

Mgmt 239c: Problem Set 2 *

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This second problem set is due Monday, February 2. You can work in groups of 4. It is sufficient to hand in one problem set per group. You are encouraged to submit your matlab code together with the write-up of your answers. This problem set applies the Hansen-Jagannathan machinery to US data.

1. Download quarterly data for the US risk-free rate and stocks from CRSP. For the risk-free rate, use the Fama risk-free rate series on CRSP. For stock returns, use the CRSP value-weighted stock market return. Use the inflation series provided by CRSP to deflate stock returns. Download quarterly real non-durable per capita consumption data from NIPA. Always use the longest sample available.
 - (a) use only excess (real) return data to compute the variance bounds, and plot this bound line in the $(E(Y), \sigma(Y))$ space.
 - (b) use real stock return and real bond return data to compute the variance bound assuming there is no risk-free asset, and plot this bound in the $(E(Y), \sigma(Y))$ space.
 - (c) assume the stand-in agent has power utility. show the model's implied SDF $(E(Y), \sigma(Y))$ for various values of γ . set β to .99. What do you conclude?
 - (d) assume the stand-in agent has E-Z utility. assume the market return is the real return on the stock market. assume $\psi = 1/\rho$ is 1.5. set β equal to .99. show the model's implied SDF $(E(Y), \sigma(Y))$ for various values of α . What do you conclude?
2. Download quarterly returns for 6 Fama-French portfolios sorted on size and book-to-market. Add these to the CRSP-VW stock market index and the Fama risk-free rate.
 - (a) Recompute the bounds and plot these in a new graph.
 - (b) Compare the bounds you had derived in the previous question.

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