ASSIGNMENT #2
Due Thursday October 14
(at the beginning of the class)

Show all your calculations for credit.

1. Goods Market Model

Suppose we have the following economy described by:

\[ C = 100 + 0.8Y_D \]
\[ Y_D = Y - T \]
\[ I = 50 \]
\[ G = 138 \]
\[ T = 90 \]
\[ Z = C + I + G \]

where \( C \) is consumption, \( Y_D \) is disposable income, \( Y \) is output (income), \( T \) is tax, \( I \) is autonomous investment, \( G \) is government spending, and \( Z \) is aggregate spending (demand).

a. Calculate the equilibrium value of income?

\[ Y = \]
b. Calculate the value of the government spending multiplier $m_g$ in this economy?

\[ m_g = \ldots \]

c. Calculate the budget surplus BS (specify the sign):

\[ BS = \ldots \]

Now imagine the government switches from a flat tax system to a progressive tax

\[ T' = tY \quad \text{with} \quad t = .25 \]

d. Determine the new equilibrium value of income $Y'$:

\[ Y' = \ldots \]

e. What is the value of the new government spending multiplier $m'_g$?

\[ m'_g = \ldots \]

Is it the same or smaller or larger as/than the multiplier in b.?

Explain why?
f. Calculate the budget surplus BS (specify the sign):

BS = _____________

g. Now consider the two taxation systems. In a. to c. we have a flat tax and in d. to f. we have a progressive tax. Let’s assume that, in either case, autonomous investment increases by 100.

i. Calculate the resulting change (if any) of output:

Flat tax model: \( \Delta Y = \) ________________ (specify the sign)
Progressive tax model: \( \Delta Y = \) ________________ (specify the sign)

ii. Calculate the resulting change (if any) in the budget surplus:

Flat tax model: \( \Delta BS = \) ________________ (specify the sign)
Progressive tax model: \( \Delta BS = \) ________________ (specify the sign)
In sum: When the economy is stimulated by an increase in autonomous investment:

- will the flat tax model result in
  
  i. an increase or a decrease or no change in the total amount of taxes paid by the public?

  ii. an increase or a decrease or no change in the budget surplus?

- will the progressive tax model result in
  
  i. an increase or a decrease or no change in the total amount of taxes paid by the public?

  ii. an increase or a decrease or no change in the budget surplus?

Finally, will the progressive tax model

- iii. amplifies or dampens or has no impact on the ups and downs of the economy (i.e. the business cycle)?

2. Financial Markets

Textbook p. 85 # 2, 3 and 4