

## MODELING OF MONEY SUPPLY AND GOVERNMENT SPENDING IMPACT ON INCOME AND INTEREST RATE DYNAMICS

In these theses, IS-LM is presented as a dynamic framework. Hicks's IS-LM charts use an unprecedented rule as the basis of modern macro theory. Today, they remain surprisingly useful tools for comparative static analysis.

The IS curve shows the equilibrium situations between investment and saving for different values of income (Y) and interest rate (r).

The LM curve reflects the relationship between the interest rate and the level of income that occurs at equilibrium in the money market. The IS-LM model makes it possible to analyze the impact of macroeconomic policy for the equilibrium level of income in the national economy in the short term. It is believed that the higher is the level of production and income, the greater is the demand for money; and the higher is the demand for money, the higher is the interest rate, as a rule.

The equilibrium situation can be altered by variables other than the interest rate, which can cause the curves to shift.

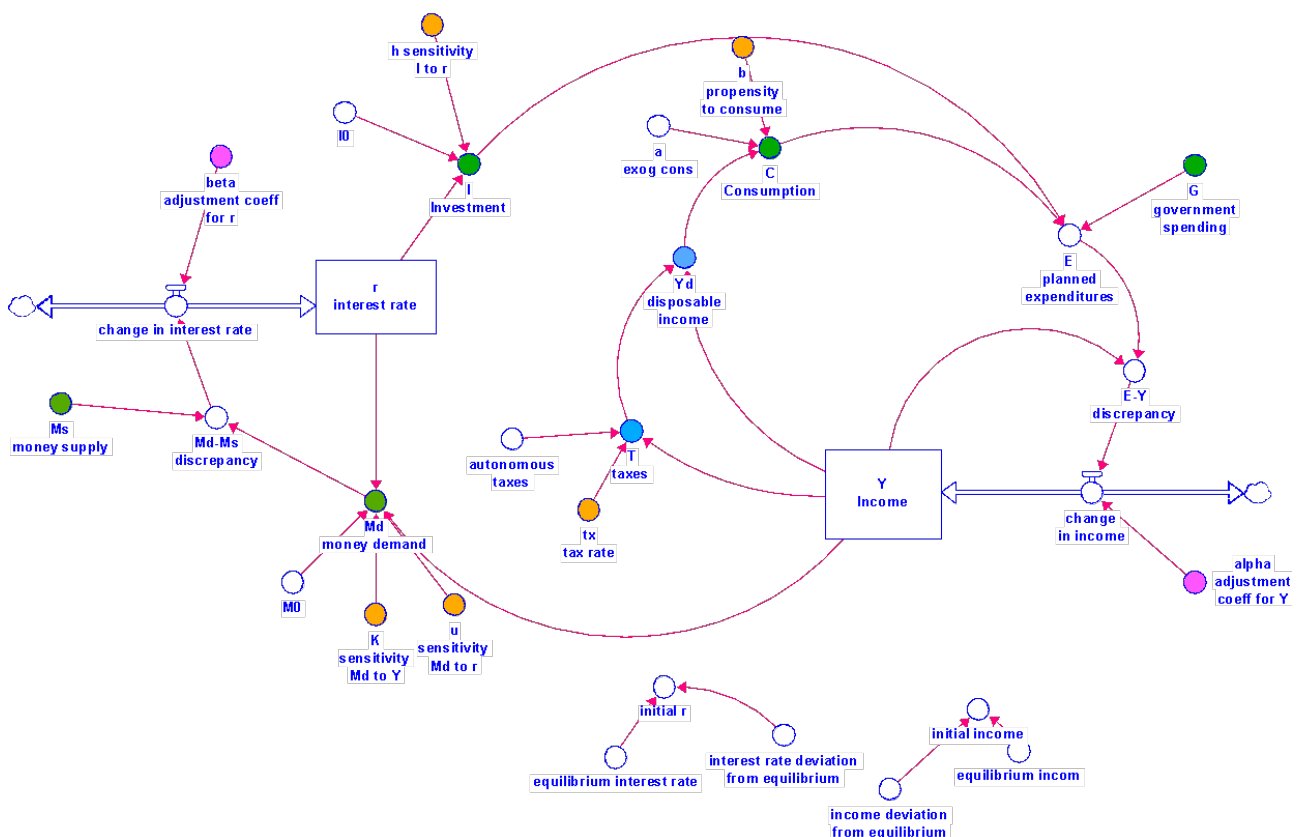


Figure 1. IS-LM model

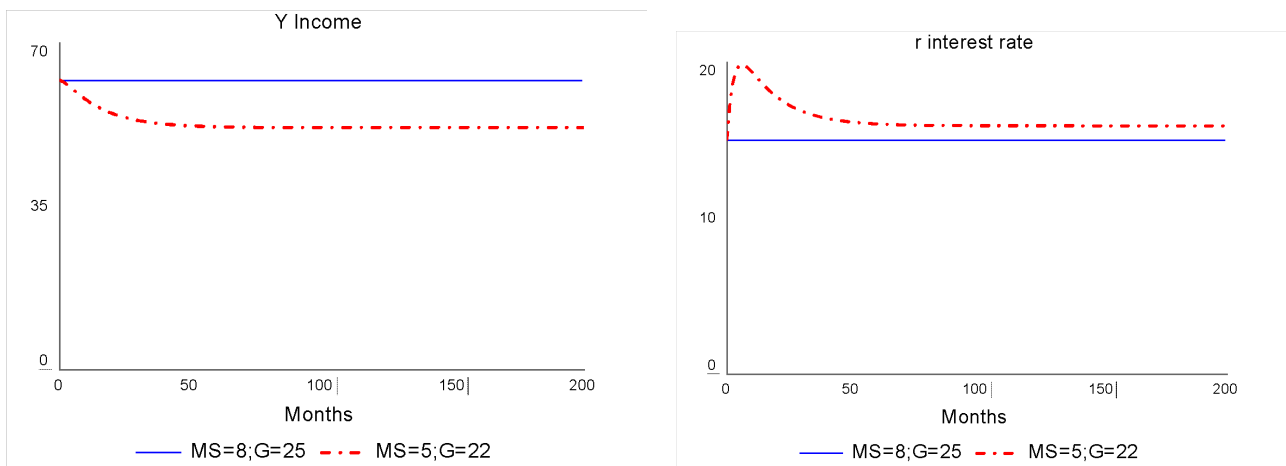
Let's analyze what will happen to the interest rate and income in the event of changes in the money supply and government spending.

**Table 1. Changes in the money supply and government spending**

Case	1	2	3	4	5
Money Supply	8	5	10	5	10
Government spending	25	22	30	30	22

The first case is equilibrium. Therefore, we consider Case 2.

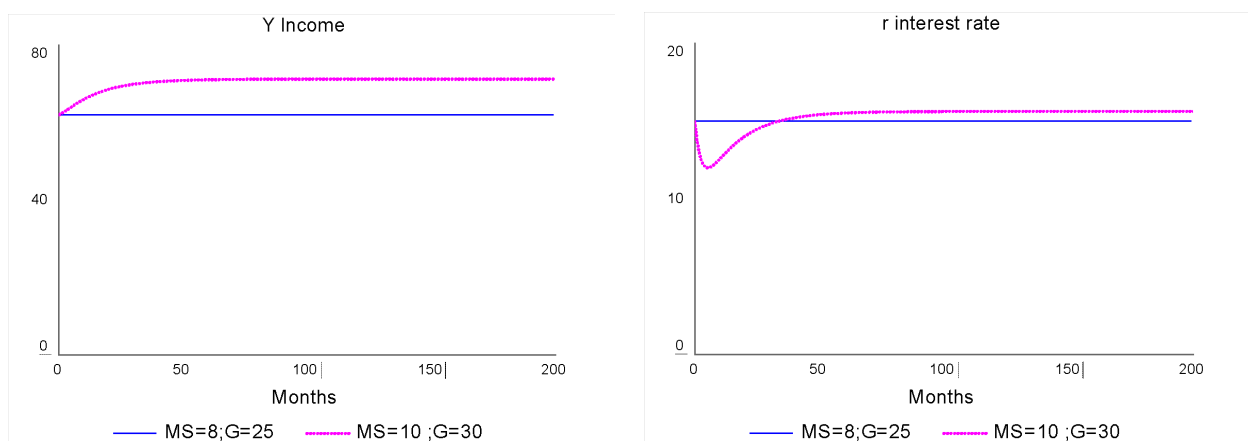
Let's analyze the situation when the money supply and government spending will decrease and discover what will happen to the interest rate and income.



**Figure 2. Results of changes in money supply and government spending**

Fig. 2 shows that with a decrease in the money supply and government spending the income decreases and comes to equilibrium at the value of 52, and the interest rate in first month increases rapidly, but by the 70th month it comes to equilibrium at 16.

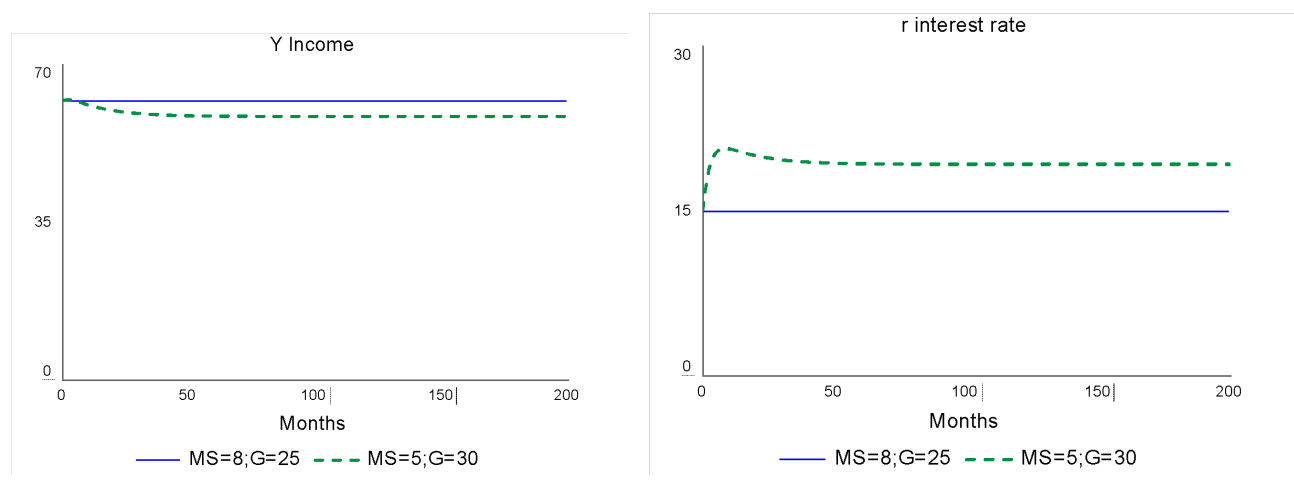
In Case 3 the money supply and government spending are increasing.



**Figure 3. Results of changes in money supply and government spending**

Fig. 3 represents that income is increasing and reaching equilibrium at 71.2. However the interest rate drops sharply and then rises above the initial level = 15.6.

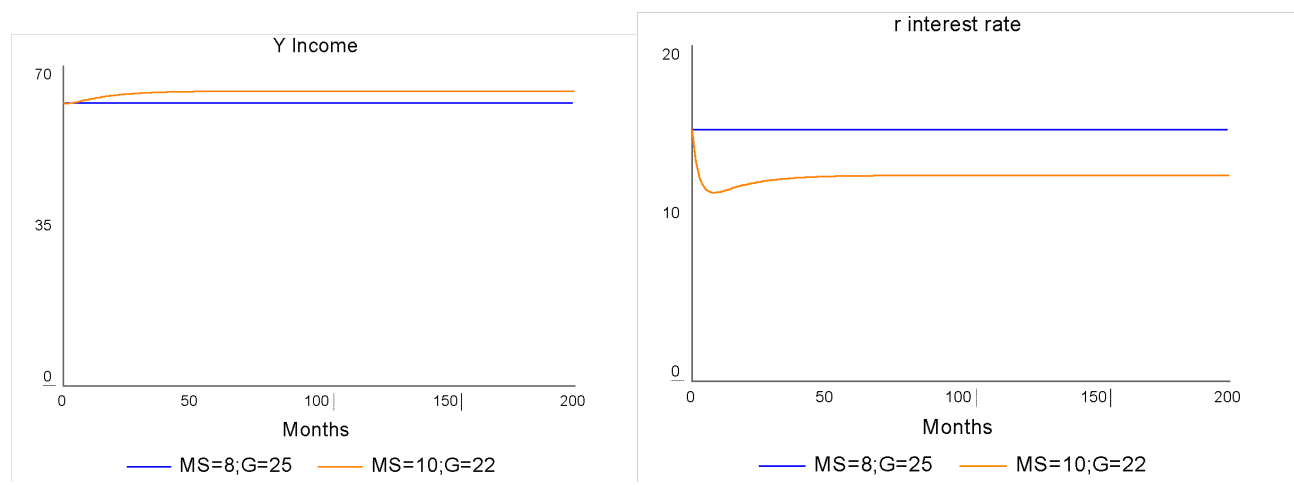
In Case 4 the money supply is decreasing, and government spending is increasing.



**Figure 4. Results of changes in money supply and government spending**

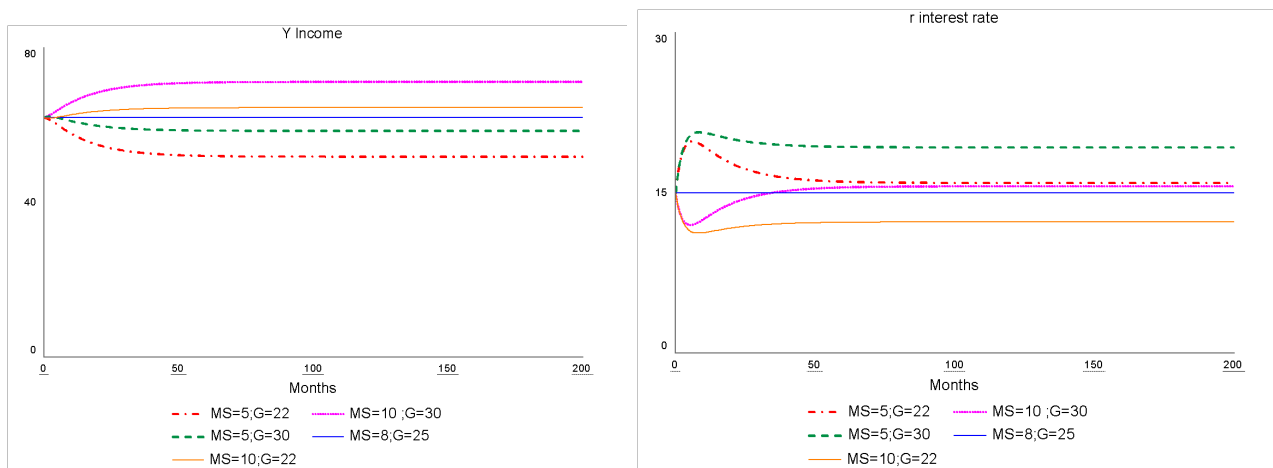
As we can see, at first it increases a little, and then decreases and comes to an equilibrium of 58.5. The interest rate increases and reaches equilibrium at 19.3.

In Case 5 the money supply increases and government spending decreases.



**Figure 5. Results of changes in money supply and government spending**

Income increases and comes to equilibrium at the value of 64.6, and the interest rate in the first months decreases rapidly, but then comes to equilibrium at 12.3.



**Figure 6. Aggregate results of changes**

From this analysis, it follows that if the money supply decreases then income decreases and the interest rate increases. An increase in the amount of money in circulation causes the increases in its supply and, accordingly, reduces the cost of loans and credits. When it is easier to borrow money the rate of lending increases, as does investment, aggregate production, and consumption.

### References

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