The New Normative Macroeconomics

This lecture examines the costs and trade-offs of output and inflation in the short run.

Five General Principles of Macro Policy Analysis

A. When making decisions, people think about the future.

   1. When modeling expectations, we assume that people are familiar with economic fluctuations over the business cycle.
   2. People use this information to form unbiased (but not error free) forecasts of future economic conditions.

B. Macroeconomic policy can be described and evaluated as a monetary policy rule.

1. Since people are forward-looking, their expectations of current and future policy actions affect their current behavior and the present state of the economy.
2. To evaluate the effect of an explicit policy on the economy, we need to specify how policy responds to current and future events.

C. If a particular policy rule is to work well, policymakers must commit to that rule.

1. In economies where people believe policymakers are following a certain policy, policymakers have a short-run incentive to boost output by deviating from that policy.
2. When policymakers deviate from their policy rule to boost output, people expect policymakers to conduct similar policies in the future. People respond by increasing their inflation expectations, which results in higher inflation but output does not change.
3. Thus, the willingness of policymakers to deviate from their policy rule for short-run gains has negative long-run consequences.

D. Since the economy is basically stable, output and employment eventually return to their long-run trends after an economic shock.

1. In the short run, price rigidities (caused by imperfect information, sticky prices, sticky wages, etc) enable an economic shock to push output and employment away from their long-run trends.
2. In the long run, prices completely adjust to that shock, which enables output and employment to return to their long-run trends.

E. The objective of macro policy is to keep inflation low while simultaneously minimizing fluctuations in output, employment, and inflation after an economic shock.

   1. By responding to shocks in a systematic way, policymakers can minimize fluctuations in output, employment, and inflation.

   2. The main area of disagreement among proponents of different policy rules is how policymakers should try to achieve these objectives.

Instruments, Targets, and Uncertainty

A. The macro policy problem involves choosing a policy rule that describes how the *instruments* of policy should respond to economic conditions in order to improve the performance of *target* variables.

   1. The instruments of macro policy include the

      a. Monetary base

      b. Nominal interest rate

   2. The target variables of macro policy include the

      a. Inflation rate

      b. Unemployment

      c. Output

B. The objective of macro policy is to minimize the deviation of the target variables from their desired levels.

1. A social welfare function summarizes the cost of having the target variables deviate from their desired levels.

2. An example of a social welfare function that policymakers try minimize using their instruments of policy is given by

$$\text{welfare} = [(Y - Y^*)/Y^*]^2 + [\pi - \pi^*]^2 \qquad (1)$$

where Y^* is potential output and π^* is the optimal inflation rate. (in most cases, $\pi^* = 0$)

   a. Unemployment (U) is not included in the welfare function because the deviation of Y from Y* simultaneously captures the deviation in U from its natural rate (U*).

   b. The deviations in Y and π are squared because small deviations in both variables are preferable to a large deviation in one variable.

C. When there is uncertainty about the effect of an instrument on the target variables, policymakers should carefully use that instrument because it could just as easily do more harm than good to these target variables.

D. Another problem with macro policy is that its benefits do not occur at the same time as its costs. An example is a macro policy that is designed to simulate the economy in the short run but leads to higher inflation in the long run.

Inflation is Undesirable for Several Reasons

A. The economic costs of inflation include

1. The cost of making extra trips to the bank in order to avoid holding currency that is constantly losing its purchasing power. These costs are called the “shoe-leather costs” of holding money.
2. The public incurs additional tax costs because some components of the tax system, such as capital gains taxes, are not indexed to the inflation rate.
3. When inflation hits, some people gain and some lose.
    a. Ex. retired people whose pensions are fixed in dollar terms lose.
    b. Ex. homeowners with a fixed rate mortgage gain because they can pay off their mortgages in less valuable dollars.

4. Some economic institutions, such as private retirement arrangements, do not adapted rapidly to inflation so people who rely on these institutions suffer when there is inflation.

B. Some people see inflation as a breakdown in the government's responsibility to provide a stable unit of purchasing power.

C. Some people do not understand that incomes move up with prices but instead view higher prices as diminished real income.

The Costs of Output Loss and Unemployment

A. The economic costs of output loss include
    1. A reduction in disposable income.
    2. A decline in corporate retained earnings.
    3. A drop in tax revenue that will lead to cuts government services and/or increases in future taxes.

B. Unemployed workers, particularly the young, miss out on valuable job training.

C. The experience of unemployment can also cause workers to become physically or mentally ill and makes it more likely that the worker may turn to crime.

D. Periods of unemployment can also have benefits for unemployed workers if they acquire additional skills (i.e. education) or enjoy their additional leisure time.

The Policy Trade-Off between Output and Inflation Fluctuations

A. The relationship between the output gap, $(Y-Y^*)/Y^*$, and inflation, π, is described by the following two equations discussed in the previous lecture.

   1. The MP curve describes the relationship between the IS curve and the monetary policy rule.

$$\pi = \pi^* - [(\beta_Y + \sigma)/\beta_\pi] \times [(Y - Y^*)/Y^*] \qquad (3)$$

      where β_Y and β_π are the responses of monetary policy to $[(Y-Y^*)/Y^*]$ and $(\pi - \pi^*)$, respectively.

      a. In this example, we assume that $r^* = r^{e}*$.

      b. The MP curve is downward slopping because π declines as $[(Y-Y^*)/Y^*]$ rises.

      c. The slope of the MP curve is $-[(\beta_Y+\sigma)/\beta_\pi]$.

2. The PA curve describes the Phillips curve relationship.

$$\pi = \pi_{-1} + f\times[(Y_{-1} - Y^*)/Y^*] \qquad (2)$$

   a. Again, we assume that $\pi^e = \pi_{-1}$.

   b. Recall, the PA curve is horizontal because π is related to variations in $(Y_{-1}–Y^*)/Y^*$ and NOT to variations in $(Y–Y^*)/Y^*$.

B. The macro policy alternatives, a strong focus on either inflation or output, can be characterized in terms of the slope of the MP curve, $– [(\beta_Y+\sigma)/\beta_\pi]$.

   1. If macro policy focuses on reducing variation in inflation, then β_π is large and β_Y is small. Thus, the MP curve is flat.

   2. If macro policy focuses on reducing deviations in Y from Y*, then β_π is small and β_Y is large. Thus, the MP curve is steep.

C. The degree of inflation persistence (i.e., the amount of time π is above or below π^*) is calculated by combining the equations for the PA and MP curves.

1. If we rearrange (3) in terms of $[(Y–Y^*)/Y^*]$, the equation for the MP curve becomes

$$(Y - Y^*)/Y^* = -[\beta_\pi/(\beta_Y + \sigma)]\times[\pi - \pi^*] \quad (4)$$

2. If (4) is substituted into (2), we get the following equation describing inflation persistence

$$\pi = \pi_{-1} - f\times[\beta_\pi/(\beta_Y + \sigma)]\times[\pi_{-1} - \pi^*] \quad (5)$$

3. An equation for inflation persistence is then calculated by subtracting π^* from both sides of (4) and rearranging the terms such that

$$(\pi - \pi^*) = [1 - f\times[\beta_\pi/(\beta_Y + \sigma)]]\times[\pi_{-1} - \pi^*] \quad (6)$$

4. The degree of inflation persistence depends on the emphasis of macro policy on reducing variations in π and Y.

$$(\pi - \pi^*) = [1 - f\times[\beta_\pi/(\beta_Y + \sigma)]]\times[\pi_{-1} - \pi^*]$$

   a. If macro policy is focused on reducing variations in π (i.e. β_π is large and β_Y is small), then the coefficient $[1-f\times[\beta_\pi/(\beta_Y+\sigma)]]$ in (5) is small. Thus, deviations of π from π^* will not persist for long periods.

   b. If macro policy is focused on reducing variations in Y (i.e. β_π is small and β_Y is large), then the coefficient $[1-f\times[\beta_\pi/(\beta_Y+\sigma)]]$ in (5) is large. Thus, deviations of π from π^* will persist for long periods.

D. The optimal macro policy that minimizes the social welfare function, (1), involves a combination of variations in Y from Y* and π from π * and not strict adherence to either price stability or output stability.

1. The costs of strict price stability (i.e., $\pi = \pi^*$) are large fluctuations in output.
2. The costs of strict output stability (i.e., $Y = Y^*$) are large fluctuations in inflation.

Potential Policies to Reduce Price Rigidities and Minimize Output and Inflation Losses.

A. Implement a monetary policy rule that raises both the nominal and real interest rates when the inflation rate increases.

B. Streamline the labor market

    1. Any policy that reduces the time and costs of matching workers with jobs and provides participants with better information on the prevailing wage rate.

    2. Elimination of any government policies that fix prices and/or wages.

C. Improve the indexation of pensions and tax laws to inflation.

D. Avoid government policies that will cause a price shock.

E. Follow a trade policy that eliminates restrictions on imports because free trade policies have been shown to increase competition and reduce inflation.