The 'Fed Model' and the Changing Correlation of Stock and Bond Returns: An Equilibrium Approach

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Abstract

This paper presents an equilibrium model that provides a rational explanation for two features of data that have been considered puzzling: The positive relation between US dividend yields and nominal interest rates, often called the Fed-model, and the time-varying correlation of US stock and bond returns. Key ingredients are time-varying first and second moments of consumption growth, inflation, and dividend growth in conjunction with Epstein-Zin and Weil recursive preferences. Historically in the US, inflation has signalled low future consumption growth. The representative agent therefore dislikes positive inflation shocks and demands a positive risk premium for holding assets that are poor inflation hedges, such as equity and nominal bonds. As a result, risk premiums on equity and nominal bonds comove positively through their exposure to macroeconomic volatility. This generates a positive correlation between dividend yields and nominal yields and between stock and bond returns. High levels of macro volatility in the late 1970s and early 1980s caused stock and bond returns to comove strongly. The subsequent moderation in aggregate economic risk has brought correlations lower. The model is able to produce correlations that can switch sign by including the covariances between consumption growth, inflation, and dividend growth as state variables.

Keywords: Fed Model, Money Illusion, Stock-Bond Correlation, Economic uncertainty, Inflation, Inflation volatility, Long-Run Risk, Epstein-Zin, Asset Pricing

JEL Classification: E43, E44, G12

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