Chapter 3

Lags in Monetary and Fiscal Policies
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3.1 INTRODUCTION

Time lags that occur between the onset of an economic problem and the full impact of the policy intended to correct the problem. Policy lags can make attempts to fine-tune the economy and reduce the impact of business cycles counter productive. As policy operates with a lag, it will start having effects on an economy subject to temporary shocks. Policy lags can reduce the effectiveness of business cycle stabilization policies and can even destabilize the economy. Policy lags, especially inside lags, are often different for monetary policy than for fiscal policy.

Policy lags arise because government actions are not instantaneous. The use of any stabilization policy encounters time lags between the onset of an economic problem, such as a business- cycle contraction or the onset of inflation and the full impact of the policy designed to correct the problem.

In the past few years several economists have raised the possibility that monetary policy may affect the economy only after a long and variable time lag. The purpose of monetary policy is to help stabilize the economy. The traditional interpretation of this statement is that monetary policy should stimulate the economy when business is slack and tranquilize it when business is brisk. A lengthy lag in the effect of
monetary policy could mean that it does just the opposite: stimulates the economy during inflation and further depresses it during a recession.

Suppose that the economy is at full employment and has been affected by an aggregate demand disturbance that will reduce the equilibrium level of income below full employment. Further that there was no advance warning of this disturbance and that, consequently no policy actions were taken in anticipation of its occurrence. Policy makers now have to decide whether to respond at all and how to respond to the disturbance.

The first concern is to distinguish whether the disturbance is permanent, or at least very persistent, or transitory and thus short lived. Suppose the disturbance is only transitory, such as a one period reduction in consumption spending. When the disturbance is transitory, so that consumption rapidly reverts to its initial level, the best policy may be to do nothing at all provided suppliers or producers do not mistakenly interpret the transitory decrease in demand as permanent, they will absorb it by production and inventory changes rather than by capacity adjustments. The disturbance will affect income in this period but will have very little permanent effect. Since today's policy actions take time to have an effect, today's actions would be hitting an economy that would otherwise have been close to full employment and they would tend to move the economy away from the full employment level. Thus, if a disturbance is temporary and has no long-lived effects and policy operates with a lag, the best policy is to do nothing. However, that it is known that the disturbance will have effects that will last for several
quarters and that the level of income will, without intervention be below that full employment level for some time.

3.2 TYPES OF LAGS

There are delays or lags, at every stage, and these can be divided into two stages-

3.2.1 Inside Lags

Inside lags refer to the delay between the time a policy change is needed and the time the policy change is implemented. Inside lag is the time it takes between the actual onset of a problem and the launching of the corrective action by government.

The Inside lag includes- Recognition lag, Decision lag and Action lag.

Recognition Lag

The recognition lag is the period that elapses between the time a disturbance occurs and the time the policymakers recognize that action is required. It takes time to recognize that the economy has changed in such a way as to require a change in policy. The recognition lag exists for many reasons. First, economic data cannot be collected, processed and assimilated instantaneously. The latest data available even to key decision makers may describe events that occurred a month or more previously. Second, the interpretation of economic data is not yet reducible to a mechanical rule. At any given time some economic series will be moving in one direction, others in another. The length of the recognition lag depends on the efficiency of the central bank in the matter of collecting and interpreting the data pertaining to economic conditions in the country.
Decision Lag

The delay between the recognition of the need for action and the policy decision-differs between monetary and fiscal policy. Decision lag is the time that elapses between when the need for action is recognized and when the action is in fact taken. This relates to the period of time that occurs when the monetary and fiscal authorities recognize the need for action and the data on which action is actually taken. Once the need for a policy change is recognized, it takes decision makers time to alter policy.

Action Lag

In the context of economic policies, a part of the implementation lag involving the time it takes for appropriate policies to be launched once they have been agreed to by policy makers. Another part of the implementation lag is the decision lag. For Fiscal policy, this involves appropriating funds to government agencies(for government spending) or changing the tax code(for taxes).For Monetary policy, this involves the buying and selling government securities in the open market. The action lag is usually shorter for monetary policy than fiscal policy.

Action lags can be caused by several things. First, not all those with policy responsibilities may be convinced of the need for change, this may delay action second, it may take time to work out details of the change and to go through the administrative exercises necessary to implement them. Finally, there might be political or other economic objectives which lead policy makers to put off any policy change. Responsiveness to more than one objective need not always extend the length of the action lag.
Implementation Lags

After a particular policy has been selected, steps then need to be taken to implement the policy. The implementation lag is the delay between the recognition of the need for action and the policy decision. The lag between the policy decision and its implementation for monetary policy is also short. The operation lag refers to the period of time between the adoption of policy and the final effect of that policy on the economic activity. The intermediate lag relates to the moment at which action is taken by the authorities and the moment at which the economy is faced with changes in interest rates, money supply, taxes and public expenditure through monetary and fiscal action.

The sum of the recognition and action lags, called the inside lag, does not therefore, depend solely on the ability of policy makers to recognize and respond to some economic change. Its length depends also upon what is used as a base for measurement and how this base relates to changes in other conditions that also influence policy decisions. The inside lags are influenced by policy tradeoffs and priorities as well as speed of data collection and analysis, administrative procedures and other commonly recognized factors.

3.2.2 Outside Lag

The outside lag is the time required for a policy change to affect the economy. The outside lag includes-

1. Impact Lag- differential between the time action is taken by monetary authorities and any major qualitative change in the monetary system.
(2) Response Lag—differential between the time the monetary system realizes changes and the economy responds.

The outside lag is the period of time that elapses between the policy change and its effect on the economy. This lag arises because individual decision makers in the economy will take time to adjust to new conditions. Thus, for example, households will only gradually adjust their consumption expenditures when their disposable income changes. This may come from a certain amount of habit persistence or may reflect a desire to see whether the change in income is temporary or permanent. Similarly if the interest rate declines, firms may not immediately increase their investment and even if they do, it will typically take some time to produce the capital goods the firms desire.

The outside lag is the time it takes after a policy is selected and implemented by appropriate government authorities. The principle outside lag is termed the impact lag. The outside lag refers to the time involved between changes in interest rates, total reserves, credit rationing etc. and taxes and public spending and their effects on aggregate spending, income and output of the economy. The outside lag is generally a distributed lag. Once the policy action has been taken, its effects on the economy are spread over time. There may be a small immediate effect of a policy action, but other effects occur later. The length of the outside lag depends, in part, on the structure of the economy.

As a consequence, the effect of a policy change will be distributed over time, and it can take a significant period before a substantial
fraction of the full policy effect is felt. Comparing monetary and fiscal policy in this regard, many writers have argued that monetary policy, because it affects the economy less directly, will have a longer outside lag. Another way of looking at this is that, relative to fiscal policy, monetary policy tends to work by influencing investment and the lags in the physical process of building plants and heavy equipment are undoubtedly longer than the lags in producing consumer goods. Overall, then, the longer outside lag of monetary policy must be balanced against the shorter policy lag in deciding on the optimal mix of policy.

### 3.3 Monetary versus Fiscal Policy Lags

Fiscal policy and certainly, changes in government spending—which act directly on aggregate demand—affect income more rapidly than monetary policy. However, while fiscal policy has a shorter outside lag, it has a considerably longer inside lag. Fiscal policy, despite having a larger inside lag than monetary policy, has a shorter outside lag. Changes in government spending have an immediate impact on the real output. Monetary policy, by affecting the money supply and interest rate, affects investment expenditure, which responds slowly to such a change. This is because the interest rate is just one of the many factors that influence the decision to order new capital equipment, and it takes time for the capital goods sector to begin to produce new items on its order books.

The long inside lag makes fiscal policy less useful for stabilization and means that fiscal policy tends to be used relatively infrequently to try to stabilize the economy.
Our analysis of lags indicates one difficulty in undertaking stabilizing short term policy actions. It takes time to set the policies in action, and then the policies themselves take time to affect the economy but that is not the only difficulty. Further difficulties arise because policymakers cannot be certain about the size and the timing of the effects of policy actions.

3.4 MEASUREMENT OF THE LAGS

Measurement of lags of monetary and fiscal policy is difficult. Notions of the exact nature of the lags are not completely developed and the methodological and statistical problems involved are formidable. These factors, account, at least in part, for a wide divergence of opinions and estimates of the length of the lags.

3.4.1 Inside Lags

Conceptually, measurement of the inside lags is fairly straightforward but in practice is often complicated by lack of suitable data and difficulties in interpreting available data. Since these lags generally relate to unannounced judgments and intentions of policy makers, currently available time series will not do. These series may well be influenced by other factors and give a misleading impression of the length of the recognition and action lags. It was assumed that this would be good indication of the length of time. It takes the monetary authorities to recognize significant changes in any target economic variable. These records, reflecting policy decisions as well as statements on the economic outlook of policy makers, were also used to measure the action lag of monetary policy.
Comparable data are not available for the fiscal authorities, so an assumption was made that the recognition lag was the same for fiscal as for monetary policy. Also, no formal attempt was made to estimate the action lag of fiscal policy. The record of explicit attempts to take countercyclical fiscal action, especially on the tax side, is relatively short. This makes it difficult to say anything definite about the action lag of fiscal policy. In short the nature of political and legislative processes gives little meaning to the idea of an average action lag for fiscal policy. A range rather than a point estimates gives a better indication of the length of this lag, and experience may be too limited to set a definite upper bound on this range.

3.4.2 Outside Lags

Measurement of outside lags of monetary and fiscal policy is plagued by conceptual as well as methodological and statistical problems.

Some investigators assume a policy change has limited immediate effects on the economy but that these effects build up as time passes, reach a peak in some future time period and then subside. Others assume that a policy change has its greatest effect initially, and that these effects then become smaller in each subsequent period. Still other assumptions are possible. Depending on the assumption used and the statistical formulations employed, the shape of lag distributions can vary widely. Since the term "outside lag" is generally interpreted as meaning the time it takes for a policy action to achieve a certain percentage of its total effects, or to reach its peak effect, these different distributions can imply greatly different estimates of the outside lags of monetary and fiscal policy.
Numerous statistical formulations and techniques are used to try to estimate the distributed lags associated with policy changes. In an adjustment coefficient for banks that can be converted into a lag distribution is estimated by correlating (in a multiple regression) changes in excess reserves (dependent variable) with the stock of excess reserves at the beginning of each period (independent variable). The distributed lag in bank adjustments is estimated by regressing deposited changes (dependent variable) against current and lagged changes in unborrowed reserves (independent variables). Coefficients of the independent variables describe the lag structure.

Lag distributions describing relationship between changes in Interest rates or income and various types of expenditures have been estimated by the use of a variety of functional forms and statistical methods. Generally they involve including as independent variables in a multiple regression equation lagged observations of the dependent variable (e.g. plant and equipment expenditures) or lagged observations of the independent variable (e.g. interest rates or income). The resulting coefficients and lag distribution depend significantly on the functional form used, the constraints imposed on the coefficients and the statistical estimating procedures followed. These factors on account in part for the different estimates of the inside lag of monetary policy recorded in. The results for fiscal policy contained in similar considerations.

Those who focus on the quantity of money as the main link between monetary policy and the economy generally do not actually estimate the shape of the entire lag distribution. Instead, they compare turning points in income with turning points in the money stock to see
how long the former lags the latter or they correlate lagged changes in the money stock with income or changes in income. The assumption is that these procedures yield an estimate of the weighted average interval between action and effects. The entire lag distribution is compressed into one number.

Economists are not agreed on the best way to estimate the outside lags of monetary and fiscal policy. Much progress has been made in recent years, but much is yet to be learned. A real concern economy, especially in the case of monetary policy, that in spite of the sophisticated techniques used. We have still been unable to isolate the effects of policy changes from all of the other things which influence the pace of economic activity. This separation is essential if the lags are to be measured correctly.