

THE EQUITY PREMIUM A Puzzle

In the past, the average return on equity has consistently outperformed the average return on short-term debt. The average real annual yield on the S&P 500 Index was seven percent from 1889 to 1978, whereas the average yield on short-term debt was less than one percent. The question addressed in this study is whether models that abstract from transaction costs, liquidity constraints, and other frictions lacking in the Arrow-Debreu setup can account for the huge difference in average yields.

In this paper, we use five basic series data for the period 1889-1978 to explain a variation of Lucas' (1978) pure exchange model: (1) Annual average S&P's Composite Stock Price Index divided by the Consumption Deflator, (2) Real annual dividends for the S&P's series, (3) Kuznets-Kendrick-USNIA per capita real consumption on non-durables and services, (4) Consumption deflator series, and (5) Nominal yield on relatively riskless short-term securities over the 1889-1978 period; used ninety-day government Treasury Bills. Furthermore, the Risk Premium (RP) is determined as the difference between the Real Return on S&P 500 and the Real Return on a Riskless security.

Alpha and beta are the parameters that define preferences. As a result, from 1889 to 1978, the average real return on relatively riskless short-term securities was 0.80 percent and the average actual return on the S&P 500 Composite Stock Index was 6.98 percent per year. This results in a 6.18 percent average equity premium given 1.76 percent standard error. Finally, the average risk-free rate and equity risk premium are both consistent with the model. These are the values that can be produced by adjusting the preference parameters alpha from zero to ten and beta from zero to one. However, the findings contradict those of Friend and Blume (1975), who discovered that the curvature parameter alpha significantly exceeds one and the average risk-free rate is at least 3.7 percent per year, which is significantly higher than the sample average of 0.80, given the sample average's standard deviation of only 0.60. This is clearly at odds with the empirical evidence.

Another potential issue is that the model's security does not correlate to common stocks sold in the United States. There is just one form of capital in the model, although there is a virtual continuum of capital types with significantly varied risk characteristics in the real economy. The model's firm corresponds to one that produces the entire economy's production. The volatility of this company's stock differs from the volatility of the S&P 500 Composite Stock Price Index. To solve these issues, the authors propose to incorporate capital accumulation and production into the model, as well as conduct additional tests, utilizing a variant of Brocks' (1979, 1982), Donaldson and Mehra's (1984), or Prescott and Mehra's (1980) general equilibrium structure.

To summarize, the equity premium puzzle may not be why the average equity return was so high, but why the average risk-free rate was so low. He doubts that heterogeneity will change the outcome. The challenge might be solved by introducing specific features that make certain sorts of intertemporal trades between agents impossible.