Chapter 4 One-Period Model of the Macroeconomy

The Representative Consumer

Preference

- ***Three Properties***:
    1. More is always preferred to less.
    2. The consumer likes diversity in his/her consumption bundle.
    3. Consumption and leisure are normal goods.

> *A good is **normal** for a consumer if the quantity of the good that he or she purchases increases when income increase.*

> *A good is **inferior** for a consumer if he or she purchases less of that good when income increases.*

- ***Marginal rate of substitution***:
  The marginal rate of substitution of leisure for consumption, denoted
  $$MRS_{l,c}$$
  is the rate at which the consumer is just willing to substitute leisure for consumption goods.

Budget Constraint

- Time constraint:
  $$l + N^s = h$$
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- Budget constraint:
  $$C = wN^s + \pi - T$$
  $$\Rightarrow$$
  $$C = w(h - l) + \pi - T$$
  $$C = -wl + wh + \pi - T$$

Consumer Optimization

The optimum takes the following form:

$$MRS_{l,c} = w$$

- The rate at which the consumer is willing to trade leisure for consumption is equal to the rate at which leisure trades for consumption in the market, thus the consumer is at his or her optimum.

Reactions to the Change in Real Dividends or Taxes

- ***Pure income effect***:

  The increase in

$$\pi - T$$

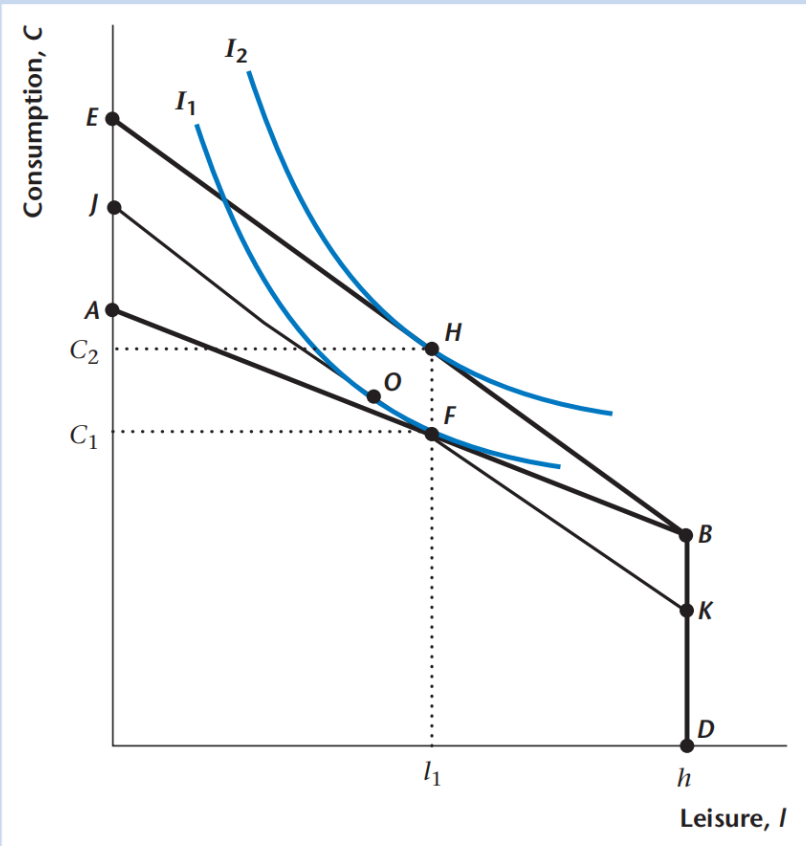
  when holding w constant

Reactions to Changes in the Real Wage: Income and Substitution Effects

We change real wage holding dividends and real taxes constant.

Figure 4.8 Increase in the Real Wage Rate–Income and Substitution Effects

An increase in the real wage shifts the budget constraint from ABD to EBD. The kink in the constraint remains fixed, and the budget constraint becomes steeper. Consumption must increase, but leisure may rise or fall, because of opposing substitution and income effects. The substitution effect is the movement from *F* to *O*; the income effect is the movement from *O* to *H*.



- ***Substitution effect:***
    - First, given the new higher real wage, suppose that we take away dividend income from the consumer or increase taxes until he or she chooses a consumption bundle O that is on the initial indifference curve I1.
    - The movement from F to O is a pure substitution effect in that it just captures the movement along the indifference curve in response to the increase in the real wage.
    - The real wage increases, so that leisure has become more expensive relative to consumption goods, and the consumer substitutes away from the good that has become more expensive (leisure) to the one that has become relatively cheaper (consumption).

    Therefore, the substitution effect of the real wage increase is for consumption to increase and for leisure to decrease, and so the substitution effect is for labor supply,

    $$N^s = h = l$$

    to increase.

- ***Income effect:***

    Movement from O to H, as the real wage stays the same and non-wage income increases

    - Because both goods are normal, consumption increases and leisure increases
- ***In total***

    consumption increases

    unclear whether leisure rises or falls

The Representative Firm