Problems of Interaction between Aggregate Demand, Inflation and Unemployment

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Abstract *Current economy, without exception, recorded fluctuations in the general level of economic activity, represented generally by gross domestic product (GDP). The development trend illustrates a hypothetical dynamic of economy, drawn by joining the points that would be a constant evolution of the economy over a period of time, or, in other words, provide an estimate of potential output developments in labor productivity that economy could achieve in conditions of full employment of labor. The economy is typically located above or below the trend.In order to study this evolution, the science of macroeconomics uses a number of concepts or phrases such as "economic cycle", "business cycle", "cyclical fluctuations" and so on, between the fundamental variables whose components or sign up demand or aggregate expenditure, inflation and unemployment, which interact in a specific way. Cyclical unemployment is accompanied by underutilization of labor resources and incomplete use of plant and equipment. This is illustrated by an indication of the capacity utilization in the manufacturer's economy. Economy bear a cost when resources capital and labor are incomplete used. Production that could have been achieved with these productive resources is the opportunity cost of cyclical unemployment, and can be very high. Aggregate expenditure is total expenditure households, firms, government and external sector made for goods and services produced in the economy. Change affects costs of production and income, and their dynamics exert further effects on spending. Economies are constantly affected by various shocks, such as financial crises, rising oil prices, large fluctuations in the budget deficit, the explosion of transactions on the stock exchange, new technologies that affect entire sectors of the economy. There are, in fact, complexes of factors that have the potential to generate recession or expansion. In the face of these shocks, policy makers must ensure the potential savings in trying to keep inflation rates low and stable. The authors are concerned to highlight different aspects of the interaction between the three variables during significant phases of deployment cycle.*

1.Introduction

It was shown that the real interest rate is one of the determinants of aggregate expenditure. To simplify the analysis, it is considered a closed economy. Ignore thus net exports and the exchange rate, despite the growing importance of international trade. However, we can draw several useful relations. Higher real interest rate reduces aggregate expenditure by means of two processes, namely: a) by decreasing profitability of investments, which causes companies to abandon planned projects, and b) by reducing households' purchases of housing and durables goods like automobiles.

The starting point of the analysis of the relationship between real interest rate and monetary policy should be the stock market. The real interest rate equals savings and investments when the economy is at full employment level. But savings must equal investment and if the economy is not at full employment level of the balance of the capital market. Savings and investment depend on the real interest rate and the level of production. If production in the economy is lower than the corresponding full employment income households will be lower, and they will save less, regardless of the real interest rate. The saving moves left because marginal propensity to consume is less than one - reducing the monetary unit of income will reduce by more than one monetary unit of consumption, which means that savings decrease. If the function does not change investments, the stock market will again be in equilibrium at a level lower than the corresponding production of full employment and the real interest rate will increase.

However, investments will remain unchanged if GDP declines. The investments will be affected when production decreases and the economy falls into recession. Reduced production leads to higher unemployment and less use of production capacities. This lowers the need for new investment and companies are increasingly reluctant to invest if the prospects are unfavorable.

Steady new interest rate can be greater or less than the initial relative positions according to the saving changes and investments.

2. Aggregate demand-inflation curve (ADI)

The effect of inflation on aggregate expenditure and thus the production of equilibrium depend crucially on the monetary policy. The effect of inflation on aggregate expenditure is actually an element of short-term economic fluctuations. The basic idea lies in the fact that the central institution of issue (Central Bank) is interested in the level of inflation and it knows that as reducing unemployment, inflation tends to increase. The higher the inflation, the Central Bank acts to reduce aggregate expenditure and thus fails to reduce the pressures that lead to increased inflation.

Central Bank can influence aggregate expenditure through the real interest rate. Increase in the real interest rate will reduce investment spending. If inflation is reduced, the Central Bank acts to reduce real interest rate and thereby aggregate expenditure[1]. These changes affect the equilibrium aggregate expenditure of production.

Chain links monetary policy to inflation and aggregate expenditure raises a problem: namely, how effecting Central Bank real interest rate. Central Bank has handy tools to control the nominal interest rate by influencing the supply of reserves in the federal funds market. It is important to remember that the Central Bank directly controls the supply of federal funds, by adjusting supply can influence the nominal interest rate. But to influence aggregate expenditure Central Bank must be able to control the real interest rate. This means that the Central Bank should be able to change the nominal interest rate in the same direction with inflation, but with a higher intensity.

The discussion on monetary policy rule leads to the following conclusion: as inflation increases, the real interest rate increases and aggregate expenditure and output will be reduced and vice versa. This means that inflation and output evolve in different directions, there exists an inverse relationship. Inverse relationship mentioned is drawn in aggregate demand-inflation curve or curve ADI. ADI slope is negative. When using an analysis based on supply and demand to study how price and quantity are determined are important both supply and demand curves and their slopes[2].

In a closed economy, the slope of ADI is determined by two factors.

First of all, is about how the Central Bank adjusts interest rates due to changes in inflation[3].

The second factor is the effect of the real interest rate on households and firms decisions about consumer spending and investment[4].

3. Adjustment of short-term inflation

The fact that wages and prices do not adjust quickly enough to keep the economy at full employment level does not always mean that they remain constant. Wages and prices adjust in response to the pressure of supply and demand, and they will grow faster if workers and firms anticipate higher inflation. Also, the price will be affected by the shocks affecting production costs. These three factors: supply and demand pressures,

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[1] For example, systematic response to economic evolution is a monetary policy rule for Central Bank. Monetary policy rule is the description of how the Central Bank changes the real interest rate in response to economic developments. It involves a very simple policy rule, the Central Bank reacts to changes in inflation, but the it also reacts in other situations, such as a financial crisis, in which case reduce interest rates even if inflation has not changed. The Central Bank may, however, be concerned with the economic downturn. When the Central Bank reacts to other similar factors, the monetary policy rule designed to establish the connection between interest rates and inflation will change. A monetary policy rule reflects changes of inflation adjustments rate. Monetary policy rule changes when, at a given level of inflation, the Central Bank sets a different rate than the previous. Central Bank aims to increase the real interest rate when inflation rises because of the effect of production exercises on inflation. If inflation starts to rise, the Central Bank wishes to counter this increase, as such, have to reduce production, which increases the cyclical unemployment, which in turn leads to lower inflation. If GDP falls below potential, inflation falls and the Central Bank may take measures to reduce the real interest rate, which stimulates aggregate expenditure and places the full employment economy.

[2] If, for example, demand is relatively inelastic and react less to price changes, the supply curve shift will have little effect on the equilibrium quantity. Similarly, adjusting for inflation and economic output at different pulse curve shape will depend on ADI (whether flat or steep). Changes in inflation lead to less significant changes in aggregate demand when ADI curve is steep.

[3] In other words, it is the monetary policy rule. If the Central Bank reacts strongly to inflation, this will lead to greatly changes in aggregate spending, which means a relatively flat ADI curve. But if the Central Bank reaction to changes in inflation is low, the real interest rate will increase less and aggregate expenditure will be less reduced. As a result, the curve is relatively steep ADI.

[4] For example, ADI curve will be flat if the investment costs significantly react to changes in the real interest rate. In other words, a change in the real interest rate caused by changes in inflation causes greater aggregate spending. If investment and expenditure households do not react significantly to changes in the real interest rate, ADI curve will be flat.

expectations and inflationary shocks are key to understanding inflation.

The analysis of the relationship between the pressure supply and demand, and payments change is provided by the relationship known as the Phillips curve[5]. A second feature of the relationship between unemployment and inflation is its instability. It has been shifted over time.

There is a simple explanation for this statement, meaning that cyclical unemployment is not the only factor influencing wages. Inflationary expectations are also important.

At any given level of cyclical shocks, the growth rate of wages depends on inflationary expectations. If unemployment is low, the output is above potential, and individuals anticipate that there will be inflation; wages can rise even faster than necessary, just to compensate for expected inflation.

With a low unemployment and a production located above potential, workers face a wide range of choice of employment, which can make them leave their work in trying to find a better job while firms will be increasingly difficult to find substitutes. Wages will grow faster because firms try to retain workers whom they have and attract new workers.

Fundamental relationship between output and inflation synthesized form of inflation adjustment curve was constructed from the Phillips curve between cyclical unemployment and wage increases. It was later argued that wages and prices evolve synchronously so that short-term inflation adjustment curve (SRIA) correlates cyclical unemployment and inflation. It was demonstrated the correlation between wages and prices, and also the fact that inflation has exceeded wage increases when oil shocks occurred. Changing the oil price has changed the relationship between wages and prices.

The justification is simple. Wages are a significant component of corporate costs. Firms have other costs, and the cost of energy used is one of them. At a time of rising wages, prices will raise more if they increase the cost of components.

Increases in oil prices in the 1970s led to inflation increasing opposite to wages. Such situations are called inflation shocks and lead to displacement of SRIA curve. For a given level of inflation expectations and output, a positive inflation shock causes inflation increase[6].

Inflation adjustment curve linking inflation and the state of the economy, measured by a comparison between current and potential output, i.e. the output gap, which can be positive or negative.

4. Conclusions

1. Economies pass through periods of recession and expansion characterized by fluctuations in output around full employment level. Recessions are periods of declining real GDP, and expansions, periods of real GDP growth. Fluctuations in production output are called business cycles.

2. If wages and prices do not adjust quickly to maintain equilibrium in the markets, when supply and demand are equal, the economy will face cyclical fluctuations in unemployment.

3. To explain the concept of cyclical unemployment, we must understand why the aggregate labor market is not in equilibrium. If real wages do not adjust to changes in demand or aggregate supply of labor and if the application is moved to the left or offer moving right, then the amount of labor will exceed the labor demanded given the current level of wages, which leads the emergence of cyclical unemployment.

4. Wages adjust slowly because of union contracts and implicit contracts determine low frequency changes for the wages. Firms minimize labor costs through efficiency wages. Reduce wages increase costs by reducing productivity, leading to the most valuable employees to leave the company or leading to increased labor costs associated to labor fluctuation.

5. The labor market and the aggregate production function are influencing the fundamentals of proper production of full employment, but for short-time firms adjust production due to demand fluctuation. Thus the

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[5] The logic behind Phillips relationship is simple. If unemployment is low, firms have difficulty hiring new workers. This creates pressure on wages, as firms are forced to pay higher wages. If unions and firms negotiate wages, unions will be in an advantageous position, being able to ask for wage increases. At low levels of unemployment, workers can decide that the time to find a new job. Firms that cannot meet wage increases are no longer able to retain the best workers. If workers believe that it is relatively easy to find a new job will be less afraid of the possibility of being laid off. As a result of these efforts might work to decrease in intensity. To maintain productivity, companies will have to increase salaries at a faster pace. Conversely, if unemployment is high, low pressure will manifest increase in real wages. Real wages will grow relatively slowly or will be reduced for certain employees.

[6] Some economists have argued that the last part of the 1990s was a similar situation in the 1970s, but in reverse. In other words, the U.S. has been affected by inflationary shock again, but this time it was a negative shock, which led to the downward movement of the curve SRIA. Inflation was lower at each level of production. Or, equivalently, inflation was lower at each level of cyclical unemployment. Two empirical evidence is consistent with this. It appears that, in the 1990s, inflation rose less than wages in the same way that inflationary shocks led to higher inflation than higher wages. Secondly, in the late 1990s, unemployment was on an unprecedented scale in the last 30 years. In April 2000, for example, the unemployment rate was 3.9%, the lowest level recorded since 1970. Despite the developments in the labor market, inflation has not increased, as suggested SRIA curve. This show and its economy have been affected by a negative inflation shock.

aggregate demand meets a critical role in determining the appropriate balance of short-term production.

6. The equilibrium production is determined at the intersection of 45^0 line and aggregate expenditure function. The aggregate expenditure function illustrates the spending levels at every level of national income, while the 45^0 line is the representation of points where production is equal to the aggregate expenditure.

7. Moving the aggregate expenditure function generates steady output change. Magnitude of production increase resulting from the movement up the aggregate expenditure function depends on the slope of the latter. A large part of macroeconomic analysis focuses on the factors that influence the slope function that moves it, as well as the policies that affect the function.

8. Changing the real interest rate affect investment, exchange rate and net exports. Increase in the real interest rate reduces investment and net exports, causing downward movement of aggregate expenditure function. Accordingly, consistent with the steady production is reduced with increasing the real interest rate.

9. Aggregate demand is inversely related to the rate of inflation. As inflation increases, the Central Bank increased interest rates, thus reducing aggregate expenditure. This negative relationship is called the aggregate demand - inflation curve or ADI curve.

10. At a given level of inflation, the equilibrium level of national production curve is given by ADI.

11. ADI slope depends on the behavior of the Central Bank. If its rate increased significantly in response to inflation, the effect on aggregate demand will be considerable and the ADI curve will be almost horizontal. If the reaction of Central Bank is not significant, IDA curve will be almost vertical.

12. ADI slope depends on the response of investment to changes in interest rates. If the increase in the real interest rate exerts a significant effect on investment and expenditure ADI curve will be almost horizontal.

13. If GDP is below the level corresponding to full employment, inflation reduces, moving down the inflation adjustment curve and increasing the production of balance. This process continues until the establishment of full employment.

14. If GDP is above the full employment level inflation increases moving up inflation adjustment curve and leading to reduced production of balance. This process continues until the restoration of full employment.

15. Once inflation adjusted, the economy will be at full employment level. ADI curve shifts affect GDP in the short term, but long term these movements only affect inflation.

16. Short term, high unemployment is associated with a lower inflation, all other things being considered constant. This relationship is called the Phillips curve.

17. A low level of output is associated with a lower inflation, all other things being considered constant. This relationship represents the inflation adjustment curve.

18. Inflation associated with a level of cyclical unemployment and the output gap increases with increasing inflationary expectations. Therefore, if the government tries to keep unemployment at levels too low, the inflation rate will continue to rise, every inflation increase being reflected in inflationary expectations of individuals. Inflation adjustment curve embedding inflationary expectations reflects the effects of inflation expectations.

19. Unemployment rate at which inflation is stable is called unemployment rate which do not determines the acceleration of inflation (NAIRU). Equivalently, we can say that inflation is stable when the output gap is zero.

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