

CHAPTER 3

Static and Comparative Static Equilibrium Analysis

Topics: Static and Comparative Static Equilibrium Analysis**Outline:**

- Individual and market demand
- Individual and market supply
- Excise tax and market equilibrium
- Y-DAE model
- IS-LM model
- Breakeven analysis
- Examples of nonlinear model

Market supply can be found by summing individual inverse supply function horizontally.

Suppose that:

Individual supply function for energy drink of producer 1 is: $q_1^s = -c_1 + d_1P$

Individual supply function for energy drink of producer 2 is: $q_2^s = -c_2 + d_2P$

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Individual supply function for energy drink of producer n is: $q_m^s = -c_m + d_mP$

At each price p , we want to find total supply from every producers in the market. The total amount supplied is the horizontal sum of the individual supply curves. This can be done as the following.

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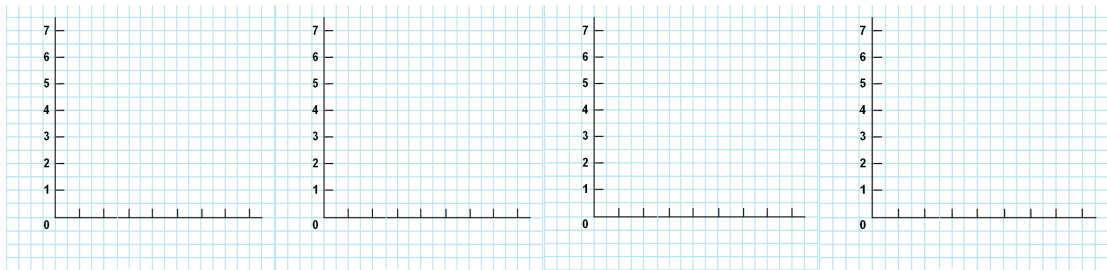
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Example: Suppose that market A has three consumers, Melanie, Andre, and Wilford. Demand of each consumer is as follows:

Price of A	Demand of Melanie	Demand of Andre	Demand of Wilford
1	6	10	16
2	4	8	13
3	2	6	10
4	0	4	7
5	0	2	4

Find individual demand function and market demand function



Example

Market demand for goods X is:

$$Q^D = 400 - 2P$$

Individual supply of each producer in the market is:

$$q_i^S = -8 + P$$

Please answer the following questions:

a.) If there are 10 producers, what are equilibrium market price and quantity?

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If we are interested in how balance of trade, _____, will change as a response of change in government expenditure, the analysis will be accordingly:

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IS-LM model

The Keynesian crossing model considers only equilibrium in a market for good. Now, we will add money market into our analysis.

The quantity of money supplied $:M_0$ is determined exogenously outside the model, while the quantity of money demanded is determined in the market

$$: M_D = fY - \beta r, f, \beta > 0$$

The equilibrium in money market happens when the quantity of money supplied is equal to The quantity of money demanded.

That is, the conditional equation for equilibrium in money market is:

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When combining a full-version of open economy Keynesian cross model for goods market with money market, the equilibrium output and interest rate will be determined by the system of simultaneous equation:

$$Y = C + I + G + X - M$$

$$Y_d = Y - T$$

$$T = tY$$

$$C = C_0 + bY_d$$

$$I = I_0 - er$$

$$G = G_0$$

$$X = X_0$$

$$M = mY$$

$$fY - \beta r = M_0$$

Endogenous variables:

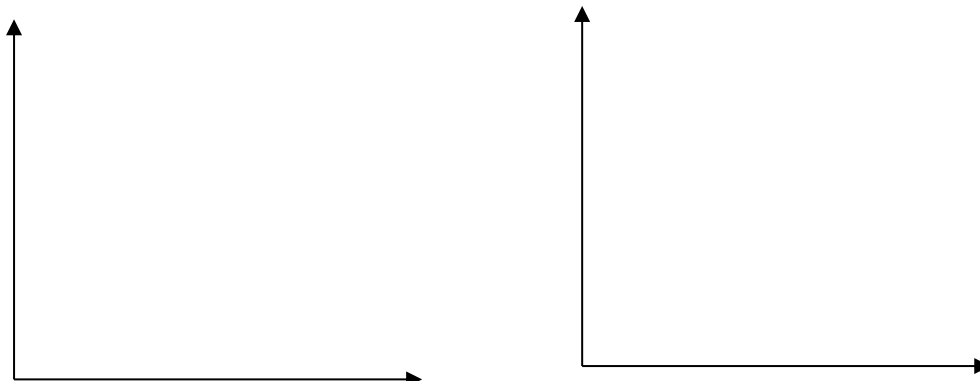
Exogenous variables:

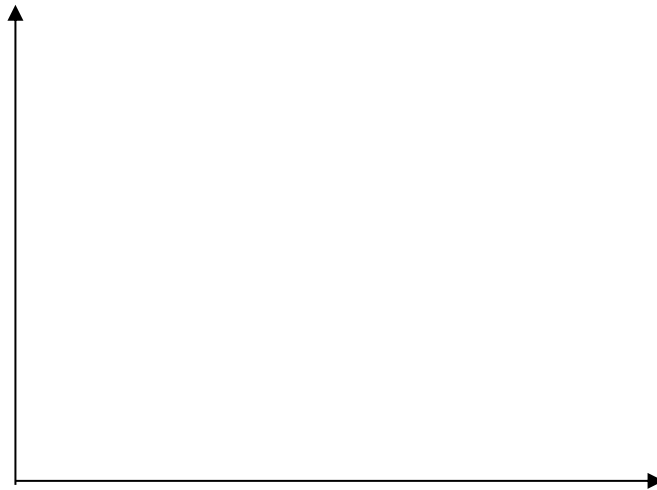
four levels of Autonomous spending:

the constant stock of money:

When we solve the goods market model, we will have ordered pair (Y, r) such that the goods market is in equilibrium. The graph of such ordered pair is called IS Curve. (To note, equilibrium in the good market requires that planned investment and planned saving be equal.)

When we solve the market market model, we will have ordered pair (Y, r) such that the money market is in equilibrium. The graph of such ordered pair is called LM Curve.





Break-Even Analysis

Example: Let a producer have total fixed cost equal to 300 baht and average variable cost equal to 10 baht. Assume that total cost is linear.

a.) Write down definitional equation for total cost

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b.) If the producer sets the price at the twice of average variable cost, how many output does the producer need to sell so that he is break-even?

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☞ The relationship between price elasticity of demand and total revenue

Using the definitional equation for Total Revenue(TR) and inverse demand function, we have that Total Revenue(TR) is equal to:

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