

Ilinska Nataliia

*Bachelor student, LNU*

Kyrylych Volodymyr

*Professor, LNU*

**INFLUENCE OF FISCAL POLICY  
ON THE EQUILIBRIUM LEVEL OF INCOME AND INTEREST RATE  
IN A CLOSED ECONOMY**

We will consider the IS-LM model, which characterizes a closed economy in the short-term period under the condition of an unchanged price level.

In this model, the IS curve reflects the inverse relationship between the interest rate and the level of income, which arises as a result of establishing equilibrium in the market of goods and services. The IS curve describes all combinations of income  $Y$  and interest rate  $i$  for which the following equality holds true:

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

where  $Y$  is the volume of production of goods and services in the economy or GDP;  $C$  – household consumption;  $I$  – investments, the volume of which depends on the change in the interest rate  $r$ ;  $G$ ,  $T$  – state expenditures and taxes as variables of fiscal economic policy.

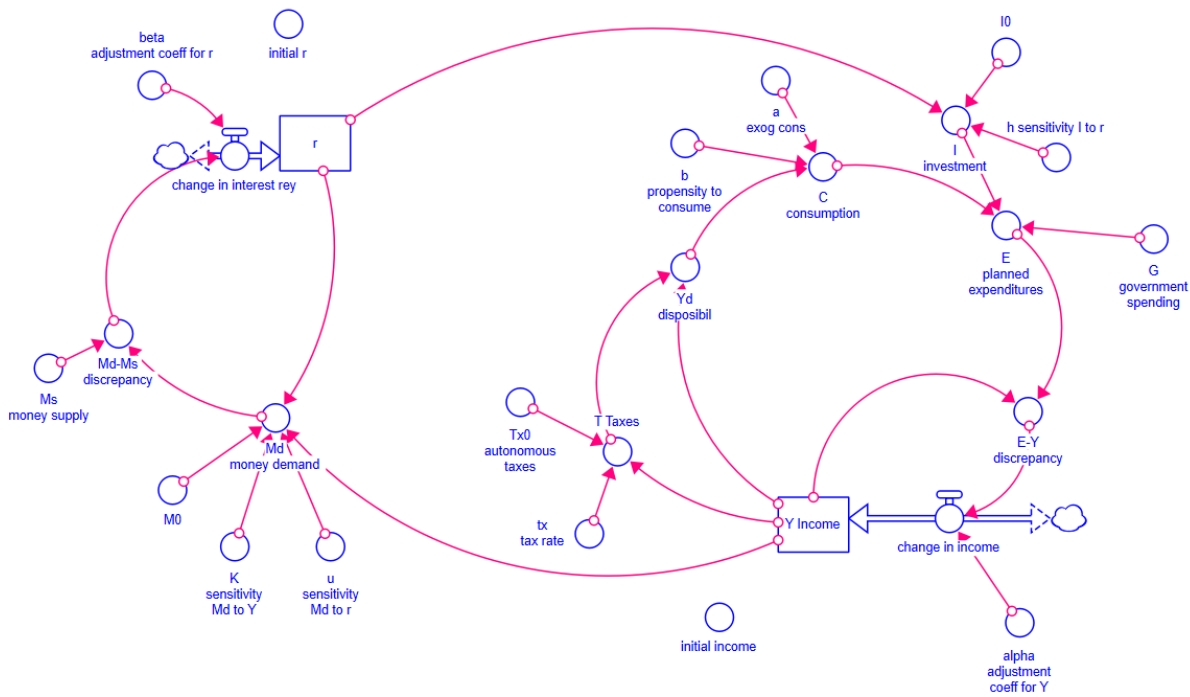
The LM curve shows a direct relationship between the interest rate and the level of income. It characterizes the equilibrium in the market of real money balances, which is described by the equation:

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

where  $M/P$  - real money balances. Monetary policy variables - money supply  $M$  and price level  $P$ .

In combination, the IS and LM curves determine the interest rate and national income in the short run, assuming a constant price level.

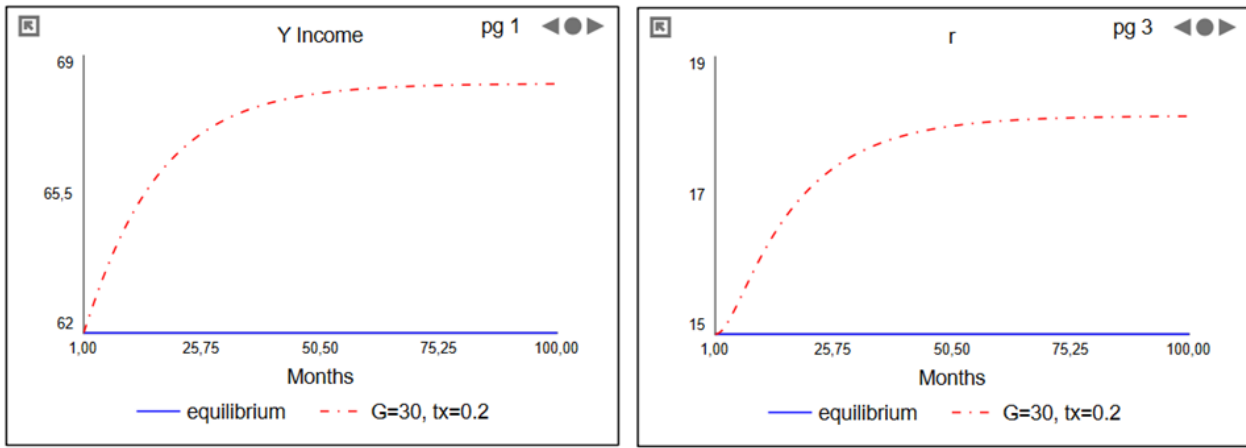
The point of intersection of the IS and LM curves characterizes the state of equilibrium of the economy, that is, determines the interest rate and the level of income that satisfy the equilibrium conditions, both in the market of goods and services, and in the money market.



**Figure 1. IS-LM Model**

With the help of the IS-LM model, it is possible to analyze how fiscal policy affects the parameters of macroeconomic balance in the short term.

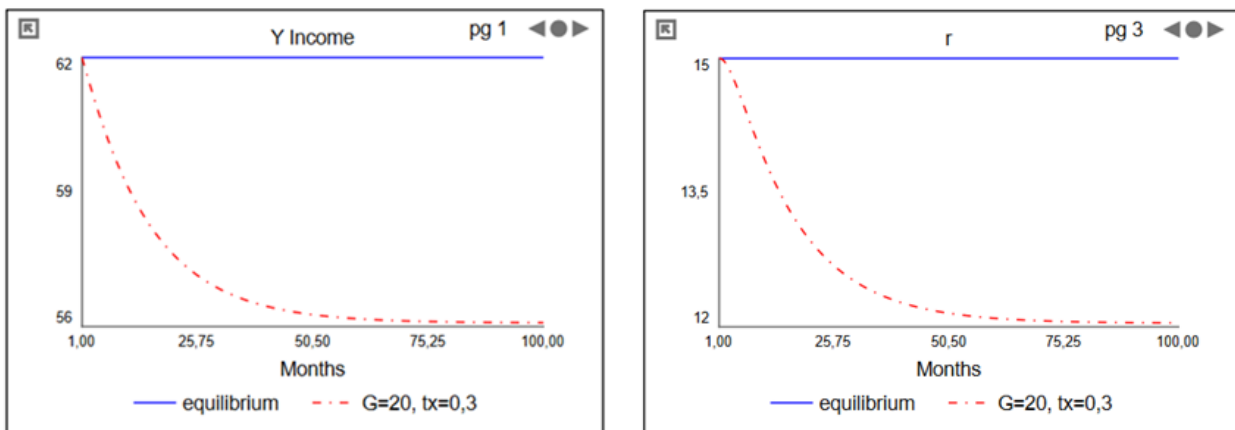
The impact of a stimulative fiscal policy, which involves an increase in government spending and a decrease in taxes, shifts the IS curve to the right. We will increase government spending to 30, and reduce taxes to 0.2.



**Figure 2. Dynamics under the impact of stimulative fiscal policy**

As a result, the income and interest rate increases. At the same time, it should be noted that the impact of fiscal policy can be weakened by the effect of crowding out - a decrease in the volume of investments due to an increase in the interest rate.

A restraining fiscal policy leads to the opposite result - an increase in investment and a fall in the interest rate and, as a result, the shift of the IS curve to the left. At the same time, the income decreases.



**Figure 3. Dynamics under the impact of restraining fiscal policy**

So, using the IS-LM model, it is possible to analyze how fiscal policy affects the parameters of macroeconomic equilibrium. If the government uses a stimulative fiscal policy, the IS curve will shift to the right. When using a restrictive fiscal policy, the IS curve will shift to the left.

### *References*

1. Shone, Ronald. (2003). *An Introduction to Economic Dynamics*. Cambridge: Cambridge University Press, pp. 91-101.
2. Mankiw, N. Gregory. (2016). *Macroeconomics*. 9th ed. New York: Harvard University, Worth Publishers. P. 548.
3. Wheat I.D., Oliskevych M., Novik A. (2021). *Get Started with Macro Modeling*. // In: Cavana R.Y., Dangerfield B.C., Pavlov O.V., Radzicki M.J., Wheat I.D. (eds)// *Feedback Economics. Contemporary Systems Thinking*. Springer. Cham, Switzerland. 593 P.
4. Sterman, J. D. (2000). *Business Dynamics: System Thinking and Modeling for a Complex World*. New York, Irwin. McGraw-Hill. 982 p.
5. Zomchak, L., Nehrey, M., Oliskevych, M., Voronenko, I., Rogoza, N. (2023). *Economic Growth and Environmental Degradation: Data Intelligence for Sustainable Environment*. *Journal of Information Technology Management*, Vol. 15(1), pp. 163–177.
6. Kozytskyy, V., Marianna Oliskevych, M., Beregova, G., Pabyrivska, N. (2023). *Output and Energy Prices Fluctuations in Response to Market Shocks: System Dynamic Modeling*. *International Journal of Energy Economics and Policy*, 2023, 13(2), 462-466.
7. Zhylynska, Oksana and Bazhenova, Olena and Chornodid, Ihor and Oliskevych, Marianna. (2020). *Terms of Trade and Industrialization: Case of Economies with Manufacturing Exports*. *Scientific Papers of the University of Pardubice, Series D: Faculty of Economics and Administration*. (Scopus). Vol. 28 (2020), Issue 2, pp. 1–10.
8. Oliskevych, M., Lukianenko, I. (2017). *Structural Change and Labor Market Integration: Evidence from Ukraine*. *International Journal of Economics and Financial Issues*. Vol. 7 (3), pp. 501–509.