



Course: Economics I (macroeconomics)

Study text

11th Chapter

Fiscal Policy

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11 Fiscal policy

In this chapter we will deal with fiscal or budgetary macroeconomic policy, whose main tool is, the state budget. Both, revenues and expenditures side of the state budget, are, used to achieve the objectives of macroeconomic policy in order to influence the level of employment and the general price level. Views on fiscal policy of economic trends were not uniform. Applying the tools of fiscal policy may be different - depending on the objective of macroeconomic policy.

11.1 State budget and fiscal policy

The state budget is a central element of public finances and centralized monetary fund generated, distributed and used central authorities. It consists of a large part of the gross domestic product. State budget and municipal budgets (regions and municipalities), special-purpose funds (social security), health insurance budgets and finances of state enterprises create public finance in the economy.

State budget fulfills several functions. Because it is a tool affecting macroeconomic variables, we talk about its stabilizing function. Since the state budget has ensured the production of public goods, trying to eliminate the negative externality, it fulfills allocation function. And the third function is redistribution one when the state budget carries out the secondary distribution of income (redistributive processes).

Taxes represent the main item of state budget revenues. Taxes are compulsory payments (involuntary, non-refundable, non-equivalent) transferred by individual entities to the state budget. Social and health insurance have also the character of taxes. And there are revenues from state firms, privatization, interest received or funds from supranational institutions included in state budget revenues side.

Approved state budget of the Czech Republic for a given year can be found on the website of the Ministry of Finance of the Czech Republic (<http://www.mfcr.cz>).

Taxes can be divided according to different criteria. Depending on how they are selected and paid, taxes are divided into direct and indirect.

Direct taxes include:

- *personal income taxes (personal income tax);*
- *taxes on corporate profits (corporate income tax).*

The direct taxes also include real estate tax, road tax, real estate transfer tax, inheritance tax, gift tax, etc.

Indirect taxes are imposed on goods or services and affect consumers indirectly, because they are part of prices. They include:

- *value added tax (VAT); this tax is imposed on the value added, i.e. the difference between the product and the cost of intermediates;*
- *sales tax; this tax is imposed on each market transactions;*
- *fiscal monopoly taxes (excise taxes); these taxes are imposed on specific types of goods that bring usually negative externalities in the economy. In the Czech Republic there are a tax on tobacco and tobacco products, on wine, beer, spirits and alcohol and hydrocarbon fuels and oils;*
- *tarriffs that can be classified as tax revenues;*
- *social security payments, the state employment policy, health insurance and others.*

Expenditure side of the state budget consists of state purchases of goods and services (G) and transfers (TR).

State purchases of goods and services (G) are spent to finance current expenditure and investment in defense and security, education, health, justice etc.

Transfers, respectively transfer payments (TR), represent unilateral payments from the state budget going to households, e.g. retirement pensions, disability pensions or unemployment benefits. Transfers are used for redistribution of income in society. Resources represent tax revenues. The difference between taxes and transfer payments is referred to net taxes (NT) and it is the instrument of fiscal policy.

If the state budget revenues equal expenditures, the state budget is balanced. It is a desirable goal. If state expenditures exceed state revenues, a deficit occurs. And if expenditures exceed revenues, a surplus occurs. If a economy is experiencing repeated formation of the state budget deficit, its national debt is growing.

11.2 Goals and instruments of fiscal policy

Fiscal policy measures can be classified according to whether tools operate automatically or whether they represent decisions.

- **discretionary measures** (intentional) are based on a single decisions of fiscal policy. For example, the approval of the structure of state revenues and expenditures for a current year, the decision about changing the structure of expenditures (a crisis package), changing the taxes etc.;
- **automatic (built) stabilizers** operate automatically. As their name suggests, they will stabilize the economy – they will lessen cyclical fluctuations. By dampen aggregate demand in times of prosperity and promote it during the downturn, they have anti-cyclical effect. They include progressive income taxation, unemployment benefit, welfare benefits, and government purchases

of agricultural production – purchases of agricultural surpluses, subsidies and agricultural prices regulation.

Tools of fiscal policy can be found on the revenue and expenditure side of the state budget - see diagram below.

discretionary measures vs. automatic stabilizers

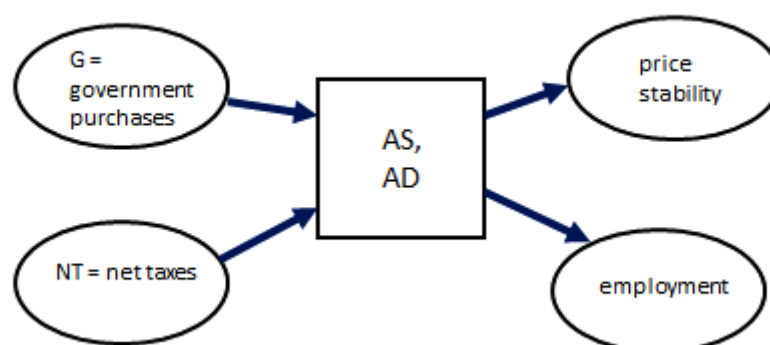
There are two basic instruments of fiscal policy:

- government purchases (G)
- net taxes (NT)

Expansionary fiscal policy:	Restrictive fiscal policy:
$\uparrow G$ $\downarrow NT$	$\downarrow G$ $\uparrow NT$

The government uses these tools to fulfill the objectives of fiscal policy. Fiscal policy sets its goals on the basis of these objectives appropriate tools are selected. These tools will bring changes on the side of aggregate supply and aggregate demand and the results are altered level of average price level and the real product, as in Figure 1.11.

Fig. 11.1 The transmission mechanism of instruments of fiscal policy in action



11.3 The consequences of the use of the instruments of fiscal policy

First, we will analyze the effects of using various instruments of fiscal policy on aggregate demand and aggregate supply.

a) The increase in G – the increase in government purchases of goods and services

Recall what constitutes aggregate demand: $AD = C + I + G + NX$. As you can see, government purchases (G) are part of aggregate demand (AD). Increasing G will result in an increase in AD (AD curve shifts upwards to the right). In Chapter 4 we discussed the multiplier effect and we know that the increase in government spending will be multiplied and the product is increased several times.

b) The decrease in G – the reduction in government purchases of goods and services

A reduction in government purchases and services will result in a reduction in aggregate demand (AD curve moves to the left down) and multiplication will act in a negative direction.

c) The increase in NT – the increase in net taxes

NT variable is composed of two components: taxes and transfer payments. Increasing tax burden will reduce disposable income, consumption or investment and aggregate demand, firms tend to reduce their activity, or they will seek tax havens, and will create downward pressure on aggregate supply. Increases in indirect taxes are reflected in the growth in costs for companies and reducing real disposable income of households. The effects will be in the form of reduction in aggregate supply and demand. Decrease in transfer payments will reduce the size of household disposable income and exert pressure to reduce consumption and then aggregate demand.

d) The decrease in NT – the reduction in net taxes

The decrease in the tax burden results in growth of disposable income and corporate profits. This tool will act both on aggregate demand, and aggregate supply. Households are more likely to spend money for the purchase of goods and services. Firms incur additional funds that may invest. Reducing taxes stimulate the activity of companies and causes the rise in aggregate supply, but not directly in consumption, but with a time lag (firms need some time to adjust production under new conditions). Reduction of indirect taxes is connected with decrease in costs and increases in real household incomes and its effects are increasing aggregate supply and demand. Reducing NT in the form of transfer payments increasing results in an increase in household disposable income, consumption and consequently aggregate demand.

Recall now the neokeynesian multiplier model in the 3-sectoral economy. We can compare government spending multiplier and multiplier of autonomous taxes. Consider the growth of government spending and a decline in autonomous taxes. After the appropriate calculations we can conclude that government spending has higher efficiency because taxes are autonomous component of disposable income and disposable income is multiplied by the the mpc . When reducing the autonomous

tax some funds escape in the form of savings. It is true that autonomous tax multiplier (TA) has a negative sign, as the decline TA (negative change) causes Y growth (GDP) growth and vice versa.

The multiplier effect of government spending and autonomous taxes - comparison (Neoknesianism)

a) **multiplier of government spending (G)** in a 3-sectoral (closed), assuming $\Delta G > 0$, increase in G $\rightarrow$ increase in Y

$$\alpha_G = \frac{1}{1 - mpc(1 - t)} \quad \begin{array}{l} mpc = \text{marginal propensity to consume} \\ t = \text{marginal taxation rate} \end{array}$$

b) **multiplier of autonomous taxes (TA)** – not dependent on disposable income, in a 3-sectoral (closed) economy, assuming $\Delta TA < 0$, decrease in TA $\rightarrow$ rise in Y

$$\alpha_{TA} = \frac{- mpc}{1 - mpc(1 - t)} \quad \begin{array}{l} \alpha_G > \alpha_{TA} \\ \Delta Y = \alpha_G \cdot \Delta G \\ \Delta Y = \alpha_{TA} \cdot \Delta TA \end{array}$$

Our conclusions are valid only within the multiplier model based on the given assumptions. By using the AS/AD model our conclusions will be more accurate.

11.4 Expansive and restrictive fiscal policy in the AS/AD model

The AS/AD model helps us to take into account the consequences of expansive and restrictive fiscal policy measures.

Expansionary fiscal policy focuses on growth performance of the economy. This means fiscal policy focused on increasing government spending (G) or reducing net taxes (NT).

Restrictive fiscal policy focuses on the decline in economic performance, respectively in aggregate demand. It means a decrease in government spending (G) and an increase in net taxes (NT).

Real product and the aggregate price level are influenced. The effects of fiscal policy tools using will depend on:

- *what tools will be chosen;*
- *how the economy is using its available resources;*
- *how the tools work in the short and long run;*
- *whether changes in tax rates are permanent or temporary, and how they are perceived by firms.*

Fiscal expansion in the form of increased government purchases (G) increases aggregate demand. Effect on the performance and the price level depends on whether the economy is in the output gap (the actual power is lower than the potential) or at the level of potential product. Figure 11.2 demonstrates an expansionary fiscal policy in terms of increased government purchases (G) for the situation of unused resources when the actual performance Y_1 is below the potential output Y^* . Real output growth (movement of Y_1 to Y_2) is greater than aggregate price level growth (movement from P_1 to P_2). SRAS curve is elastic in the Keynesian field.

Fig. 11.2 Expansionary fiscal policy in the form of increase in the G in terms of unused resources

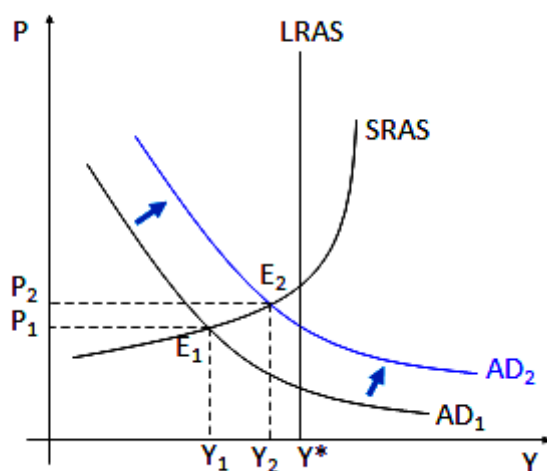
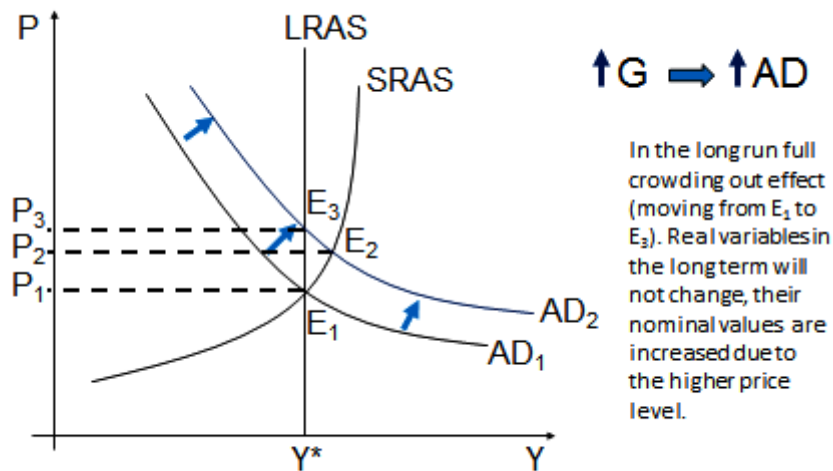


Figure 11.3 shows an expansionary fiscal policy in terms of fully used resources. The economy is at the level of potential output Y^* . Fiscal expansion in terms of increased G increases aggregate demand and new equilibrium economy constitutes at the point E_2 . But it is a short-run equilibrium, because the economy can not exceed the potential output in the long run. After some time, there is growth in wages and prices and the output will return to the level of potential output. Point E_3 is the point of a long-term equilibrium of the economy. In the short term there is growth in real output level Y_2 , but at the expense of higher growth in the price level, and in the long term, we can only observe the increase in the general price level.

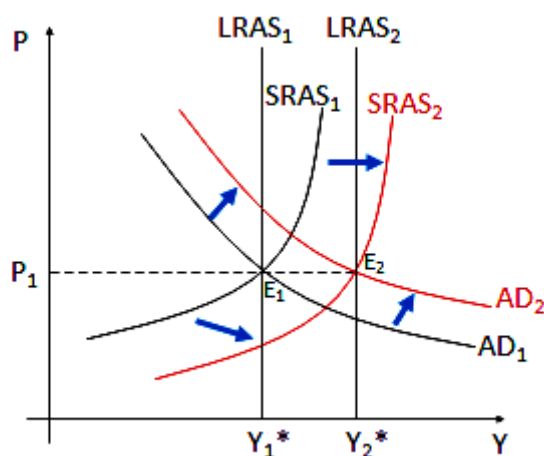
Moving from point E_2 to point E_3 manifests **crowding out effect** when increasing government spending reduces the level of private investment. The growth of aggregate demand caused output growth, but interest rate rose (due to growing demand for money and due to the formation of deficits, when the government borrowed funds). Rising interest rates reduce investment. We talk about the crowding out of private investment spending, respectively spending dependent on the interest rate. In point E_3 nominal product increased, but the real output is on the same level. Real and nominal interest rate increased. Nominal wages increased, but real wages are on the same level.

Fig. 11.3 Expansionary fiscal policy in terms of increased G at full utilization of resources



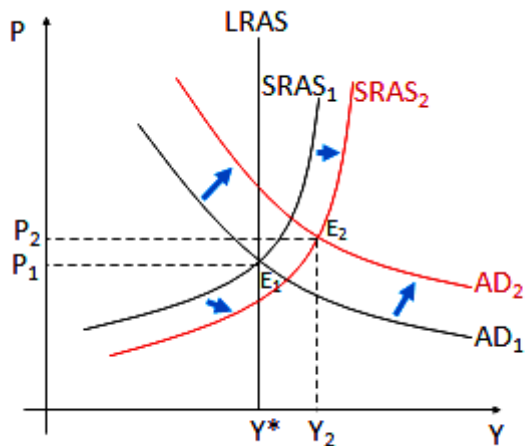
Fiscal expansion in the form of a reduction in net taxes (tax reduction) affects aggregate demand and aggregate supply. Both curves shift to the right, and that causes increase in real output (Y), but in the context of hypothetical reasoning, we do not know in advance, in what proportion SRAS and AD curves will move, therefore, cannot recognize clearly the impact on the aggregate price level (P). The price level may decrease, increase or remain unchanged. Potential output of the economy may increase as a decrease in taxes will attract additional units of labor and capital. Then there is a shift of SRAS and LRAS to the right. Long-term aggregate supply LRAS moves when varying the production function of the economy that depends on the amount of resources, their quality and level of technological progress. The successful tax reform results in stable aggregate price level (or only minimally improved), as can be seen in Figure 11.4.

Fig. 11.4 Expansionary fiscal policy in the form of a decrease in NT - successful tax reform



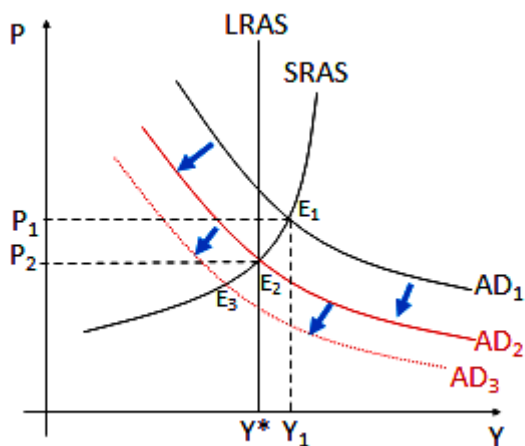
Expansionary fiscal policy can result in increase in aggregate supply that is lagging behind the growth of aggregate demand. Then, rising real product is accompanied by a rise in the general price level, as illustrated in Figure 5.11.

Fig. 11.5 Expansionary fiscal policy in the form of a reduction in NT with the result of increasing product and rising price level



Restrictive fiscal policy in the form of a reduction in government spending (G) focuses on the decline in aggregate demand. It is usually done when there is inflationary pressure due (the economy is in inflationary gap). Suppose that the economy is in equilibrium point E_1 as in Figure 11.6. The fiscal policy chooses reducing state purchases and services (G) that are part of aggregate demand (AD). The new macroeconomic equilibrium is at point E_2 (long-term perspective) and this point determines a lower output at the level of potential product and lower price level of P_2 .

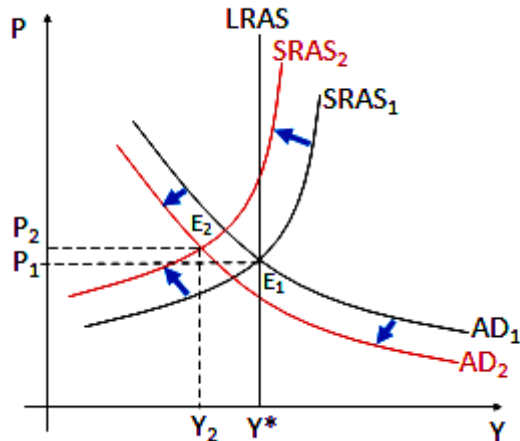
Fig. 11.6 Contractionary fiscal policy in the form of a reduction in G and oriented anti-inflationary



If government spending fell by a higher amount adequate AD_3 , we must distinguish the effect of fiscal restriction in the short and long run. In the short run restrictive fiscal policy will cause decrease in output and price level, intersection of AD_3 and SRAS, that is macroeconomic equilibrium at the point E_3 . In the long run, after adaptation to the new pricing, the output returns to the level of potential output (intersection of AD_3 and LRAS) due to rising private expenditure (responding to the decline in interest rates - with a reduction of government borrowing). In this case we speak about „***pulling effect***“. Recall if interest rate decreases, willingness to invest rises, because interest rate is cost of investment.

Fiscal restrictive policy in the form of an increase in net taxes (tax increase) will lead to a decline in aggregate demand (AD) and shifting short run aggregate supply (SRAS) leftward. When the amount of available labor and capital is reduced, we can consider decline in long run aggregate supply (LRAS). It is obvious that the amount of product drops, but the effect on the change in price level is not clear. The price level can increase, decrease, or remain unchanged. Figure 11.7 shows the situation where the tax increase has spurred greater than the reduction in aggregate supply aggregate demand, which resulted in a rise in the price level (movement from P_1 to P_2). This change resulted in output gap.

Fig. 11.7 Contractionary fiscal policy in the form of an increase in net taxes (NT)



11.5 State budget deficit and public debt

State budget deficit arises when the state budget expenditures exceed state budget revenues. Based on the method of formation we distinguish between cyclical and structural deficit.

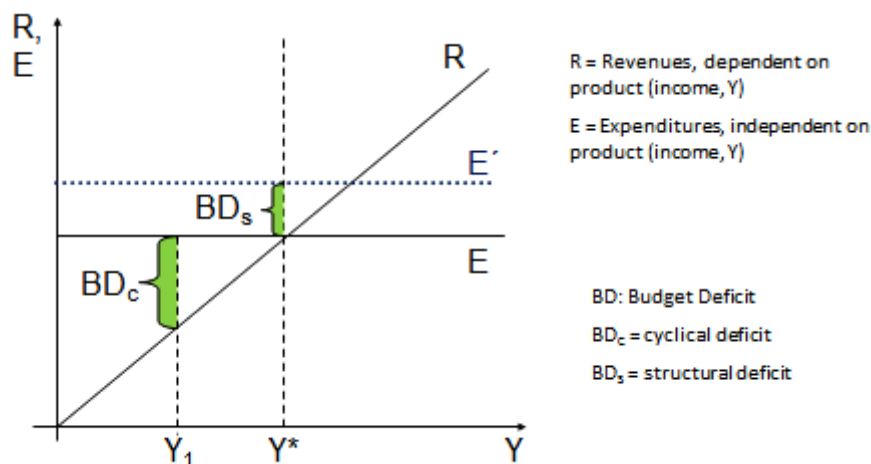
Cyclical deficit is the result of insufficient tax revenue to cover expenses during the contraction of the economy. Conversely, at the time of expansion can occur again to a surplus of income over expenditure, and in the longer term, the state budget deficit will disappear. This is referred to as passive because it is conditional on the

economic cycle. Automatic stabilizers are adjusted so that they offset the negative or positive state budget balance.

The structural deficit arises on the basis of discretionary government measures, referred to as active, and it represents the excess expenditures to revenues in a situation where the economy is on the level of potential output. By its accumulation the government debt is growing.

Cyclical and structural deficit are shown in Figure 8.11. Assume the government revenues consist of income tax, depending on the amount of national income (Y). Revenues are expressed by growing line whose directive is a tax rate (t). State budget expenditures are not dependent on the performance of the economy; therefore they are expressed as a horizontal line. The intersection of two lines represents balanced state budget. If we consider the level of expenditures E , only cyclical deficit or surplus occurs when altering output. Assuming E' expenditures, there is a structural deficit (the difference between E' and R when Y^*). Expenditures exceed revenues, when the economy is at the level of potential output Y^* .

Fig. 11.8 Structural and cyclical state budget deficit



If there is a state budget deficit, the government must seek funds to finance it. There are two known ways how to cover the deficit:

- Government can borrow funds at financial markets, thus increasing the demand for available resources, causing interest rates to rise, which in turn displaces private spending (consumption and investment);
- Government decides for debt monetization through a central bank (if it has the option) so a central bank emits extra money. The central bank buys government securities and issue new money into circulation. The effect, however, is the rise in aggregate price level (inflation).

Repeated creation of deficits (mainly structural) has a negative impact on the economy.

In the EU the Maastricht fiscal criteria were set in this way:

1. The criterion of a share of government deficit to GDP (at market prices) in % - it should not exceed 3 %.
2. The criterion of a share of government debt to GDP (at market prices) in % - it should not exceed 60 %.

The aim of these criteria is to encourage EU member states to fulfill fiscal discipline, to enforce a country to seek a balanced state budget and government debt reduction, otherwise countries in the EU (and common currency) are in trouble and automatic stabilizers do not work to dampen economic cycles.

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