Review Notes – National Income

- What determines total output in the economy?
  - The resources available – assume \( L = \bar{L} \) and \( K = \bar{K} \).
  - The production function
    - What is that?
    - \( Y = f(L, K) \)
    - \( Y = \) nominal GDP
    - How does technology affect production?
    - \( Y = f(\bar{L}, \bar{K}) = \bar{Y} \) - What does this mean?

- How is \( Y \) distributed to the factors of production?
  - Assuming competition and fixed supply of inputs (\( L = \bar{L} \) and \( K = \bar{K} \)).
  - \( P^*MP = MFC \) for both inputs
  - How are these results similar to the isoquant/isocost approach we used in the micro section?
  - \( \pi = Y – MP_L * L – MP_K * K \) or \( Y = \pi + MP_L * L + MP_K * K \). What is the interpretation of these equations?
  - Euler’s Theorem – with constant returns to scale (what does that mean?) then: \( f(K, L) = MP_L * L – MP_K * K \).
    - What is the implication of Euler’s Theorem? (Hint: what happens to profit?)
    - What is economic \( \pi = ? \)
    - What is accounting \( \pi = ? \)
    - How does the plague example from the book support this interpretation?

- What is Aggregate Demand for goods and services?
  - \( GDP = C + I + G + NX \)
  - Assume a closed economy => \( NX = 0 \)
  - Consumption
    - \( Y_d = Y – T \)
    - \( C = C (Y – T) \) or \( C = C (Y_d) \).
    - What is the marginal propensity to consume?
      - \( C = C_A + b * Y_d \)
      - \( C_A = \) autonomous consumption (intercept of consumption function)
      - \( b = \) MPC (slope of consumption function)
  - Investment
    - Why does investment depend on the interest rate?
    - Which interest rate, nominal or real, does investment depend on? Why?
• How does r affect investment?

- Government Spending
  - What are the three types of government spending (hint: focus on types of governments)?
  - Which government spending is included in G and which is not?
- Budgets
  - When is the government budget balanced, in deficit or in surplus?
  - G and T are assumed to be exogenous – why? What does that mean?
    - G = \( \bar{G} \) and T = \( \bar{T} \).

• Equilibrium in the Macro Economy

- What do we know from the demand side?
  - \( Y = C + I + G \)
  - \( C = C(Y - T) \)
  - \( I = l(r) \)
  - \( G = \bar{G} \)
  - \( T = \bar{T} \)
- What do we know from the supply side?
  - \( Y = f(L, K) = \bar{Y} \)

- Combine Demand and Supply equations to get
  - (1) \( \bar{Y} = C(\bar{Y} - \bar{T}) + l(r) + \bar{G} \)
- What is the equilibrating variable in equation 1?
- How does r create equilibrium?
  - Rewrite (1) to get: \( \bar{Y} - C(\bar{Y} - \bar{T}) - \bar{G} = +l(r) \)
  - \( Y - C - G = S \) so it must be the case that equilibrium requires
  - \( S = l(r) \) or
  - \( (Y - T - C) + (T - G) = I \)
  - \( Y - T - C = \) private saving
  - \( T - G = \) public saving
  - Know the graph and how the interest rate creates equilibrium (Hint: this is basically demand and supply of loanable funds.)

• The impact of fiscal policy and other exogenous changes in GDP

- What is fiscal policy?
- What happens with an increase or a decrease in G?
  - Define crowding out and how it occurs
  - Does C change when G changes?
  - Does I change when G changes?
  - Be sure that you understand exactly how the crowding out occurs and which sector of the economy is affected.
What happens with an increase or a decrease in T?
- Does crowding out occur with this change?
- Does C change when T changes?
- Does I change when I changes?

What happens with an increase or a decrease in I?
- Why does I(r) change?
- Given the above assumptions, if I(r) shifts right does equilibrium I increase?
- How does the above answer change if C is also a function of the interest rate (C = C(r))?