

The Equity Premium A Puzzle

According to this paper, they want to know that large differential in average yields can be accounted for by models that conclude from transactions costs, liquidity constraints and any friction absent in the Arrow-Debreu set up because of abnormally high average return on equity that exceed the average return on short-term debt.

They used five basic series for the period 1889 to 1978 as the studied data with the first four series were also used by Grossman and Shiller. Each series were brought to use in this paper where the first two series, series P and D, were used to calculate the annual real return on the Standard and Poor's Composite Index during the study period. Series C were used to determine the growth rate of consumption and the last two series, series RF and PC, were used to certify the real return on a riskless security.

Mehra and Prescott state that per capita consumption has grown over time, so this growth rate endowment follows a Markov process which is a contradiction to the variation of Lucas' pure exchange model that the endowment level follows the Markov process. This theory led them to the non-stationary in the consumption series and the large increase in per capita consumption during the study period. They give out the Markov chain calculations leading to the expected returns on the equity and the risk-free security.

They took a closer look at Markov chain and restrict the process which contains the parameters of preferences (α and β) and technology (λ and ϕ). They state that the by altering each technology parameters will result in the growth rate output being vary. They focused on the preferences parameters by using the sample values from years selected in this paper. As a result from looking into different fields of economics from different times, they can restrict the preferences parameters to a maximum of ten. Mehra and Prescott show us when the stated values are less than ten. The result is almost the same which means then mean and the variance of growth rates are equaled to the past observed values and this makes it easier to test the sensitivity of the result to the distributional assumption. Over the ninety-year study, the average return on relatively riskless, short-term securities, is 0.80 percent. These are not perfectly equal to the real bill. The estimated process on consumption gives out the values of the average risk-free rate and equity risk premium between 0 and 4 percent. These values can be varied by adjusting α between 0 to 10 and β between 0 to 1. The observed real return of 0.80 percent and the equity premium of 6 percent is conflicting with the prediction of the model which is 0.35 percent.

Errors in measuring the inflation rate may cause problems to the result. However, these errors do not have any effect on the computed risk premium as they weigh the real risk-free rate and the equity rate by the same values. The more serious problem occurs with the estimates of the consumption and the risk-free real rate, and the tax consideration because the tax-return are differ depending on income classes. After their attempt to resolve the extreme difference between the theory and the test, they found out that the result are not sensitive with the change of μ , a small sensitivity with the change of ϕ and a larger sensitivity with the change of δ .

The security priced in their model does not correspond to the common stocks traded in the U.S economy. Their model has only 1 type of capital while there are several of capital types in actual economy. Therefore, this paper may focus the wrong question so it should focus on the reason why average risk-free rate is low and we observe that some asset return might less than in Arrow-Debreu theory.