Economic Environment and Business Strategy
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Policy Lags and Macroeconomic Stability

Hello, everyone. Welcome back. In our previous session, we explored the causes and unfolding of the global financial crisis, including the housing bubble, the banking meltdown, and the role of financial innovations such as subprime mortgages, bank securities, and collateralized debt obligations. We also examined how these shocks destabilized economies worldwide. Today, we turn to a crucial question. How do policymakers respond to such crises? Specifically, we will focus on the roles of fiscal and monetary policy.

In stabilizing the economy during such a shock or crisis, it might seem straightforward—very straightforward. When the economy contracts, you can expect a similar policy response. The government should increase spending and cut taxes, and the central bank should lower interest rates to boost liquidity in the banking system and the economy.

But in practice, it is not that simple. Policy actions take time, and these delays, known as policy lags, can weaken or even undermine their effectiveness. In this session, we will examine several types of lags associated with policy. One is information lag: the delay in recognizing that a problem exists. The second, implementation lag, is the time it takes to design and implement a policy.

And third, both inside and outside lags create delays in making decisions and in seeing their effects. The differences between fiscal and monetary policy lags will be discussed, as will the debate between rules-based and discretionary approaches. By the end of today's session, I hope you will understand why timely intervention so challenging and why even well-intentioned policies is can arrive too late or be too forceful. This will help us appreciate the challenges policymakers face when trying to fight a recession and a financial crisis. Let me begin with the first lag, commonly referred to as the information lag.

What we typically assume in macroeconomic theories is that policymakers can instantly identify problems in the economy and adjust policies accordingly to address them. But in the real world, there is an information lag: a delay between a change in the economy and the knowledge of that change. For example, are we currently in a recession? How do we

know that? At present, maybe this last month, are we in a recession? How do we know that? This is a very tricky question because it's very difficult to determine whether we are in a recession or not. In one of our previous sessions, we discussed several unconventional tools to determine whether the economy is experiencing a recession. For example, whether households are spending less, and we even discussed some garbage index, something like that, which we discussed.

The idea here is to determine whether we are currently experiencing a recession or not. In the U.S., the Business Cycle Dating Committee within the NBER is responsible for determining when a recession begins and when it ends. The issue here is that we mentioned a recession occurs when actual output is below potential output.

Then the issue arises: there is some uncertainty about potential output. So, the primary macroeconomic policy goal, as we discussed in several of our previous sessions, is to keep output, or GDP, as close to potential output as possible, so that the economy realizes its full potential and all factors of production are fully employed. Then the query arises: what is potential output? I mentioned in one of the previous sessions, especially when we were discussing the GDP concept, that you are already familiar with it. Potential output refers to the output we use to make a forecast, as it cannot be directly observed. Instead, we draw a trend line based on actual output.

At a given point in time, it is challenging to determine the potential output due to uncertainty surrounding it. So, the idea here is that if you are not clear about whether we have already reached the potential output, or whether the observed or actual output is equal to, above, or below it, then that part is not clear. For example, at that time, if the current output is above the potential output, and we are using an expansionary fiscal policy or an expansionary monetary policy, for example, expansionary fiscal policy means an increase in government spending and a decline in taxes. Similarly, expansionary monetary policy involves lowering the interest rate and injecting more money into the economy. Therefore, if you do this when the actual output exceeds potential, it will cause inflation because during that time, when the actual output exceeds potential output, the economy is in a boom stage.

Already at the boom, inflation is high, and at that time, if the central bank injects more money into the economy, it will lead to hyperinflation. Similarly, if the policymakers use a contractionary policy when the economy is below potential output, they create unnecessary unemployment. You know that when the actual output is below potential output, economic activities have been contracting. At that time, if they increase cuts, raise taxes, reduce government expenditure, and increase interest rates, it will all further accelerate the contraction of the economy and lead to unnecessary unemployment. So, the key point here is that, due to all these factors, the policy identifying the issue, the policy addressing the crisis, and the policy's implementation all become important.

Moving on to this topic and relating it to fiscal and monetary policy, let us now discuss the Policy Implementation Act. Suppose the economy is at full employment and is affected by a negative aggregate demand disturbance, meaning aggregate demand is less than aggregate supply. You know that this reduces the equilibrium level of income below full employment. For this to happen, there must be a deficiency of demand; that is, a demand-side shock. So, for us, there is no advance warning of such a disturbance. Therefore, no policy action can be taken in anticipation of its occurrence.

For example, the COVID-19 shock, the COVID-19 crisis at that time, was a crisis; it also led to an economic shock, but there was no warning, and policymakers were not aware that COVID-19 was coming. So, policymakers must then decide: do they respond to the disturbance or not? And if so, if they decide to respond, how should they do so? So, how should they respond: by fiscal policy, by monetary policy, or a mix of both? And even in monetary policy, what kind of intervention, what is the magnitude of the intervention, even in fiscal policy and monetary policy, what is the magnitude of the intervention that they must decide? This would lead to a policy implementation lag, a delay between the time policymakers recognizes the need for policy action and when the policies are implemented. So, there will be a lag. And policymaking, you know, is a process; it takes time to recognize and implement a policy action. Whether it is a monetary policy or a fiscal policy, it takes time to recognize.

The first step in recognizing the problem is determining whether a financial crisis exists, whether intervention is warranted, and whether the magnitude of the crisis justifies policy implementation. Then, subsequently, it takes time for an action to work its way through the economy. So, each step involves delays or lags. So, one is called "inside lag." Broadly, we can categorize this policy implementation lag into two lags.

One is called inside lags, and the other one is called outside lags. Let's discuss this one by one. Inside the lags, there are recognition lags, decision lags, and action lags. Let's go one by one. Moving to the first inside lag is referred to as the recognition lag.

Recognition lag is the period that elapses between the time a disturbance occurs, and the time policymakers recognize that action is required. Therefore, the recognition lag becomes negative if the disturbance is predicted, as policymakers are already aware that the disturbance is going to occur, and appropriate policy actions are considered before it happens. You know, especially during Christmas and Diwali, central banks tend to increase the money supply. In India, especially during Diwali, people believe that the RBI predicts an increase in aggregate demand, leading to a need for more money to buy goods and services. At that time, the central bank increases the money supply mainly through the banking system; as a result, the liquidity within the banking system increases, and people can obtain credit.

In the Western world, central banks typically increase the money supply during the Christmas and New Year's period. That means there is no lag. That means the disturbance, or increase in aggregate demand, will occur during this period. But the policymakers are responding well in advance.

That is a lag negative. However, in practice, the lag is typically positive, especially during a crisis, because most economic disturbances are unpredictable. As a result, policymakers typically learn about these disturbances only after they have affected the economy. Then comes the second type of lag, known as decision lag. Decision lag refers to the time between recognizing the need for action and implementing the policy decision. So, it differs; a policy decision means what kind of policy they need to implement.

It differs between monetary policy and fiscal policy. In the US, fiscal policy has a longer implementation lag because policy must be formulated to address the crisis. First, it must be formulated, then legislation must be passed by Congress and signed by the president, all of which takes time. So, as a result, you can see that there is a longer implementation lag. In contrast, monetary policy has a shorter implementation lag because the Federal Open Market Operations Committee decides on monetary policy and implements it immediately, as the FOMC meets regularly to discuss and decide on policy. What I am saying here is that, for fiscal policy, there is a longer implementation lag, whereas for monetary policy, there is a shorter implementation lag.

Let us now move to the third lag, which is called action lag, and falls under the category of inside lags. So, there is a lag between the policy decisions and their implementation. This action lag also differs between monetary policy and fiscal policy because monetary policymakers typically act immediately. As I mentioned, the FOMC meets regularly, and in India, the Monetary Policy Committee also acts promptly. However, when it comes to fiscal policy, their actions are less rapid. What we have discussed so far is all about the internal lag; now, let us move on to the external lag. Outside lag means the time it takes for a policy measure to work its way through the economy.

When a fiscal policy or a monetary policy is implemented, how long does it take to have an impact on the target key economic variables? So, inside lags are discrete, as we have already discussed, but outside lags are typically distributed. Once a policy action has been taken, its effects on the economy spread out over time. As you can see, immediate impacts may be small, but other effects occur later.

For one type of policy, you may see an immediate impact, but for others, a longer time may be required to make a lasting impact on the economy. We can also discuss this in relation to the interplay between fiscal policy and monetary policy.

How does the outside lag vary between fiscal policy and monetary policy? The monetary policy, as you know, works in a specific way; it primarily reduces the rate of interest. When the rate of interest is reduced, the cost of production for firms decreases because they can obtain credit more easily, and consumers can also obtain credit to purchase durable goods. As a result, it will initially impact investment by firms and demand for durable goods by consumers through changes in interest rates, but not through changes in income. So, when aggregate demand is ultimately affected, an increase in spending itself produces a series of induced adjustments in output spending. So, let me break it down line by line: suppose the central bank is implementing a monetary policy, which means it is following an expansionary monetary policy to combat the crisis. Then, how it works is that when the central bank reduces the rate of interest for the firms, they interpret it as the rate of interest having declined and the cost of borrowing money from the financial market having decreased.

And then they will be expanding their operation. They are investing more in the purchase of capital goods, such as machines, and expanding the size of the factory. And then you know that, to do that, they will be hiring more laborers, more raw materials, inputs, and all. You know that when they hire more laborers, employment opportunities increase. And then finally, when inputs are transformed into outputs, you can see that the output has increased.

In the entire process, you can see that there will be a lag. Then, regarding fiscal policy, for instance, consider an expansionary fiscal policy, such as an increase in government expenditure or a decline in tax rates. So, when government expenditure increases, as the government spends a significant amount of money in the economy, it directly affects aggregate demand. This is because when the government spends, there is an immediate increase in demand for goods and services within the economy. So, that means it is directly affecting aggregate demand, but monetary policy takes time. As I mentioned, due to the declining interest rate, firms are responding by expanding their operations, and the economy is responding accordingly.

That means it generates employment opportunities and increases people's income, which in turn raises their aggregate demand. Therefore, we can clearly distinguish between monetary policy and fiscal policy lags, especially for the monetary policy I have already mentioned. The inside lag we discussed is very short for monetary policy, as the Monetary Policy Committee, or FOMC, can decide within a short span of time. However, to have a significant impact on the economy, there are several lags. For example, Friedman and other monetarists highlight data showing that changes in the money supply will have a strong effect on income, but that there is a lag, with the bulk of the effect occurring only after 6 to 18 months. So, you see, you can observe the lag that is taking place.

That means it takes nearly 6 to 18 months for monetary policy to take effect. Thus, to offset a shock, we must be able to predict its size and when it will affect the economy several quarters in advance. Therefore, Friedman and the other monetarists do not believe we have sufficient knowledge to do this because there is a recognition lag in the economy, and it is challenging to predict whether an economy is falling into a recession. In contrast to this, fiscal policy, as I have already mentioned, directly affects aggregate demand, and has shorter outside lags than monetary policy. However, we have already seen that monetary policy has longer inside lags than fiscal policy. Therefore, long-term actions will render fiscal policy less effective for stabilization or less frequently used to stabilize the economy.

It takes time to set up and implement policies, and even then, the policies themselves take time to have an impact on the economy. Furthermore, policymakers face additional challenges because they cannot be certain about the size and timing of the effects of policy actions. The expectations and reactions of different economic agents also exacerbate the issue. The government's uncertainty about the effects of policies on the economy is primarily driven by policymakers' lack of knowledge of the expectations that firms and consumers hold. For example, regarding fiscal policy and monetary policy, they are already intended to combat the recession; suppose the monetary policy plan is to reduce the interest rate, and similarly, fiscal policy involves an increase in government expenditure.

What if firms and consumers have already formed an expectation that policymakers will act in these ways? If they already know, whether they know it or not, that there is uncertainty, then all firms and consumers will act accordingly, well in advance. Therefore, if policymakers do not act in line with the public's expectations, it would lead to significant uncertainty in the economy, and the policy effects may not be realized. And then the government does not know the true model of the economy because there is uncertainty about it. So, they work with the econometric models of the economy in estimating the effects of policy changes, but what is the true effect of such policies? That is, there are uncertainties there. Regarding the uncertainty and economic policy, policymakers can err in using active stabilization policy due to uncertainty regarding the expectations of firms and consumers.

The second point concerns the difficulty of forecasting disturbances. Because the true structure of the economy is unknown, there is uncertainty about the correct model of the economy. Furthermore, there is uncertainty about the precise values of the parameters within a given economic model. After discussing the different types of lags, including inside lags and outside lags, as well as their variations between fiscal policy and monetary policy, we consider how policymakers should respond to a crisis. Broadly speaking, there are two schools of thought that argue in opposing directions.

One, the monetary school, argues that it's better to follow a rule-based approach because it primarily advocates for monetary policy, believing that money is the key factor that affects most economic parameters and variables. Money is the single most important economic variable that clearly explains the variation in output and employment. His argument is that there should be no use of active counter-cyclical monetary policy. He argued that monetary policy should be confined to maintaining a constant rate of growth in the money supply. Suppose the economy is growing; if it is predicted to grow at a 5 percent rate, then the money supply will also grow at a 5 percent rate.

They followed a simple monetary policy rule, meaning the Fed does not and should not respond to the condition of the economy. Instead, they should increase the money supply in line with the GDP growth rate. In contrast, Keynesian economists argue for discretionary monetary policy. They believe that policies should respond to the current or predicted state of the economy. So, they will argue for an activist policy that is discretionary.

For example, when the economy is in crisis, their recommendation is that the government should spend more, increase the purchasing power of the people, rejuvenate aggregate demand, and incentivize such policies. When the economy returns to normal, they no longer need any discretionary policy. So, they recommend this activist policy mainly when the economy is in crisis. So, those are the two broad groups of economic policies.

One is a rule-based policy. That means rule-based policies do not respond to economic crises. As a result, we do not know exactly whether the economy is in a recession or in a boom. If we misinterpret the economy, we will implement the wrong policy, which will exacerbate the magnitude of the problem. Therefore, they recommend following a rule-based policy. In contrast, as I already mentioned, Keynesians argue that we need discretionary or activist policy, especially when the economy is in crisis.

Understand the magnitude of the problem, then respond accordingly to get the economy back on track. Overall, policymakers must answer several key questions when determining how they should operate. Should policymakers actively try to offset shocks? If so, should the response be pre-committed to specific rules, or should policymakers work on a case-by-case basis? Beyond the main policy aspect we discussed, there are other confounding factors to consider. Not only the lags we discussed, including the inside lag and outside lags, but also other factors that affect the effectiveness of these policies.

One is reluctant to lend to banks. As I mentioned earlier, during a crisis, monetary policy is typically expansionary; it reduces interest rates and increases liquidity in the banking system. This is particularly important, given that default risk is often very high during a crisis. During that time, bankers will be reluctant to lend to firms and consumers. You

know that during times of crisis or economic recession, the net worth of firms is already very low. The income of consumers and households is also very low. So, banks will be reluctant; they will be afraid that, because they are getting cheap money from the central bank, they will be hesitant to lend it to firms due to the high default risk.

They already know that the stock market will perform poorly, and household income is already low. So, despite lower interest rates and increased demand for investment, banks may be unwilling to make the loans necessary for investment purchases; if banks made prior bad loans that are not repaid, they may become reluctant to make more, despite the increasing demand. This is why, during times of crisis, conventional monetary and fiscal policies often fail; instead, unconventional fiscal and monetary policies are employed. The money or the increase in aggregate demand directly reaches the economy, and the liquidity injection also directly reaches the economy. And then it also depends on the soundness of the economic and political institutions and system.

As I mentioned earlier, if the central bank reduces the interest rate and firms obtain cheaper loans, the cost of borrowing declines as a result. However, the issue is that, to match up with that, they must have the required managerial and technical skills. When they are getting cheaper credit, they should be acquiring new machines and plants, regardless of whether the economy is in a condition to provide sufficient machines and plants. And, whether they'll receive timely labor and raw materials when expanding the firm's activities.

Let me move to the concluding section. We focused primarily on policy lags in addressing the economic crisis. We have already seen that economic crises require prompt policy responses. However, lags make this difficult. Informational and implementation delays slow fiscal and monetary actions. We have also seen that fiscal policies have larger internal lags but potentially a powerful impact due to shorter external lags.

In contrast, monetary policy has faster implementation or internal lags, but its effects unfold over time. You know that there is nothing, but there are longer outside lags. So, importantly, balancing timely action and long-term stability remains at the core of policy challenges. Thank you for watching this session. I look forward to seeing you in the next one. Thank you.