Chapter 12 presents the technical analysis of both expansionary/contractionary fiscal/monetary policy or their policy mix in the framework of Keynesian Theory. As you’ll see in Chapter 13, both Fiscal and Monetary Policies are used to target aggregate expenditure (called aggregate demand when price level is allowed to float) so as to change the equilibrium level of income. Remember, all the conclusions we reach here are based on STICK price assumption i.e. price level is resistant to change in the short run. In the long run when price level is flexible, we may have a different story by incorporating the supply side of the economy into our model.

1. The comparison between Fiscal Policy and Monetary Policy

<table>
<thead>
<tr>
<th></th>
<th>Fiscal Policy</th>
<th>Monetary Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Principle</strong></td>
<td>Manipulating the level of aggregate demand in the economy to achieve economic objectives of price stability, full employment, and economic growth.</td>
<td>Manipulating the supply of money to influence outcomes like economic growth, inflation, exchange rates with other currencies and unemployment.</td>
</tr>
<tr>
<td><strong>Definition</strong></td>
<td>The use of government expenditure and tax collection to influence the economy</td>
<td>The process by which the monetary authority of a country controls the supply of money, often targeting a rate of interest to attain a set of objectives oriented towards the growth and stability of the economy.</td>
</tr>
<tr>
<td><strong>Tools</strong></td>
<td>Taxes; amount of government spending</td>
<td>reserve requirements; Discount rate; OMO; QE</td>
</tr>
<tr>
<td><strong>Maker</strong></td>
<td>Government (e.g. U.S. Congress, Treasury Dept.)</td>
<td>Central Bank (e.g. U.S. Federal Reserve)</td>
</tr>
</tbody>
</table>
2. Expansionary Fiscal Policy

Primary Effect
The increases in government purchases \((G \uparrow)\) are used to buy everything from aircraft carriers to paper clips, from office furniture to highway construction, from traffic lights to teacher salaries. The actual purchases are typically undertaken by individual government agencies. Highway construction, for example, is undertaken with funds appropriated to the Department of Transportation while aircraft carriers are financed with funds appropriated to the Department of Defense. These agencies’ purchases stimulate aggregate production and increase incomes through spending multiplier which eventually raises the level of employment.

In addition, reduction in taxes \((T \downarrow)\) provides the household sector with additional disposable income that can be used for consumption expenditures, which then stimulates total spending, employment and leads to further increases in income.

The third tool is increasing transfer payments \((T \downarrow)\). Transfer payments are payments made by the government sector to the household sector. The three common transfer payments are Social Security benefits to the elderly and disabled, unemployment compensation to the unemployed, and welfare to the poor. An increase in transfer payments provides the household sector with additional disposable income, a fraction of which can be used to do consumption spending thus leading to a chain of income increases through Tax Multiplier.

Secondary Effect
Expansionary Effect can have on credit market conditions. When the government pursues an expansionary fiscal policy, it finances its deficit spending by borrowing funds from the nation’s credit market. Assuming that the money supply remains constant, the government’s borrowing of funds in the credit market tends to reduce the amount of funds available (this can be seen as increasing monetary demand) and thereby drives up interest rates. Higher interest rates, in turn, tend to reduce or “crowd out aggregate investment expenditures and consumer expenditures that are sensitive to interest rates. Hence, the effectiveness of expansionary fiscal policy in stimulating aggregate demand will be mitigated to some degree by this crowding-out effect.

Primary and Secondary Effects can be summarized as following charts:

![Figure 1: The mechanism of Expansionary Fiscal Policy](image)

3. Expansionary Monetary Policy

Primary Effect
Expansionary Monetary Policy is used to target recession in an economy. We have introduced the impact increasing money supply has on the capital market in Chapter 10 and 11. The claim is that an increase in the Money Supply will improve the liquidity in the market thus lowering the interest rate (the borrowing cost) and boosting the investment as a part of aggregate expenditure. So, increased aggregate expenditure will lead to higher level of aggregate income in the short run if the actual output is lower than the full employment level. Here the money market is connected to the goods market by the capital market. You may ask why there is only the demand side i.e. the investment curve on the capital market and where is the supply side i.e. the savings? In our analysis, we implicitly assume that the savings curve is perfectly elastic on the capital market or in other words, the equilibrium level of capital is determined by the investment (demand for capital).

Secondary Effect
An increased output led by expansionary monetary policy would create a tension on the liquidity on the market thus raising the interest rate. The rise in the interest rate would discourage investment on the capital market which will cause a fall in AE and YY. Therefore, this is going to offset part of the primary effect. On the diagram, assuming the magnitude of secondary
effect is less than that of primary effect, we would see the increase in the level of income would not be as much as if there was no secondary effect. Both effects can be summarized as follows:

Figure 2: The mechanism of Expansionary Monetary Policy

Effects of an expansionary monetary policy:

\[ M^s \uparrow \rightarrow r \downarrow \rightarrow I \uparrow \rightarrow Y \uparrow \rightarrow M^d \uparrow \rightarrow r \text{ decreases less than if } M^d \text{ did not increase} \]

4. Contractionary Fiscal Policy

Primary Effect
Contractionary fiscal policy includes a decrease in government purchases, an increase in taxes, and/or a decrease in transfer payments which are used to correct the inflationary problems of a business-cycle expansion. The goal of contractionary fiscal policy is to close an inflationary gap, restrain the economy, and decrease the inflation rate. The contractionary fiscal policy can be understood as the reverse process of the expansionary fiscal policy, for example, a decrease in the government purchase \((G \downarrow)\) means there are less funds appropriated to governmental agencies. The cutback of their purchases will decrease total spending and thus the rate of inflation. The increase in taxes or decrease in transfer payments will have similar effects on the goods and services market.

Secondary Effect
Contractionary fiscal policies is designed to combat expected inflation. However, if the government reduces its expenditures and thereby reduces its borrowing, the supply of available funds in the credit market increases, causing the interest rate to fall. Aggregate expenditure increases as the private sector increases its investment and interest-sensitive consumption expenditures. Hence, contractionary fiscal policy leads to a “crowding-in” effect on the part of the private sector. This crowding-in effect mitigates the effectiveness of the contractionary fiscal policy in counteracting rising aggregate expenditure and inflationary pressures.

The Primary and Second Effects can be summarized as following chart:

Figure 3: The mechanism of Contractionary Fiscal Policy

Effects of a contractionary fiscal policy:

\[ G \downarrow \text{ or } T \uparrow \rightarrow Y \downarrow \rightarrow M^d \downarrow \rightarrow r \downarrow \rightarrow I \uparrow \rightarrow Y \text{ decreases less than if } r \text{ did not decrease} \]

Contractionary Monetary policy
Similarly, contractionary Monetary policy can be interpreted as the reverse process of expansionary monetary policy. Less money in circulation causes a lack of liquidity on the market thus increasing the interest rate the firms have to repay for borrowing money from households. Given higher borrowing cost, the businesses would face more stress to reduce investment spending and lay off their workers thus lowering the total incomes of the economy. Such a decrease in aggregate income would also have secondary round of effect counteracting the primary effect by easing the pressure on liquidity previously created by less money supply. The direct primary effect and the secondary effect from the feedback of goods and services market can be summarized as follows:

5. Fiscal and Monetary Policy Mix
So what if both fiscal and monetary policies are implemented at the same time? For example, we mentioned “Monetizing the Debt” last week where the Fed increased its money supply \((M_S \uparrow)\) to finance the new government debt through which the government can increase its purchase \((G \uparrow)\). Clearly, this can be thought of as a combi-
nation of expansionary monetary and fiscal policy, and actually there are four different types of combinations. The potential outcomes these combination may bring about are summarized as follows:

Figure 5: The Fiscal/Monetary Policy Mix

**Fiscal Policy**

<table>
<thead>
<tr>
<th>Expansionary</th>
<th>Expansionary</th>
<th>Contractionary</th>
</tr>
</thead>
<tbody>
<tr>
<td>(↑ G or ↓ T)</td>
<td>(↑ G or ↓ T)</td>
<td>(↑ G or ↓ T)</td>
</tr>
<tr>
<td>Y ↑, r↑, I↑, C↑</td>
<td>Y ↑, r↑, I↑, C↑</td>
<td>Y ↑, r↑, I↑, C↑</td>
</tr>
</tbody>
</table>

**Monetary Policy**

<table>
<thead>
<tr>
<th>Contractionary</th>
<th>Contractionary</th>
</tr>
</thead>
<tbody>
<tr>
<td>(↓ M^s)</td>
<td>(↓ M^s)</td>
</tr>
<tr>
<td>Y ↑, r↑, I↑, C↑</td>
<td>Y ↑, r↑, I↑, C↑</td>
</tr>
</tbody>
</table>

Key:

↑: Variable increases.
↓: Variable decreases.
?: Forces push the variable in different directions. Without additional information, we cannot specify which way the variable moves.