



A Measure of Risk Appetite for the Macroeconomy

Overview

It is intuitive that the risk appetite of investors drives markets and economic activity. Far less understood is how to measure it. A good, workable measure of risk appetite would dynamically reflect investor preferences for safer assets when risk desires are low and vice versa. It would also work across asset classes so, for instance, it would apply to common stocks, bonds, and private investments. The authors propose a new measure of risk appetite that satisfies these criteria. It is based on the notion that when investors' risk appetite is low, they shun volatile stocks. To calculate their measure, they compare the valuation ratios (book-to-price) of low- and high-volatility stocks. When valuations are relatively high for high volatility stocks (versus low volatility stocks) then risk appetites are also high. The authors contend that increases in their risk measure are followed by increased real short rates, investment, and economic output.

Investigation

Changes in investor risk appetite should affect the macroeconomy. A higher appetite for risk leads to a greater willingness to fund risky projects and less interest in safe bonds. Thus, real interest rates should rise along with investment, spurring an economic expansion, and vice versa for an economic contraction. To date, an empirical measure of the dynamic risk appetite of investors has proven elusive.

The authors propose a new, workable measure of risk appetite with predictive power for real short rates and economic activity. Their approach relies on the idea that when risk appetite is low, investors should be more averse to holding high-volatility assets and instead prefer low-volatility assets like riskless bonds. They test their thesis in the cross section of equities from 1970 to 2016 using the "price of volatile stocks" or (PVS), calculated as the value spread between high-volatility stocks and low-volatility stocks (calculated as average book-to-market of low-volatility stocks minus average book-to-market of high-volatility stocks). The PVS metric infers risk appetite is high when the value spread is high; i.e., when market values of high-volatility stocks are large relative to low-volatility stocks. Using their PVS risk appetite measure, the authors document several findings:

- PVS is positively correlated with real rates across the entire term structure of U.S. Treasury Bonds, from 1-yr to 10-yr.
- Both PVS and the real rate show power to forecast returns on a portfolio that is long low-volatility stocks and short high-volatility stocks as well as in volatility sorted portfolios in asset classes beyond equities.
- PVS and the real rate are both only weakly correlated with typical macroeconomic risk measures.
- Outflows from high-volatility mutual funds are large relative to low-volatility funds when the real rate is low.
- Shocks to PVS are associated with a rise in investment, output, and employment.

Conclusion

Taken together, the authors' findings suggest that PVS measures the macroeconomy's risk appetite. A marked decline in the valuation for high volatility stocks relative to low volatility stocks is associated with a flight to quality as risk appetites decline, followed by lower real short rates, investment, and economic output. The authors find that these relationships occur consistently through different macroeconomic environments.

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