

Due no later than Thursday, September 14 for extra credit

This assignment is worth 15 extra credit points if turned in by **Thursday, September 14**. If not turned in by **September 14**, the problem set will become part of the research prospectus assignment and will count for 30 percent of the grade on the prospectus. The purpose of this assignment is to familiarize students with the computer and analytical methods to be used for the term research paper: (1) select an econometrics program or a spreadsheet program; (2) read in and save your data, create the log variables, run the regressions and print out a hard copy of the results; and (3) conduct basic analysis of the results.

Use the data provided in the file **e482dat.txt** to estimate four specifications of the demand for money function for the U.S. Estimate the following models by Ordinary Least Squares (*OLS*) over the period 1959 to 1989 and calculate the interest rate elasticities of the demand for money $\left(\frac{\partial M_1}{\partial r} \frac{r}{M_1}\right)$. Students may work together in groups of 3 or less on this assignment, i.e. no more than 3 names may appear on the completed assignment.

Linear form:	$M_{1t} = \beta_0 + \beta_1 r_t + \beta_2 P_t + \beta_3 Q_t + u_t$
Double-log form:	$\ln(M_{1t}) = b_0 + b_1 \ln(r_t) + b_2 \ln(P_t) + b_3 \ln(Q_t) + u_t$
Semi-log form:	$\ln(M_{1t}) = a_0 + a_1 r_t + a_2 P_t + a_3 Q_t + u_t$
Reciprocal form:	$M_{1t} = c_0 + c_1 \frac{1}{r_t} + c_2 P_t + c_3 Q_t + u_t$

where M_1 is a measure of the money stock (billions of \$'s), r is the 6 month Treasury bill rate, P is the GNP implicit price deflator, Q is real GNP (billions of constant 1982 \$'s), and u is the implicit unobserved error term (source: Tables B-2, B-3, B-67 and B-71, Economic Report of the President, 1991).

1. Assume $r = 6.459$, $M_1 = 347.719$. Estimate the interest rate elasticity of demand for the **linear form**, and use this to determine the percentage effect on money demand of a 10% **rise** in the interest rate.
2. Assume $r = 6.459$, $M_1 = 332.144$. Estimate the interest rate elasticity of demand for the **double-log form**, and use this to determine the percentage effect on money demand of a 10% **fall** in the interest rate.
3. Assume $r = 6.459$, $M_1 = 295.906$. Estimate the interest rate elasticity of demand for the **semi-log form**, and use this to determine the percentage effect on money demand of a 20% **fall** in the interest rate.
4. Assume $r = 6.459$, $M_1 = 327.932$. Estimate the interest rate elasticity of demand for the **reciprocal form**, and use this to determine the percentage effect on money demand of a 20% **rise** in the interest rate.