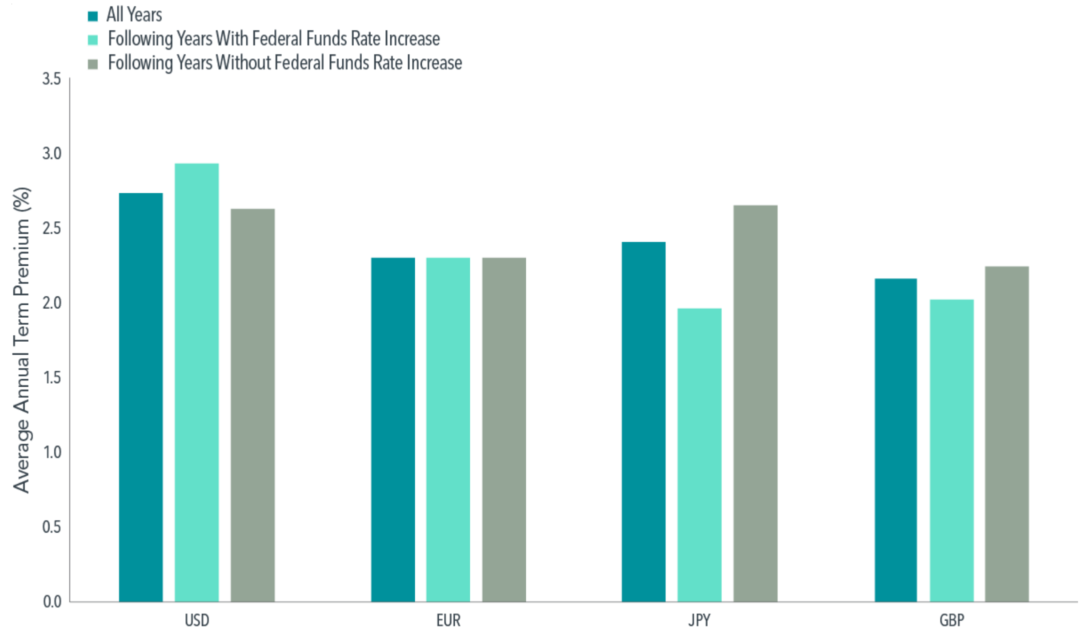
Exhibit 4
Positive Term Premium on Average
Average Annual Global Term Premiums, 1984–2021



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A SYSTEMATIC WAY TO TARGET TERM PREMIUMS

If there are no reliable relations between past changes in the federal funds rate and future bond returns or future term premiums, how should investors allocate between cash and bonds, and between longer-duration and shorter-duration bonds? Investors can rely on the information in current term spreads, the yield difference between longer duration bonds and shorter duration bonds. Research shows that current term spreads reliably forecast future term premiums.[6] A systematic strategy that dynamically varies its duration and currency allocation based on current term spreads across yield curves is a robust way to target higher expected returns in fixed income.

1. Based on the US Consumer Price Index for All Urban Consumers (CPI-U, not seasonally adjusted) from the Bureau of Labor Statistics.
2. Jeff Cox, "Fed's Bullard says the central bank's 'credibility is on the line,' needs to 'front-load' rate hikes," CNBC.com, February 14, 2022.
3. Eugene F. Fama, "Does the Fed control interest rates?" *The Review of Asset Pricing Studies* 3.2 (2013): 180–199.
4. Return on cash is defined as the return on 1-month US Treasury bill. We use US, German, Japanese, and UK WGBI index returns as government bond returns for USD, EUR, JPY, and GBP, respectively.
5. For EUR term premium calculation, we used German WGBI 1–3 year and 7–10 year index returns.
6. Please see the following papers on the relation between current term spread and future term premium:

   Eugene F. Fama, "The information in the Term Structure," *Journal of Financial Economics* 13.4 (1984): 509–528.

   Eugene F. Fama and Robert R. Bliss, "The information in Long-Maturity Forward Rates," *American Economic Review* 77.4 (1987): 680–692.

   John H. Cochrane and Monika Piazzesi, "Bond Risk Premia," *American Economic Review* 95.1 (2005): 138–160.

Duration: A measurement of the sensitivity of the price of a fixed income investment to changes in interest rates. Generally, high duration bonds will have greater sensitivity to changing interest rates than lower duration bonds.

Federal funds rate: The federal funds rate is the interest rate at which depository institutions lend balances at the US Federal Reserve to other depository institutions overnight.

Term premium: The return difference between bonds with different maturities but similar credit quality.

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