Growth, the Empirical Evidence: Problems

I obtained data from the St. Louis Fed on the ratio of total government consumption and investment to GDP, as well as the male civilian unemployment rate. The data are quarterly and run from January 1947 through April 2011. Because I am a terrible economist, I report the following (actual) regression result:

$$UE_t = 0.21 \frac{G_t}{GDP_t} + u_t \tag{1}$$

1. Interpret this regression result in terms of the statistical relationship that exists between unemployment and government spending.

2. The regression algorithm chose 0.21 as the regression coefficient. Why did it choose this value instead of -0.47?

3. Provide one reason why my analysis is hopelessly flawed.

4. I now claim, based on (1) that reducing government expenditures causes a reduction in the unemployment rate. Ignoring your concerns from #3, explain why this claim is dubious.

5. Suppose that we agree that the causal relationship from #4 does exist. Does it follow that policy makers should reduce the ratio of government expenditures to GDP?

6. Accepting the results of the Barro paper discussed in class, what would be the likely effect of imploding $\frac{3}{4}$ of American factories on GDP and GDP growth?

The following three factors, although not discussed in class, were examined by Barro: i) population, 2) religious and ethnic fragmentation, and 3) latitude.

7. Using economic intuition, how would you expect these three factors to affect GDP growth?

8. What results does Barro find regarding these three factors?

9. Do Exercise #1 in Chapter 3 of Jones.

10. Do Exercise #7 in Chapter 3 of Jones.