

ECONOMICS 2

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Course Material Developed by Department of Economics,
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Week 7

Aggregate demand 1

Chapters 9

Outline

- Keynesian cross
- IS curve
- LM curve

Plan

We arrive at the aggregate demand in more steps:

1. Keynesian cross
2. IS–LM model
3. Aggregate demand

Market of goods

In the market of goods the Y is not exogenous any more. From now on the utilization of income is only planned utilization:

$$E = C + I + G,$$

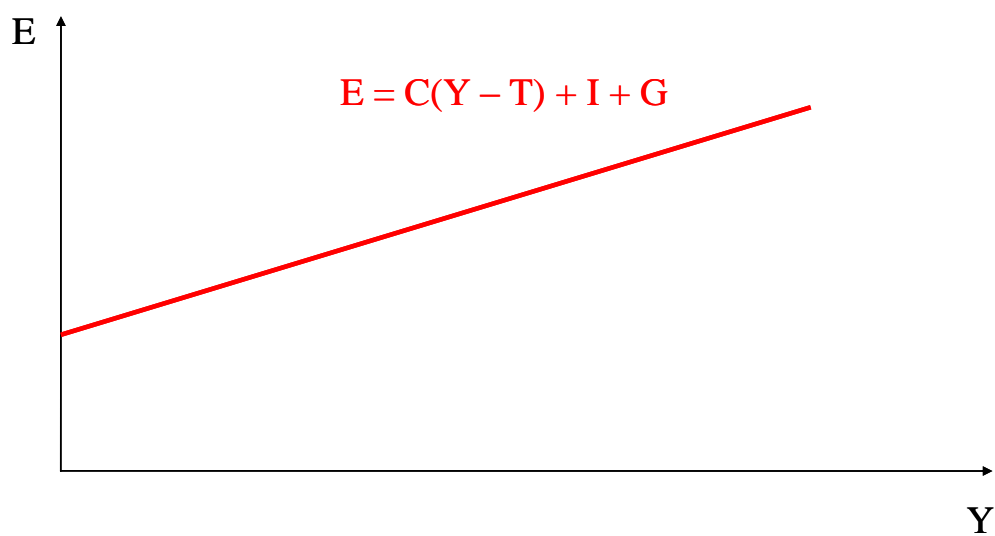
Where

$$C = C(Y - \bar{T})$$

$$I = \bar{I}$$

$$G = \bar{G}$$

Planned expenditure as function of income

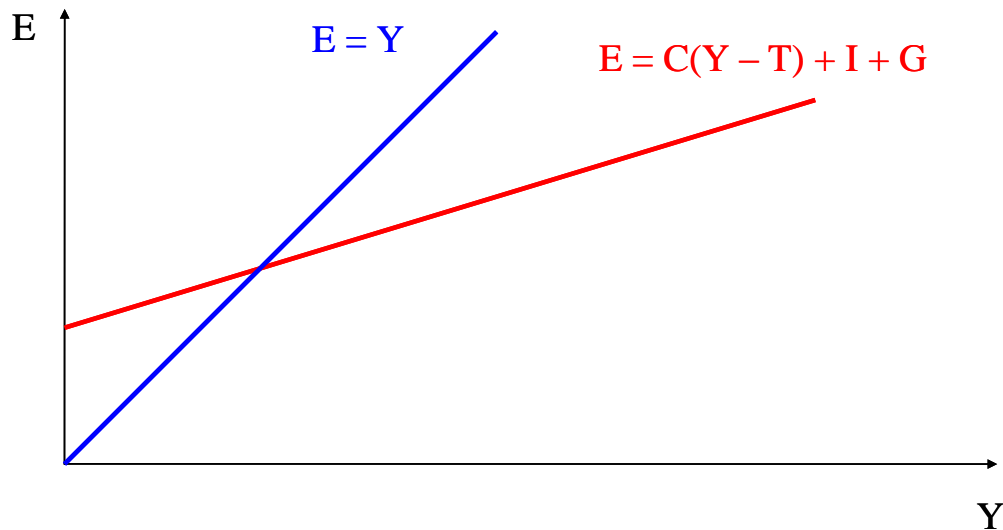


Equilibrium condition

$$E = Y$$

$$Y = C(Y - \bar{T}) + \bar{I} + \bar{G}$$

Keynesian cross



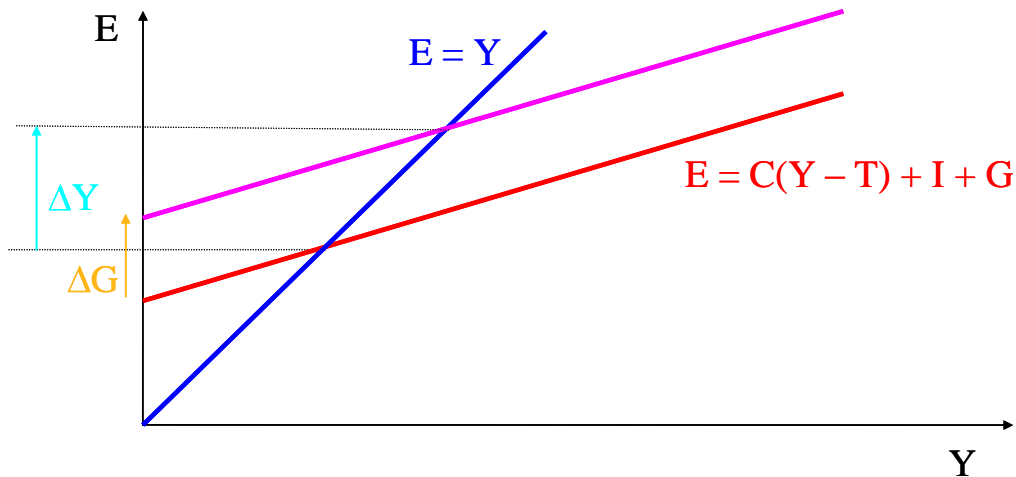
How the economy achieves equilibrium

- Assume that $E < Y$, thus the income is larger than expected.
- The firms sell less than produced, thus the production is decreased. Temporarily there are superfluous, not planned stocks.

How the economy achieves equilibrium

- Assume that $E > Y$, thus the income is smaller than expected.
- The stocks of firms decrease more than planned.
- The firms increase production.

Effect of increasing public expenditures



Public expenditure multiplier

On the graph we can see that $\Delta Y / \Delta G > 1$.
But why is it true?

Higher public expenditures increase the income, higher income increases the consumption, which increases the income further...

Public expenditure multiplier

Let the consumption function be:

$$C = MPC Y + C_0$$

Increasing income 1: ΔG

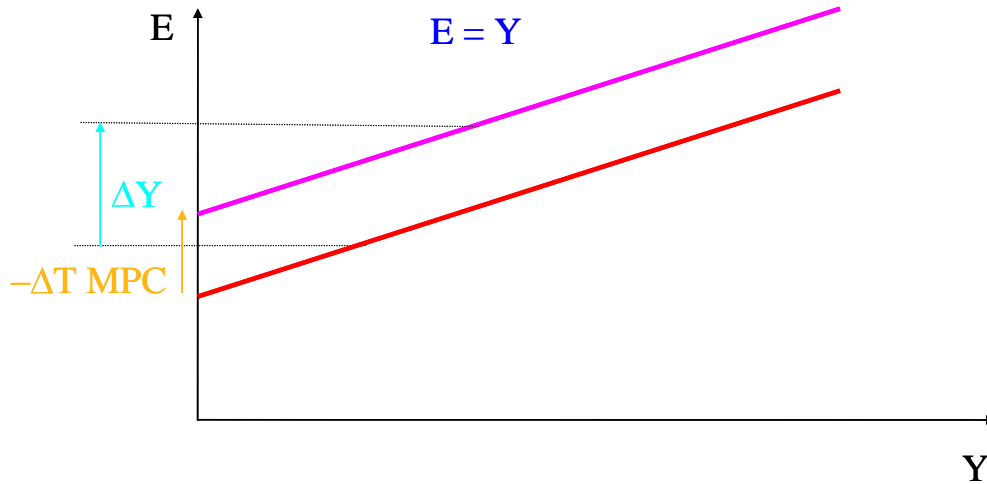
Increasing income 2: $MPC \Delta G$

Increasing income 3: $MPC MPC \Delta G$

Etc...

From mathematics we know that the total increase in income is: $\Delta Y = 1 / (1 - MPC) \Delta G$

Tax multiplier



Tax multiplier

Analogously to the previous procedure:

Increasing income 1: $MPC (-\Delta T)$

Increasing income 2: $- MPC (MPC \Delta T)$

Increasing income 3: $- MPC MPC (MPC \Delta T)$

Etc...

From mathematics we know that the total increase in income is:

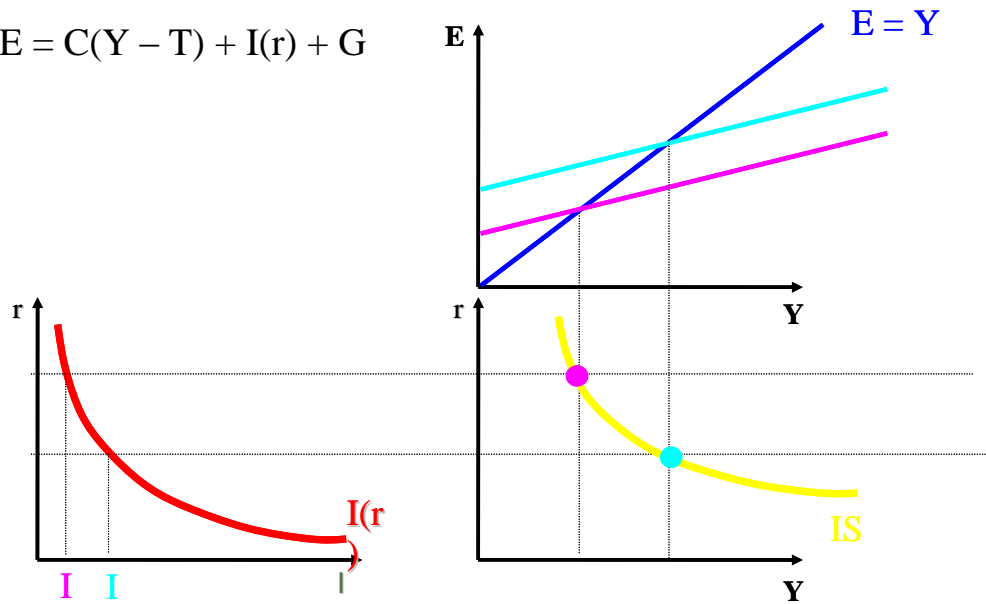
$$\Delta Y = - MPC / (1 - MPC) \Delta T$$

Interest rate, investment

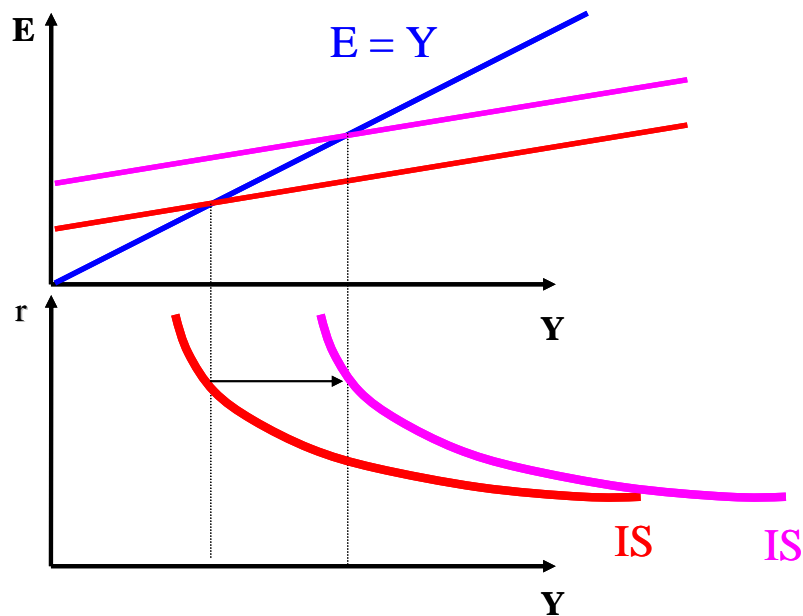
According to what we have learnt before, investment is not exogenous but a function of real interest rate.

IS curve

$$E = C(Y - T) + I(r) + G$$



Effect of fiscal policy on IS curve



Supply on the money market

The supply of nominal money M is exogenously determined by the central bank. In the short run the price level P is exogenously given.

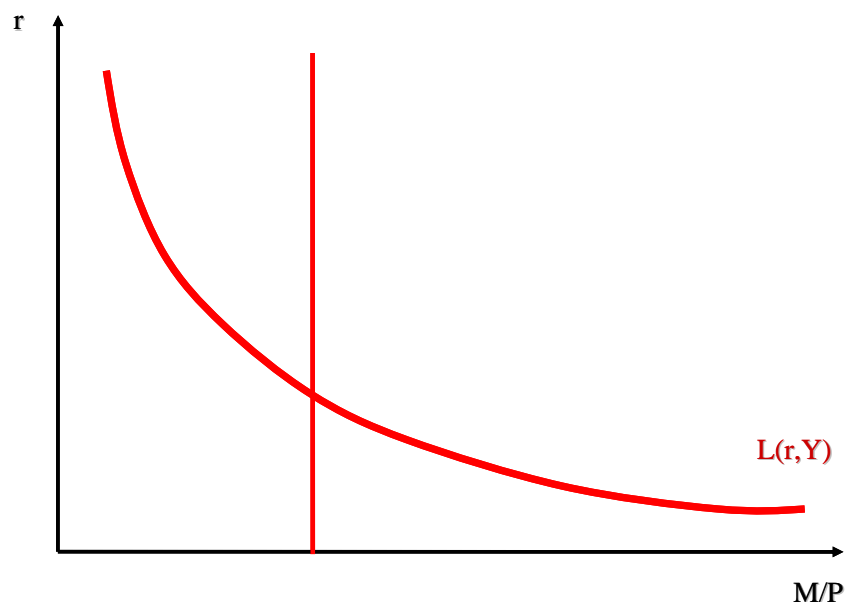
The supply of real money M/P is constant.

Demand on the money market

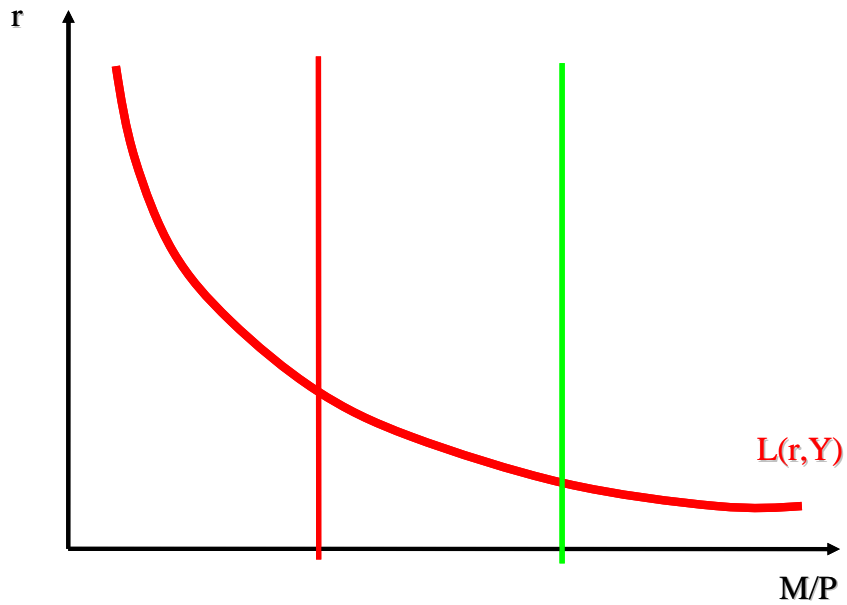
As we have learnt, the money demand depends on two factors: income and interest rate.

1. The higher the interest rate, the less money the people want to hold, since the costs of holding money are higher.
2. Higher income implies more transactions and higher demand for money.

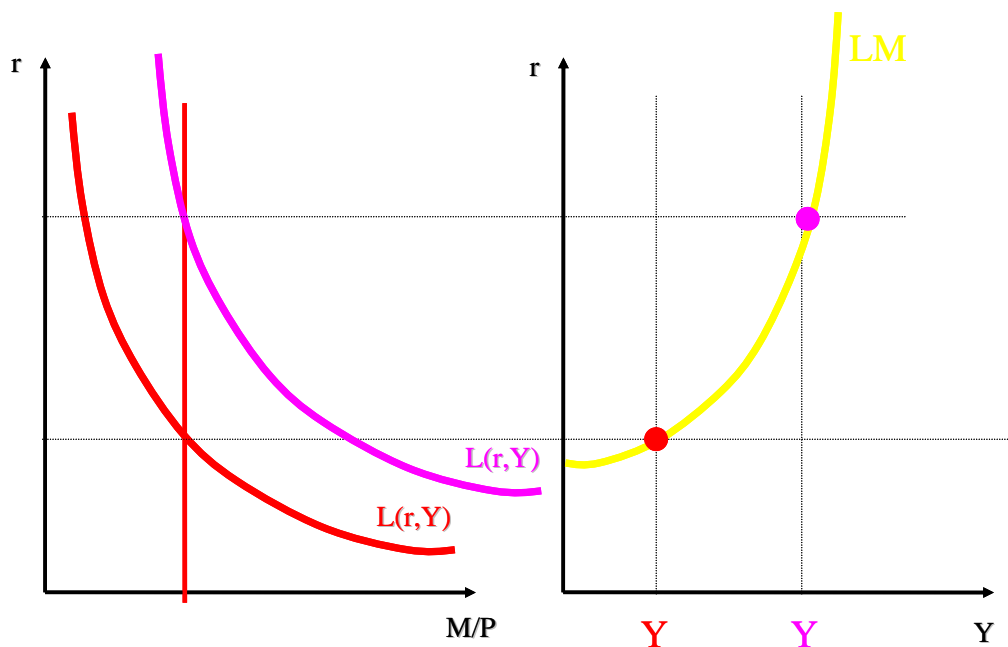
Money market equilibrium



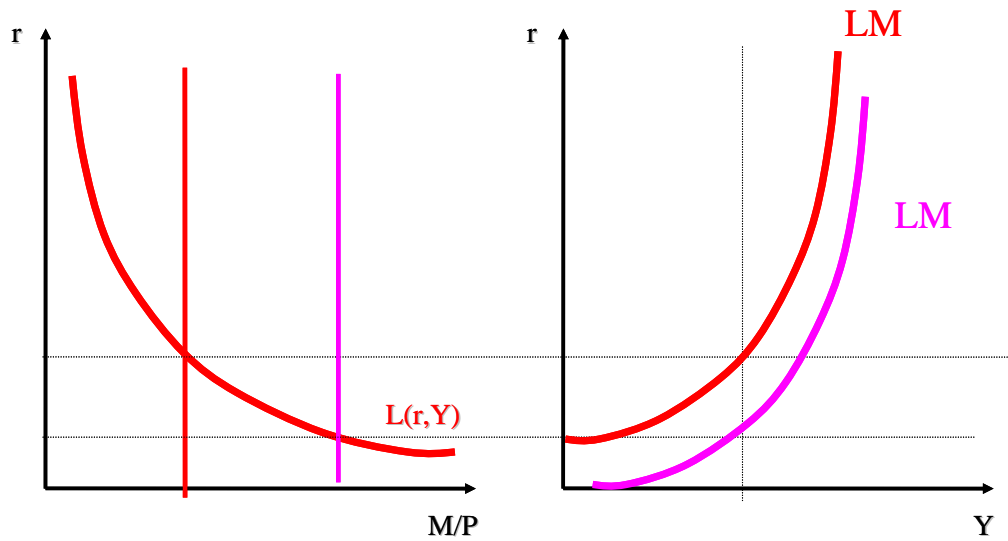
The role of monetary policy on the money market



LM curve



Effect of monetary policy on LM curve



Equilibrium in the IS–LM model

$$Y = C(Y - T) + I(r) + G$$

$$M/P = L(r, Y)$$

