

Economic Analysis

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Fiscal Policy

Fiscal policy is defined as government policy that uses taxation and expenditure as a means to influence the aggregate demand in an economy. Fiscal policy can either be expansionary or contractionary in nature and can effectively be used by the government to counter economic fluctuations.

Automatic Stabilizers

Automatic stabilizers are smoothening agents of fiscal policy that offset economic fluctuations without any explicit government action. Transfers and taxes are two types of automatic stabilizers that reduce fluctuations in disposable income by boosting aggregate demand during recessions and reducing aggregate demand during expansions. Transfers are government outlays directed toward the improvement of social welfare. Some examples of transfers are unemployment benefits, food stamps, and so on. Taxes are fees levied by the government on the income of individuals, corporations, and goods and services, and are a part of government revenue. The three most widely used tax systems are progressive, proportional, and regressive tax systems. Under a progressive tax system, the tax rate increases with an increase in the income of an individual. Under a proportional tax system, the tax rate is uniform for all individuals irrespective of their income. The tax rates in a regressive tax system fall as income rises, and vice versa (Mankiw, 2012).

Automatic stabilizers mainly operate by influencing the aggregate demand (AD) in an economy. During inflation or periods of economic expansion, a rise in the income level in the economy leads to an increase in the overall tax liability of individuals, which leaves them with less disposable income and causes consumption expenditure to fall. Economic expansion reduces the number of people dependent on food stamps. It also reduces the government outlay on

unemployment benefits as employment opportunities expand during economic expansion. As AD is a function of both consumption expenditure and government expenditure, it decreases, and there is a slowdown in the rate of economic expansion.

During periods of contraction or recession in an economy, there is a decrease in the income level, but this decrease is accompanied by a fall in the tax liabilities of individuals. Consequently, disposable income and, therefore, consumption expenditure do not fall as much as GDP. With more people losing their jobs, the number of people eligible for government transfer programs like food stamps and unemployment benefits increases, which increases government expenditure. As unemployment payments flow to the unemployed during a recession, there is an increase in disposable income. This increases consumption and gives AD the required push to restore balance in the economy. Therefore, given their effect on AD, transfer payments and taxes are built-in mechanisms to offset economic fluctuations.

Of the three tax systems, the progressive tax system provides an economy with the highest degree of built-in stability. Compared to the proportionate and regressive tax systems, the rate of increase or decrease of tax with respect to income is the highest in a progressive tax system. Thus, a progressive tax system is the most efficient of the three systems at diluting a rise in AD during periods of economic expansion. Not only do the tax rates decline with income, but the tax liability also falls with a fall in income during economic slowdowns. On the other hand, in a regressive tax system, the tax rates decline during an economic expansion and increase during a recession. When a proportionate tax system is in place in an economy, the tax liabilities of individuals do not change despite a recession or an expansion. Thus, both regressive and proportionate tax systems would worsen the condition of an economy during economic fluctuations.

Changes in the rates of taxes and other components of AD, such as investment and consumption expenditure, lead to changes in GDP through the multiplier effect. The multiplier effect is a mechanism through which the effect of automatic stabilizers on AD propagates in an economy.

Multiplier Effect

A multiplier is the ratio of the change in GDP (Y) to the change in any of the components of GDP. For example, the simple spending multiplier indicates the proportion in which output changes when there is a change in spending. Let c denote the marginal propensity to consume, which is a measure of the change in consumption with respect to the change in income. Let k denote the simple spending multiplier. The formula for simple spending multiplier is given by $k = 1 / 1 - c$.

Let AD denote aggregate demand, I denote private investment that is assumed to be fixed, TR denote transfer payments by the government, YD denote the disposable income in the economy, G denote government expenditure, C denote consumption expenditure, and t denote the tax rate (Dornbusch, Fischer, & Startz, 2014).

$$\text{We know that in an economy, } AD = Y \quad (1)$$

$$\text{In a closed economy, } \therefore AD = C + I + G$$

$$\therefore Y = C + I + G \quad (2)$$

$$\therefore C = \bar{C} + cYD, \text{ where } \bar{C} \text{ is autonomous consumption.}$$

$$\text{And, } YD = Y - \text{Taxes} + \text{Transfers} \quad (3)$$

$$\therefore C = \bar{C} + c(Y - tY + TR) \quad (4)$$

Substituting Equation 4 in Equation 2, we get

$$Y = \bar{C} + cY + cTR - ctY + I + G$$

Comment [N1]: You did analyze the effect of automatic stabilizers on a country's economy and provides examples of how different types of taxes compare in relation to automatic stabilizers.

$$Y - cY + ctY = \bar{C} + cTR + I + G$$

$$Y[1 - c(1 - t)] = \bar{C} + cTR + I + G$$

$$\therefore Y = \frac{\bar{C} + cTR + I + G}{[1 - c(1 - t)]} \text{ or } \frac{A}{[1 - c(1 - t)]}, \text{ where } A = \bar{C} + cTR + I + G \quad (5)$$

$$\therefore \frac{\Delta Y}{\Delta A} = \frac{1}{[1 - c(1 - t)]} \quad (6)$$

where $\frac{1}{[1 - c(1 - t)]}$ is the multiplier in the presence of taxes.

During a recession, the government reduces the tax rates and increases expenditure on transfers (“The Multiplier Effect,” n.d.). As a result of the multiplier effect, for every one unit increase in G, and consequently in A, Y increases by $\frac{1}{[1 - c(1 - t)]}$ times G. Let us assume that $c = 0.60$ and $t = 0.50$. To boost the aggregate demand in the economy, the government reduces the tax rate so that $t = 0.25$.

Using $t = 0.50$ and $c = 0.60$ in Equation 6, we have

$$Y = \frac{A}{[1 - 0.60(1 - 0.50)]}$$

$$Y = \frac{A}{[1 - 0.60(0.50)]}$$

$$Y = \frac{A}{(0.70)} \quad (7)$$

$$Y = 1.43A$$

Now, when $t = 0.25$

$$Y = \frac{A}{[1 - 0.60(1 - 0.25)]}$$

$$Y = \frac{A}{[1 - 0.60(0.75)]}$$

$$Y = \frac{A}{(0.55)}$$

$$Y = 1.81A$$

Thus, because of the multiplier effect, a 0.25-unit reduction in taxes causes AD (since $Y = AD$) to rise by 0.38 units, following an increase in the disposable income in the economy.

In periods of unexpected economic expansion or during inflation, the government cuts down its expenditure and increases taxes. Suppose the government reduces its expenditure so that A reduces from $1A$ to $0.80A$. Using equation 7, we see that the value of AD is now $1.14A$, which is less than the previous value of $1.43A$. Thus, reducing government expenditure is an effective way to slow down unwanted economic expansion.

Now suppose the tax rate is increased from 0.50 to 0.75.

Using $t = 0.75$ and $c = 0.60$ in Equation 6, we have

$$Y = \frac{A}{[1 - 0.60(1 - 0.75)]}$$

$$Y = \frac{A}{[1 - 0.60(0.25)]}$$

$$Y = \frac{A}{(0.85)}$$

$Y = 1.17A$, which is lower than the previous figure of $1.43A$.

Thus, a small increase in the tax rate causes a proportionally large decrease in AD because of the multiplier effect and slows down the rate of economic expansion in the economy.

When an economy is open to trade, apart from factors like consumption expenditure and government expenditure, net exports is another important determinant of the GDP of the economy.

Net Exports and the Impact on Real GDP

Net exports (NX) is defined as the surplus of exports over the imports of a country. Just as an increase in consumption expenditure and government expenditure leads to an increase in the real GDP of a country, which is GDP adjusted for price changes or inflation, an increase in net exports also increases the real GDP. In an open economy,

$$\therefore AD = C + I + G + NX$$

$$\therefore Y = C + I + G + NX \quad (8)$$

A country has to employ and pay individuals to produce goods and services for export. When the country exports these goods and services, it receives payments in domestic currency. As a result, there is an increase in the employment and income levels of the country that translates into increased expenditure. Consequently, the real GDP of the country increases, assuming the price level does not increase.

Since an increase in net exports directly leads to an increase in real GDP, countries often try to boost their exports and reduce their imports. Understanding how variations in net exports influence GDP is important when a country faces an economic slowdown or recession. When a country increases the tariff on its imports, there is an increase in the net exports of the economy, which pushes up domestic production and the employment level. But since the imports of one country form a part of the exports of its trading partner, there is a chance of retaliation. Suppose the U.S. imposes tariffs on its imports from Japan. When higher tariffs lead to a reduction in the imports from Japan, the net exports of Japan decreases. As a result, it is likely that Japan will

Comment [N2]:

Analyzes the concept of the multiplier effect through an in- depth examination of how it relates to both economic recession and economic expansion. ...

impose a retaliatory tariff on its imports from the U.S., which would then cause the net exports of the U.S. to fall. Therefore, increasing tariffs to boost net exports may, in fact, reduce net exports. Economists argue that such protectionist policies worsened world trade during the Great Depression. The U.S. increased tariffs to boost its net exports, but several rounds of retaliation worsened the global economic situation, depressed world trade, and increased the recessionary tendency in the U.S. economy.

Conclusion

It is not solely discretionary fiscal policy that responds to external shocks. Taxes and transfers also need to be given equal attention in achieving economic stability. “Overall, we estimate that if the automatic stabilizers were scaled back in size by 0.6% of GDP, then U.S. output would be about 7% more volatile” (McKay & Reis, 2012). Likewise, the progressive tax system can help reduce the fluctuations in GDP and output and help economies counter the effects of business cycles.

An analysis of how automatic stabilizers attenuate the business cycle highlights the effectiveness of the multiplier process. The effectiveness of an automatic stabilizer is gauged not only by the amount of change in disposable income, but also by the magnitude of change in consumption expenditure that this change in disposable income causes.

Foreign spending on domestically produced goods and services increases production, creates jobs, and increases income in the domestic economy. Thus, an expansion in net exports increases aggregate demand and real GDP. However, using tariffs to boost exports is not healthy economic policy as the trading partners of the tariff-imposing country may react likewise by imposing trade restrictions on the country. Implementing such trade barriers is undesirable as it results in lower net exports and GDP for all nations.

Comment [N3]: Analyzes the effect of an increase in net exports on a country's GDP providing examples, such as the one provided in the exemplar.

References

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