Economics 6352: Applied Econometrics
Southern Methodist University

Department of Economics

Midterm I – Answers

1. (a) unbiased

    (b) biased

    (c) unbiased

    (d) unbiased

    (e) biased

    (f) unbiased

    (g) biased

    (h) unbiased

    (i) biased

    (j) biased

    (k) unbiased

    (a) Disagree. The term "spurious regression" refers to a situation in which a relationship between two or more trending variables is found/detected by regression analysis simply because each is growing over time.

    (b) Part (1): Disagree. The value of the lag distribution is clearly δ_3. Part (2): Disagree. The long-run propensity is the sum of the coefficients on the current and lagged values of z $(\delta_0 + \delta_1 + \delta_2 + \delta_3)$.

    (c) Agree: Note that $\ln(y_t) = \beta_0 + \beta_1 t + e_t \Leftrightarrow y_t = \exp(\beta_0 + \beta_1 t + e_t)$.

    (a) These estimates show that increases in inflation or the relative size of the deficit increase short term interst rates, both of which are expected from basic economics.

    (b) Yes, here we see the Durbin-Watson statistic is far below 2.

    (c) In the regression, the residual is regressed on the first lag of itself. Thus in 1948, we do not have the data for 1947 and must start our set with 1949 instead.

    (d) The positive and significant coefficient of 0.6625 states that if the past value of the residual is increased by 1, then the current residual should increase by 0.6225. This says that past values of the residuals (specifically the first lag of the residuals) have a positive and significant effect on the current residual.

    (e) The rejection of the coefficient on the first lag of the residual says that serial correlation is present in this model.

    (f) There are many reasons why this may not imply serial correlation. For example, the test assumes that the model is correctly specified. It also assumes that the regressors are strictly exogenous. Other satisfactory answers will also be given credit.