

TUTORIAL 4 – WEEK 5

Specific Factors Model

Q1. Home is a country that produces motorbikes (M) and diesel (D). The factors of production are steel furnaces (S), oil refineries (O), and labour (L). Steel furnaces are specific to the production of motorbikes, oil refineries are specific to the production of diesel, and labour is a mobile (non-specific) factor of production. The marginal product of labour in the motorcycle sector is currently 0.25 motorcycles a day, and the marginal product of labour in the diesel sector is currently 4 kilolitres a day.

- a. What is the production function for motorbikes? What is it for diesel?
- b. Draw the 'four-way' graph for this economy (put motorbikes on the top y-axis). Why do the production functions have this shape?
- c. Solve the following equation: $L - L_D = ?$
- d. If the equilibrium wage is \$125 a day, what must be the price of a motorcycle and a kilolitre of diesel in this economy? What assumption are we making when we make these calculations?
- e. Draw a PPF for Home (with motorbikes on the y-axis) and show the point of production in autarky. What is the slope of the line tangential to the PPF at this point?

Assume that Home opens up to trade, and the price of motorcycles increases by 10%.

- f. What will happen to the wage rate of employees in the motorcycle sector? How will the wages in the diesel sector change?
- g. Does the MPL change in either sector? Why/why not?
- h. Are owners of steel furnaces now better off with trade? What about owners of oil refineries? What about the workers in both sectors?
- i. Show the effect of opening up to trade on a PPF
- j. Show the effect of opening up to trade through general equilibrium analysis