

ECON4570 : Problem Set 2

Due by 11:59pm on 10/01/2024

1. Assume that you are in charge of the central monetary authority in a mythical country. You are given the following historical data on the quantity of money (X) and national income (Y)(both in million of dollars). Also assume **Assumptions 1, 2, 3 hold and the variance is (conditional) homoskedasticity**:

Year	Quantity of Money (X)	National Income (Y)
1989	2.0	5.0
1990	2.5	5.5
1991	3.2	6.0
1992	3.6	7.0
1993	3.3	7.2
1994	4.0	7.7
1995	4.2	8.4
1996	4.6	9.0
1997	4.8	9.7
1998	5.0	10.0

- (a) Estimate the regression of national income Y on the quantity of money X and provide estimates of their standard errors. (Do this by HAND with a calculator and show your work).
- (b) How do you interpret the intercept and the slope of the regression line?
- (c) Test the significance of X at 5% significance level by assuming classical assumptions (stated in class) are satisfied.
- (d) If you had sole control over the money supply and wished to achieve a level of national income of 12.0 in 1999, at what level would you set the money supply? Explain.
- (e) Compute the coefficient of determination R^2 . Explain the meaning of the estimated R^2 .
- (f) Construct 95% confidence interval for the parameter of X . Interpret this confidence interval.