

Summary

The Equity Premium: A Puzzle

The question is whether yield disparities between stock and short-term virtually default-free debt can be explained by models that ignore transaction costs, liquidity limits, and other frictions that aren't present in the Arrow-Debreu model. They predicted that the low average real return and the high average return on equity can not be rationalized in a perfect market framework.

The data used are five basic series which consists of:

- (i) Series P: Annual average Standard and Poor's Composite Stock Price Index divided by the Consumption Deflator
- (ii) Series D: Real annual dividends for the Standard and Poor's series.
- (iii) Series C: Kuznets-Kendrick-USNIA per capita real consumption on non-durables and services.
- (iv) Series PC: Consumption deflator series, obtained by dividing real consumption in 1972 dollars on non-durables and services by the nominal consumption on non-durables and services.
- (v) Series RF: Nominal yield on relatively riskless short-term securities over the 1889-1978 period; the securities used were ninety-day government Treasury Bills in the 1931-1978 period, Treasury Certificates for the 1920-1930 period and sixty-day to ninety-day Prime Commercial Paper prior to 1920.

This paper employs a variation of Lucas' (1978) pure exchange model. They assume that the growth rate of the consumption follows a Markov process, there is one productive unit that produces the perishable consumer good, and one competitively traded equity share, and Markov chain is ergodic.

The set of admissible average equity risk premia and real returns depicts the set of values of the average risk-free rate and equity risk premium that are both consistent with the model and result in average real risk-free rates between zero and four percent when given the estimated consumption process. The observed real return of 0.80% and equity premium of 6% are plainly not consistent with the model's projections. The model's highest premium is 0.35 percent, which isn't even close to the observed number.

The equity premium puzzle may be the reason why the average risk-free rate so low, but not why the average equity return so high. The result is supported by previous work of Within the Debreu (1954), and Constantinides (1982).

There can be variability in individual consumptions, yet little variability in aggregate consumption. The puzzle could be solved by introducing specific traits that make certain sorts of intertemporal trades between agents impossible.