

# The Digital Economist

## Lecture 9 -- Economic Policy

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*With lectures 1-8 behind us, we now have the tools to support the discussion and implementation of economic policy.*

*There is still great debate about the degree to which a government or policy makers should intervene in the affairs of a market economy. At one extreme are those who believe that the market when left alone will generate stable economic growth, rising living standards, low levels of unemployment and inflation, and continue to use resources in the most efficient manner possible. The other extreme is characterized by those who believe in rigorous planning, policy implementation, and in some cases, national ownership of key industries.*

This debate is the thesis of The Commanding Heights: [www.pbs.org/commandingheights](http://www.pbs.org/commandingheights)

This lecture will take more of a middle road; identifying situations where policy might be desirable or where the lack of policy actions will cause aggregate harm. We will discuss situations where one type of policy might be desirable as compared to others and situations where certain types of policy is just not practical.

Macroeconomic policy can be divided into two broad categories:

- **Demand-side** policies designed to affect *the ability to spend* and
- **Supply-side** policies designed to affect *the ability to produce*.

Further, Demand-side policies can be broken down into:

- **Fiscal Policy** (changes in Government Spending or Taxes collected) and
- **Monetary Policy** (changes to the money supply engineered by the Central Bank)

Expansionary policies will be defined as those designed to stimulate economic growth via changes in Real GDP, the potential output of the economy or both. On the demand-side these policies would be implemented through one of the four expenditure categories that make up GDP. On the supply-side, policies would be designed to add to the productive capacity of the economy through: labor policies (education, immigration, retirement), capital accumulation, research and development (seeking technological improvements), or promoting a greater availability of resources.

For example, a tax cut (*an expansionary Fiscal policy*) is designed to increase disposable income thus leading to greater **consumption expenditure**. In addition, this tax cut may make certain investment project more profitable thus leading to more **investment expenditure**. Changes in government spending are designed to affect the **government**

**expenditure** category directly. A fiscal expansion might be designed in this case to offset a decline in one of the other expenditure categories.

Monetary policy is designed to affect **investment expenditure** through lower interest rates that accompany increases in the money supply and perhaps **net export expenditure**. In this latter case, we might observe that a monetary expansion could lead to more dollars being available on Foreign Exchange markets. This surplus of dollars will weaken the exchange rate between dollars and other trading currencies. In addition the lower interest rates will make the U.S. a less attractive place to invest relative to yields that are available in other countries. Thus, with lower interest rates, there will be an outflow of capital resulting in the sale of domestic assets and then dollars on Exchange markets. Again, we end up with a weaker dollar. This weaker dollar makes U.S. exports relatively cheaper to foreign buyers and thus stimulates the demand for U.S. produced goods. Also, the weaker dollar makes foreign goods more expensive to domestic buyers reducing the demand for imported goods. The net result is an increase in net Export expenditure.

Demand-side policies may be expansionary or contractionary in nature. Expansionary policies are designed to stimulate spending in a recessionary economy; contractionary policies designed to reduce spending in an inflationary economy. However, supply-side policies should always be expansionary--the goal to increase the productive capacity of the economy allowing for increases in living standards.

It is important to note that expansionary policy and contractionary policy are not symmetric in their implementation. Fiscal expansions tend to be politically popular (i.e., more spending and/or less taxes) and thus easy to legislate. However, in times of budget deficits, these fiscal expansions make existing deficits worse and add to the national debt -- debt that at some ratio to GDP may not be sustainable. Contractionary policies (spending cuts or higher taxes) tend to be politically unpopular and less likely to be used even if dictated by economic conditions. Thus in times of large budget deficits, Fiscal policy tends to be missing from the policy-maker's tool box.

There is also an asymmetry to the implementation of monetary policy. Monetary expansions are often less effective and less predictable as compared to monetary contractions. For example, suppose that the Federal Reserve is concerned about weak economic growth or relatively high rates of unemployment. The policy reaction would be to increase bank reserves (excess reserves) through open market purchases (see lecture 7 – the Money Supply). Banks would then be expected to convert these excess reserves into loans with their customers – an availability of loans signaled via lower borrowing rates. However, if bankers are somewhat pessimistic about their future reserve position (expecting higher than usual withdrawal activity or fewer new deposits), they might just sit on these reserves with no change in lending rates. Even if bankers want to convert these reserves into loans, potential customers may not have the incentive to borrow at any rate. A sluggish economy could be matched with sluggish demand for goods and services thus eliminating the incentive for investment in inventories or productive capacity. A

common saying in this case is that “*you can’t push a rope*” meaning that it is difficult to push interest rates down and push borrowing up.

In contrast, contractionary monetary policy is always effective. Open market operations that remove reserves from the banking system (an open market selling of securities), will require that these banks curtail lending activity and allowing competition for fewer available loans to push interest rates upward. Higher interest rates will always make certain investment projects unprofitable thus leading to the abandonment of these projects. In this case we find that the Fed “*can pull a rope*” – pull reserves out of the banking system and pull interest rates up.

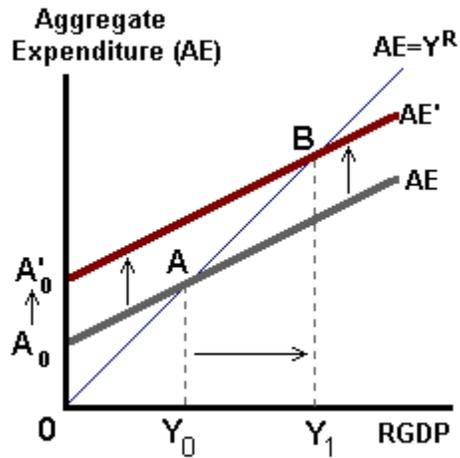
## FISCAL POLICY

Our discussion of Fiscal policies will only include expansionary policies. As stated above, contractionary policies tend to be politically unpalatable and thus seldom used. Expansionary policies, therefore, include increased government expenditure, lower taxes (tax rates) or both. Typically such policies would be used in cases where the economy is operating well below its potential. In such cases there are excess resources available for production and thus little pressure on the price level.

The use of expansionary fiscal policy was first articulated by John Maynard Keynes in his General Theory of Employment, Interest, and Output (1936). This work, written in reaction to the events of the Great Depression, suggested that governments could stimulate effective demand for goods, where that demand was lacking in the private sector. He stated that the government could take bank-notes, put them in bottles and bury the bottles around the country. Individuals would go to some effort to dig up these bottles, acquire the bank-notes and spend some if not all of this newly-discovered purchasing power. To be more practical in his suggestion, Keynes, stated that governments could in a similar fashion, stimulate demand by undertaking necessary public projects (administrative buildings, roads, dams, and other infrastructure) thus putting the unemployed to work in gainful industry. These workers earning a legitimate income would then begin to spend on goods and services – spending that would lead to inventory depletions and thus create additional employment in the production and replenishment of these inventories. Through this multiplier process (see lecture 6), demand and thus Real GDP would increase closer to the potential of the economy. This event is shown graphically below:

$$\Delta_{[+]}G = \Delta_{[+]}A_o \rightarrow \Delta_{[+]}Y^R = \alpha\Delta_{[+]}A_o$$

**Figure 1, An Increase in Government Spending**

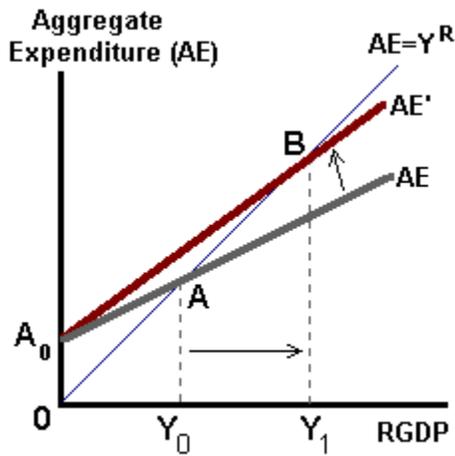


A reduction in taxes will have a similar effect on RGDP except, in this case, the change will occur through the multiplier ' $\alpha$ '. Given  $\alpha = 1 / [1 - mpc(1 - t)]$ :

$t \downarrow$ ,  $(1 - t) \uparrow$ , therefore  $mpc(1 - t) \uparrow$ , *the expenditure line becomes steeper*,  
and

$[1 - mpc(1 - t)] \downarrow$ ,  $\alpha \uparrow$ .

**Figure 2, a reduction in the Tax rate**



## MONETARY POLICY

Expansionary Monetary policy may be used for the same reasons as expansionary fiscal policy – weak aggregate demand and an economy operating below its potential. The Federal Reserve will only be comfortable using this type of policy if there is little chance that inflation will not become a future problem because of these policies (i.e.,  $\pi \rightarrow 0$ ).

*Notes:*

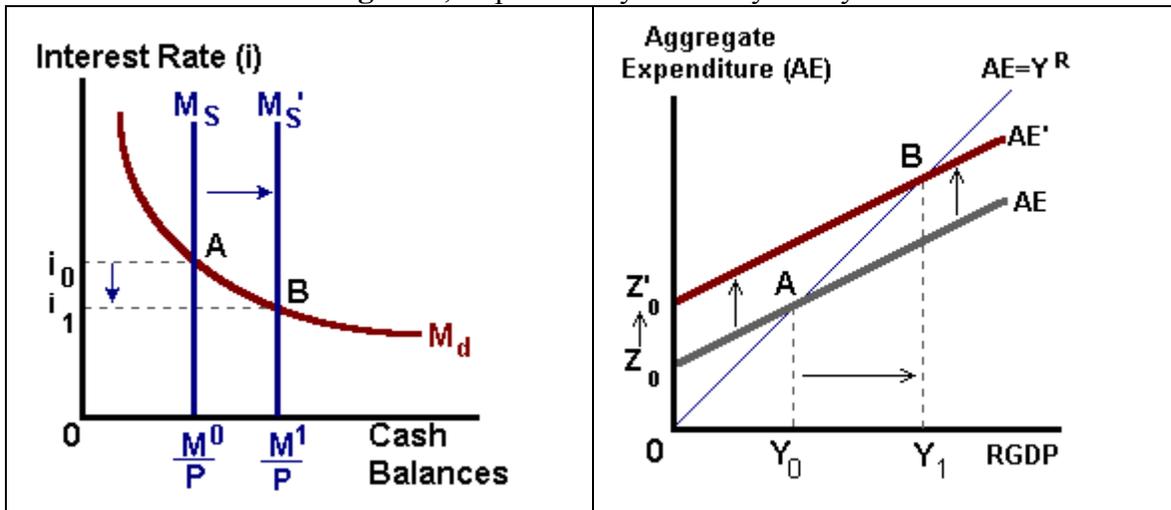
- (1) Since inflationary pressure does not exist, as nominal interest rates change real interest rates will change in the same direction:  $i \downarrow \Rightarrow r \downarrow$  given  $r = i - \pi$ .
- (2) The equilibrium condition for aggregate expenditure is now written with an added parameter ‘h’ the interest sensitivity of investment:  $Y_e = \alpha[A_0 - h(r)]$

In this instance, the Fed will use **open market operations to purchase** Government securities from Treasury dealers paying for those securities with newly created reserves. In the purchase of these securities, the Federal Reserve N.Y. trading desk will put upward pressure on these bond prices thus driving their yield downward ( $\Psi \downarrow$ ). The reserves finding their way into the banking system as excess reserves will be converted by bankers into new loans – loans available to borrowing customers at lower interest rates. In the diagram below left this increase in reserves is shown as an outward shift in the money supply line. As interest rates fall, the opportunity cost of holding cash balances also falls. The public will be willing to hold larger cash balances in the form of new deposits. In the diagram on the right we find that as interest rates fall, borrowing to support investment expenditure increases thus shifting the AE line upwards. This is similar to an autonomous shock [note: in the diagram below-right,  $Z_0 = A_0 - h(r)$ ]:

Reserves  $\uparrow$ , *Excess Supply of Money*,  $i \downarrow$ ,  $M_d \uparrow$ ,

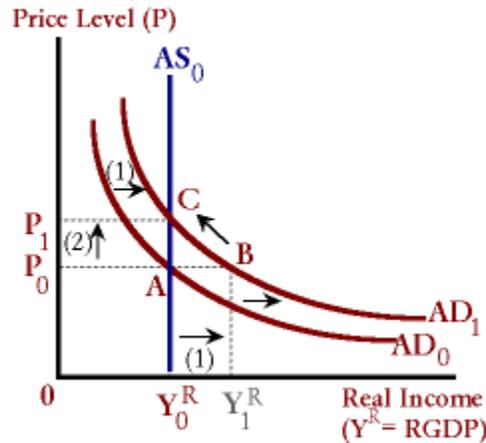
as  $i \downarrow$ ;  $r \downarrow$ ,  $[A_0 - h(r)] \uparrow \Rightarrow I \uparrow$ , and  $\Delta_{[+]}Y = \alpha[A_0 - h(\Delta_{[-]}r)]$ .

**Figure 3, Expansionary Monetary Policy**



In the case of contractionary monetary policy, the Federal Reserve is reacting to inflationary pressure in the economy due to an increase in aggregate demand (more purchasing power) or a reduction in potential output perhaps due to an adverse productivity shock or an increase in factor prices. In both cases, the economy's *ability to spend* exceeds its *ability to produce* leading to upward pressure on output prices.

**Figure 4**, An Increase in Aggregate Demand  
(putting upward pressure on Prices)



The Fed will combat this increase in demand-side spending by pushing interest rates upward and increasing the costs of borrowing to support investment spending.

Contractionary Monetary policy would therefore require changes opposite to those described above:

Reserves ↓, *Excess Demand for Money*,  $i \uparrow$ ,  $M_d \downarrow$ ,

as  $i \uparrow$ ;  $r \uparrow$ ,  $[A_0 - h(r)] \downarrow \Rightarrow I \downarrow$ , and  $\Delta_{[-]}Y = \alpha[A_0 - h(\Delta_{[+]}r)]$ .

The **open market sale** of government securities would create a surplus of these securities in secondary bond markets thus driving their price down and yield up ( $\Psi \uparrow$ ).

In reality the directive to the N.Y. trading desk from the Federal Open Market Committee will be to buy and sell securities until a particular interest rate (Federal Funds) target has been met. Because of day to day changes in the money multiplier, withdrawal and deposit activity, and other forces; the actual Federal Funds rate will hover around this target. However, if the goal of the Fed is to increase this short-term rate, other interest rates (i.e., the Prime Lending Rate) are likely to follow with the consequent effect on Investment expenditure decisions and ultimately Real GDP.

## SUPPLY-SIDE POLICIES

Supply-side are designed to work through the aggregate production function by affecting the availability of factor inputs or their productivity:

$$X^* = f(L, K, M).$$

These policies can be categorized via each of the three factors of production listed in the above function.

### **Labor Policies**

Policy makers have attempted to increase the potential output of an economy via the labor-input component. These policies represent an attempt to increase labor supply via relaxed immigration policies, population (encouraging greater birth rates) policies, or increasing labor force participation rates. Policies can also attempt to increase the productivity of labor (an increase in Human Capital) through improved access to education and policies designed to make educational activities more effective.

### **Capital Accumulation**

The capital stock of a nation, so important for rising living standards, can also be affected by different policies. Governments are often involved in the direct creation of necessary infrastructure that complements and enhances the movement of goods and services as well as reducing the transaction costs associated with market activities. This infrastructure may include new roads (i.e., the U.S. Interstate system), bridges and dams, airports, and improvements to waterway shipping. In addition this infrastructure may include legal systems, courts and police to help make market transactions more efficient.

Policy makers can also encourage capital accumulation through the private sector through grants and subsidies for research, development, and capital creation. Tax laws can also favor capital by lowering the real cost of borrowing thus encouraging investment spending -- spending on new capital and the replacement of existing capital.

### **Availability of Raw Materials**

Policies may also be developed to improve access to and the general availability of raw materials. These types of policies would include different land-use/land-management policies allowing for resource extraction, logging, oil exploration, and urbanization. Often these types of policies run counter to efforts at environmental protection leading to strong debate in the political arena.

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*Be sure that you understand the following:*

- Aggregate Demand
  - Aggregate Supply
  - Aggregate Expenditure
  - Potential Output
  - Purchasing Power
  - Inflation
  - Recession
  - Fiscal Policy
  - Monetary Policy
  - Expansionary Policies
  - Contractionary Policies
  - Open Market Operations
  - Nominal Interest Rates
  - Real Interest Rates
  - Spending Multiplier
  - Money Multiplier
  - Labor Force Participation Rate
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