# Econ 211C Final

## Instructions

1. You may not discuss this exam with any other person in any way ("discuss" includes any form of electronic communication).
2. You may only reference course materials: notes, textbook and files posted on the Econ 211C website. You may not use Wikipedia, Google or any other online or physical reference.
3. Print (do not sign) your name below. By doing this you pledge to obey and follow the UCSC Academic Integrity policy and to abide by the instructions above.
4. Include this cover sheet (with your name printed below) with your solutions.

Consider the asset pricing model:

$$E\left[\beta\frac{u'(C_{t+1})}{u'(C_t)}(1 + r_{t+1})\right] = 1,$$

where $C_t$ is consumption for a representative agent, $\beta$ is a time discount factor and $r_{t+1}$ is the return on any asset between times $t$ and $t + 1$. Further, suppose that the period utility function is

$$u(C) = \begin{cases} \frac{C^{1-\gamma}}{1-\gamma} & \text{if } \gamma > 0 \text{ and } \gamma \neq 1 \\ \log(C) & \text{if } \gamma = 1. \end{cases}$$

## a. (20 points)

Using $C_t$, $C_{t-1}$, $r_t$ and $r_{t-1}$ as instruments, explicitly write the GMM moment conditions for this problem.

**Solution:**

---

Download the data file from the Econ 211C website. Note: to read this file into use a command such as . This data set has four columns:

1. Year.
2. Quarter of the year.
3. Quarterly, real, per capita personal consumption expenditures (2005 chained dollars).
4. Quarterly returns for asset SPY, which is an exchange traded fund that marks the S&P 500.

## b. (40 points)

Estimate $\beta$ and $\gamma$ via GMM using the identity matrix as the weighting matrix in the criterion function. Use the data to substitute personal consumption expenditures for $C_t$ and returns on SPY for $r_t$.

**Solution:**

# c. (30 points)

Compute an estimate of the optimal weighting matrix that you would use in the second stage of GMM.

**Solution:**

# d. (10 points)

Using your result in part (c), conduct a test of overidentifying restrictions. Do you reject the model or not?

**Solution:**