

Published in Challenge, 41 (January-February 1998), 7 - 18.

Zero is not the Optimal rate of Inflation

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Monetary policy and interest rates remain at center stage of the economic policy debate. During the last recession, the question was how fast and how low should the Federal Reserve lower interest rates. Now that the unemployment rate has fallen to a twenty three year low of 4.8%, the question has quickly become how high the Fed should raise rates.

Many economists adhere to the notion of a "natural" rate of unemployment (about which more below), and this notion is driving much of the current debate. Federal Reserve Chairman Alan Greenspan recently referred to the laws of supply and demand having not been repealed, and argued that increased inflation is inevitable if the economy continues on its current course. Behind this reference lies a belief in a natural rate of unemployment, itself determined by supply and demand in the labor market.

Side-by-side with this belief, many economists (including most at the Fed) also claim that optimal monetary policy should aim for zero inflation. However, the claim that this is optimal is inconsistent with the theory of a natural rate of unemployment. In effect, there is a slip betwixt the cup of theory and the lip of policy. How are we to explain this slippage, and what really is the optimal rate of inflation?

COMPETING PERSPECTIVES ON THE INFLATION - UNEMPLOYMENT

TRADE-OFF

(1) NAIRU: all rates of inflation are equally optimal.

The dominant economic paradigm, subscribed to by both the Fed and Wall Street, is the theory of the non-accelerating inflation rate of unemployment (NAIRU) -- alias the "natural" rate of unemployment. The theory of the NAIRU maintains that if you try and push the unemployment rate below the natural rate, the result will be an increase in inflation but no permanent reduction in unemployment. This is because market forces push the economy back to the natural rate of unemployment, so that the only effect of sustained expansionary monetary policy is to raise inflation. The theory of the NAIRU therefore maintains that policy makers cannot trade-off a bit more inflation for a little less unemployment.

Economists label the relationship between inflation and unemployment as the Phillips curve. According to NAIRU, the the Phillips curve is vertical as shown in Figure 1. Its verticality indicates that if the central bank (i.e. the Fed) increases inflation, there is no reduction in the unemployment rate: similarly, lowering the inflation rate also has no effect on unemployment. This means that the inflation rate can't be manipulated to lower unemployment.

The economic logic of natural rate theory is as follows. The level of employment is determined by the interaction of firms' demand for labor and workers' supply of labor. Owing to imperfect information amongst workers regarding the location of jobs, and imperfect information amongst firms as to who job seekers are, there is always a little unemployment resulting from some workers failing to hook up with potential employers. However, neither the demands and supplies of labor nor the pattern of information amongst firms and job seekers is affected by inflation. Consequently, inflation can't affect the level

of employment and unemployment, and hence the Phillips curve is vertical: inflation simply has no effect on labor market outcomes.

According to the theory of the NAIRU neither inflation nor deflation (negative inflation) have any effect on either unemployment or output. Thus, from a strict NAIRU perspective, all rates of inflation are equally optimal: inflation simply does not matter. Though Wall Street and Federal Reserve economists may push for zero inflation, their own theoretical framework actually provides no justification for this policy stance. The implication is that they either don't understand the issue (which is unlikely) or that they are really working with some model other than the NAIRU.

(2) The optimum inflation rate is the actual rate.

A modified version of the theory of the NAIRU maintains that the optimal rate of inflation is the actual rate. Thus, if an economy currently has a 5 percent inflation rate, 5 percent is the optimal rate. The logic is that inflation itself doesn't matter, and in the long run the Phillips curve is vertical. However, lowering the equilibrium rate of inflation is costly, and results in lost output.

The reason why it is costly to lower inflation is that economic agents have inflation expectations, and these expectations are hard to adjust. Getting agents to lower their inflation expectations requires a period of higher unemployment, and this implies lost output. Thus, if the central bank wants to lower inflation from 5 to 3 percent, this would require a period of higher unemployment and there would be an output cost. However, since there is no compensating benefit to reducing inflation, the implication is clear -- the central bank should stick with the existing 5 percent rate.

A problem with this reasoning is that just as there is a one-off cost to lowering the rate of inflation, so too there is a one-off gain to increasing the rate of inflation. If the central bank stimulates the economy, unemployment and output will temporarily increase. After agents have adjusted their inflation expectations upward, the economy will then return to the vertical Phillips curve with a higher equilibrium rate of inflation. In the long run, unemployment and output will again be unchanged, but there would have been a one-off gain. Given this logic, the central bank should go on nudging the inflation rate ever upward, so that gradually accelerating inflation is the optimal policy.

(3) Zero inflation is the optimum rate.

Most economists adhere to the theory of the NAIRU with its vertical Phillips curve. At the same time, many would also agree with the claim that zero inflation is the optimum rate of inflation. These positions are inconsistent.

The claim that zero inflation is optimal implies a different model of inflation from that of the NAIRU. According to the NAIRU, inflation has neither costs nor benefits: however, if zero inflation is optimal, it must be the case that inflation is costly and causes lost output and increased unemployment. That is why zero inflation is preferred to non-zero inflation.

Implicit in this claim is a notion of a positively sloped Phillips curve such as is shown in Figure 2. Now, increased inflation causes a north-easterly movement along the Phillips curve that results in higher unemployment. The reason for this negative effect is that inflation distorts the decisions of agents by forcing them to waste resources combating its effects. As a result, profitability, output and employment are all reduced. An analogous logic applies to deflation, which also induces agents to waste resources combating its

effects. Given this, the Phillips curve is bow shaped, and maximum productive employment obtains at zero inflation. Zero inflation is therefore the optimal rate of inflation since it saves households from wasting resources in combating the distortions of inflation.

(4) The Keynesian Phillips curve.

An alternative theory of inflation is the Keynesian Phillips curve. According to this theory, there is a negative long run relationship between unemployment and inflation. This is illustrated in Figure 3 in which unemployment can be reduced at the expense of a little more inflation. The Phillips curve is convex, so that as the unemployment rate falls, the trade-off worsens: further reductions in unemployment cost more and more in terms of inflation. The significance of this construction of the inflation - unemployment relation is that the central bank now has a policy choice that involves trading-off inflation versus unemployment.

The economic logic of the Keynesian Phillips curve is that "inflation greases the wheels of adjustment" in labor markets. In a dynamic multi-sector economy, in which different sectors are subject to random shocks, there is a need to adjust sectoral prices and wages: in sectors receiving positive shocks, prices and wages are bid up; in sectors receiving negative shocks, there is a need for prices and wages to fall. However, it is difficult to get prices and wages to fall, and it may therefore be easier to accomplish adjustment by having prices rise in sectors at full employment. In this fashion, a little inflation can grease the wheels of adjustment, thereby lowering unemployment and raising output.

The Keynesian Phillips curve has a number of important policy implications. First, inflation now has a positive effect on output. Second, there is nothing optimal about zero inflation: it is just a particular point on the Keynesian Phillips curve. Third, there is no automatic optimum rate of inflation. Instead, the optimum rate depends on society's preference for low unemployment versus low inflation: if society values low unemployment, then the optimal rate of inflation will be somewhat higher; if society dislikes inflation a lot, then the optimal rate will be lower and unemployment will be higher.

(5) The public finance Phillips curve.

A final approach to inflation comes from public finance. Inflation constitutes a tax on money. In effect, it erodes the purchasing power of money balances, and to maintain sufficient purchasing power, agents need to get more money balances. Since governments control the money supply, agents have to acquire new money balances from the government by giving over resources in return. In this fashion, inflation acts akin to a tax.

The importance of the inflation tax is that it bolsters government revenues, and governments can therefore reduce other sorts of taxes. Thus, government can reduce income taxes, thereby providing an additional incentive to work. This raises output and lowers unemployment, so that a negative relationship between inflation and unemployment emerges. This is shown in Figure 4. However, if government pushes the inflation rate too high, economic agents have an incentive to reduce their money holdings and reduce their exposure to the inflation tax. They therefore switch to different forms of financial arrangements, and spend resources in order to avoid being hit by the inflation tax.

These expenditures lower output and raise unemployment, and hence the public finance Phillips curve bends back once inflation increases beyond a certain point. The point where the public finance Phillips curve bends back is the maximum level of output obtainable.

THE POLITICAL ECONOMY OF ZERO INFLATION

The previous section outlined a range of different perspectives for analysing the question "what is the optimum rate of inflation?" Zero inflation is frequently asserted to be the optimum rate of inflation, and the Fed's stated goal of price level stability suggests that this is also the official view. However, the Fed also publicly adheres to the theory of the NAIRU, yet this theory provides no justification for a zero inflation goal since it represents all rates of inflation as equally optimal. It is possible that the Fed does not appreciate this inconsistency, but a more likely explanation is that the Fed's commitment to zero inflation is driven by something other than a belief in NAIRU.

Whereas a goal of zero inflation cannot be supported by an appeal to NAIRU, it can be viewed as optimal if inflation (or deflation) has costs and no benefits. In this case, the Phillips curve is bow shaped (as in Figure 2), and the minimum rate of unemployment coincides with zero inflation. However, though such a Phillips curve is a theoretical possibility, there is no compelling empirical evidence for a positively sloped Phillips curve and nor does the Fed talk about the inflation - unemployment trade-off in such a fashion.

Both the Keynesian Phillips curve (Figure 3) and the public finance Phillips curve (Figure 4) offer the prospect of a trade-off between inflation and unemployment. These two theories are mutually compatible: inflation may grease the wheels of adjustment, and low inflation may also be beneficial from a public finance standpoint. Combining the two

can then explain why low inflation can be desirable, and why high inflation has negative effects that come to dominate. Low inflation greases the wheels of adjustment: however, as inflation increases the distortionary impact on portfolio and investment choices comes to dominate, thereby causing the Phillips curve to bend back. Moreover, there is empirical support for the existence of such a trade-off at low levels of inflation which suggests that this is the correct way for thinking about the economy.

The point of lowest unemployment and maximum output is where the Keynesian - public finance Phillips curve starts to bend back. The costs of unemployment, measured in terms of human misery and lost output, are well recognized: the costs of inflation are harder to pin down. This suggests that there is a strong *prima facie* case for identifying the point of maximum output as the optimal rate of inflation.

Given this, why does the Fed support zero inflation? Understanding the Fed's position requires introducing political considerations. To talk of a socially optimum rate of inflation is to talk implicitly of a unified national interest. In reality, no such unified interest exists: instead, economic interests diverge across groups. Labor, industrial capital, and financial capital constitute three core economic groups.

For labor, the point of minimum unemployment constitutes the optimum rate of inflation. This corresponds to point A in Figure 5. At this point, labor's bargaining strength is at a maximum, and wages are also therefore at a maximum. Empirically, point A can be identified with a level of inflation in the region of 3 - 5%. Apart from the 1970s' oil price inflation, moderate inflation has usually been associated with low unemployment and rising real wages.

Industrial capital prefers a somewhat higher rate of unemployment and a lower rate of inflation. This is shown as point B in Figure 5. Profits are at a maximum: unemployment is sufficiently high to hold wages in check, while not so high as to undermine the healthiness of the economy. Empirically, point B likely corresponds to a region of inflation between 1 - 3%. Such a point on the Phillips curve is consistent with the stylized fact that profits peak before the peak of the business cycle, and this occurs before unemployment reaches its cyclical low and before inflation reaches its cyclical high.

Lastly, financial capital prefers zero inflation, which is shown as point C in Figure 5. Zero inflation means that the inflation tax on financial assets is zero, which is to the benefit of financial capital. However, financial capital does not want deflation (negative inflation) because this would lead to default on existing debts: with prices and wages falling, debtors would not have the income to pay back their borrowings.

Such a perspective accounts for why zero inflation policy is popular on Wall Street, and why there are continuing calls for higher interest rates despite any evidence of accelerating inflation. It also explains why the National Association of Manufacturers has opposed these calls. To the extent that the Federal Reserve is influenced by financial interests, it also explains why zero inflation is popular within the counsels of the Federal Reserve. In this regard, the Federal Reserve system is owned by the nation's commercial banks, and these banks get to appoint almost half of the officers who determine the course of monetary policy. There is also a significant revolving door between the Federal Reserve and the financial sectors, and many Fed Governors, Fed economists and Presidents of Regional Federal Reserve banks take up jobs on Wall Street after finishing their stints with the Fed.

THE RHETORICAL FOUNDATIONS OF ZERO INFLATION POLICY

If the above analysis is right, sectional self-interest explains the current vogue for zero inflation policy. That this should be so is not a matter of conspiracy theory: rather it accords powerfully with the most fundamental axioms of modern economics, whereby the energy that powers the invisible hand is generated by the butcher, the baker, and the candlestick maker each pursuing their self-interest. This pursuit of self-interest extends to both the market and the making of public policy.

However, the pursuit of a narrow self-interest hardly constitutes a compelling basis for making zero inflation the goal of public policy. An alternative rhetoric is needed. The theory of the natural rate of unemployment is a useful part of this rhetoric. By implication everything else is unnatural. Moreover, natural rate theory is readily understandable in terms of a full employment barrier, the breaching of which triggers increased inflation. The drawback is that the natural rate of unemployment is a highly problematic concept in practice because it is not clear what it is. Thus, during the current economic expansion the Wall Street paradigm has been embarrassed since it asserted that inflation would accelerate once the unemployment rate fell below 6 percent. Yet, the unemployment rate has now been below 6 percent for over three years and inflation has actually fallen.

This embarrassment has reinforced the need for a slippage that asserts zero inflation to be the theoretically implied optimal policy. Through this slippage, the private goal of zero inflation is achieved, while the embarrassing albatross of identifying full employment is removed from policy makers' necks. Zero inflation now becomes the official goal in of itself. There is also some additional rhetorical mileage since the public still associates high inflation with the economic turbulence caused by the 1970s OPEC oil shocks. In this

fashion, political economy and rhetoric fuse together to make a powerful platform for zero

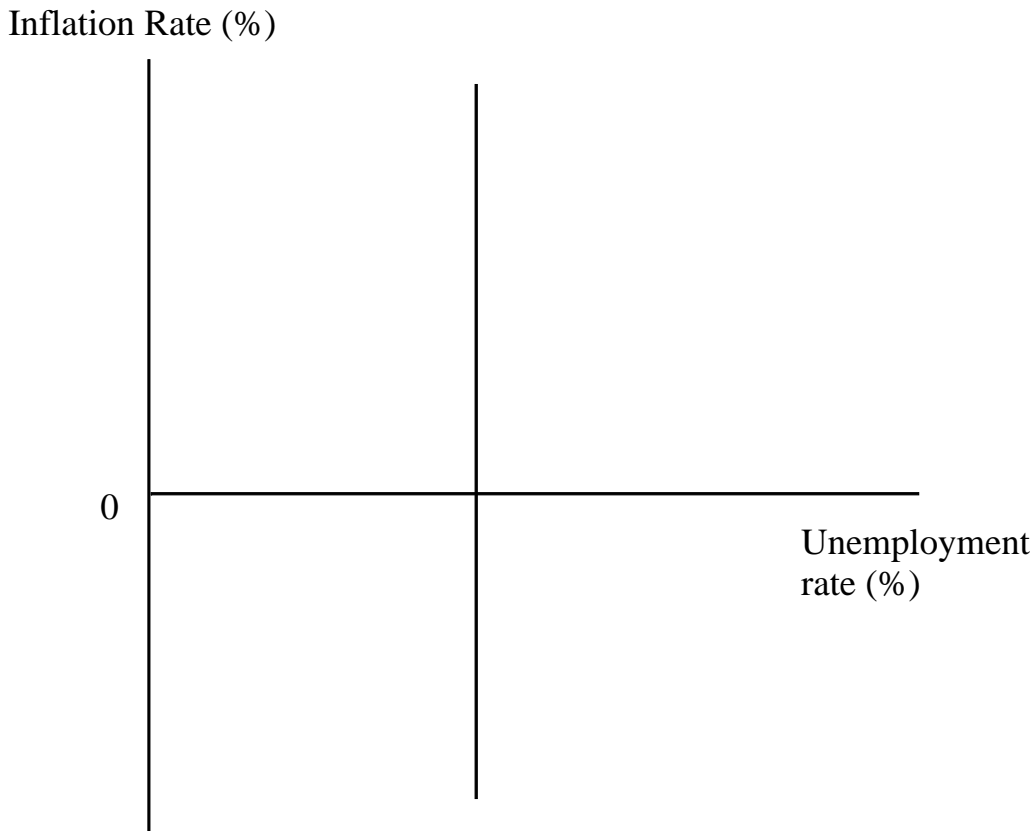


Figure 1 The NAIRU Phillips curve.

inflation. However, the reality is that it is hard to make a persuasive economic case for zero inflation, and there is a strong case that it is outrightly harmful. Pursuit of zero inflation risks increasing unemployment, with only financial interests standing to benefit. This is the ultimate moral of the story.

Inflation rate (%)

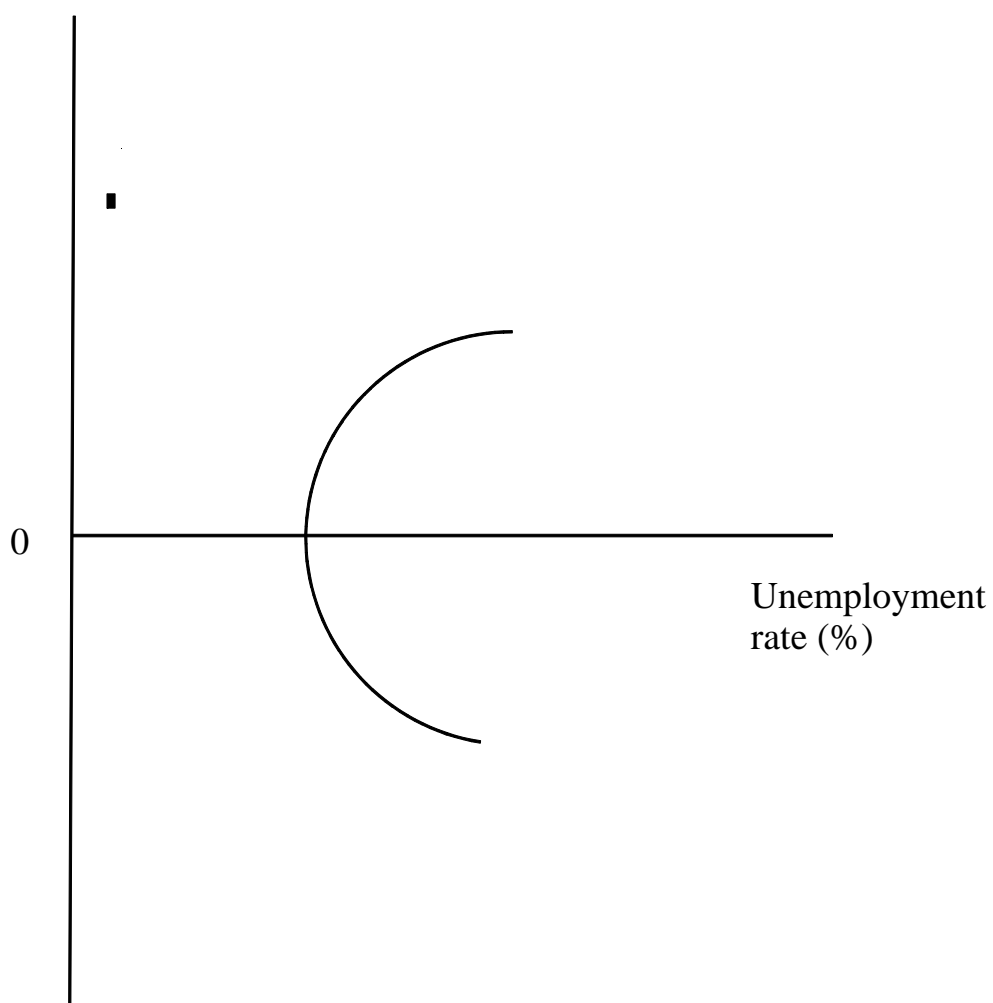
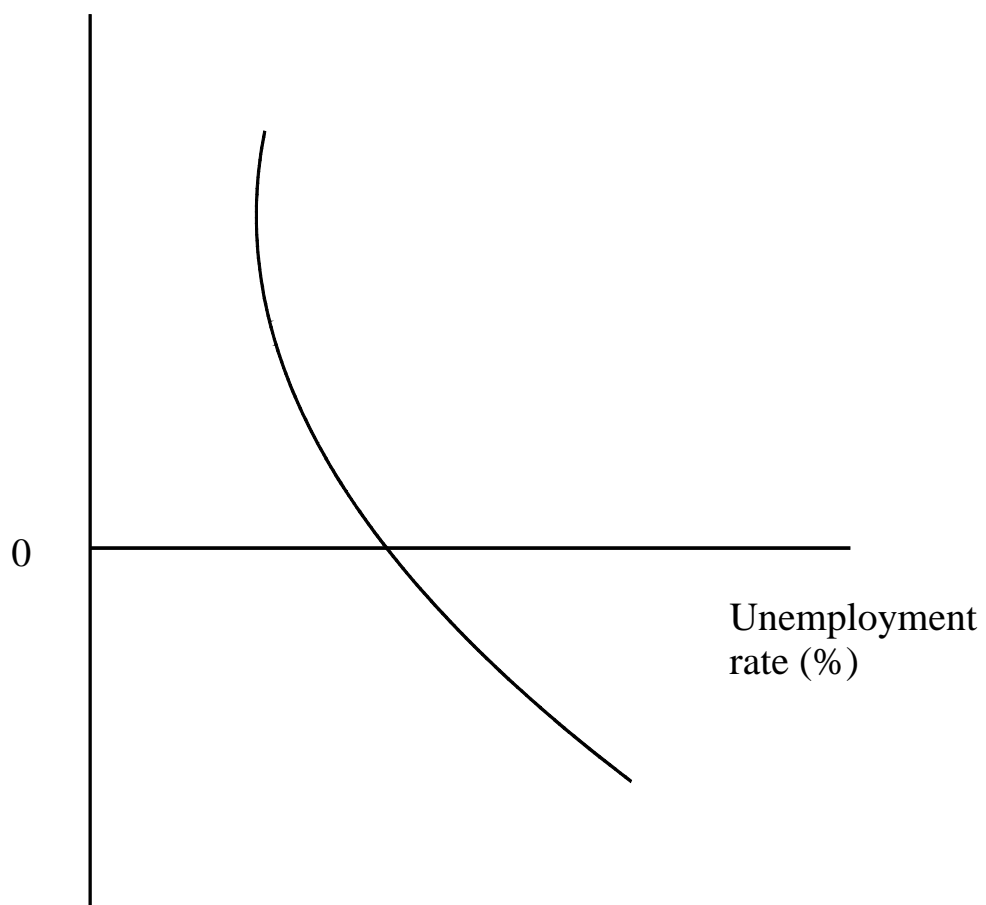


Figure 2 The positively sloped Phillips curve.

Inflation rate (%)



The Keynesian Phillips curve.

Inflation rate (%)

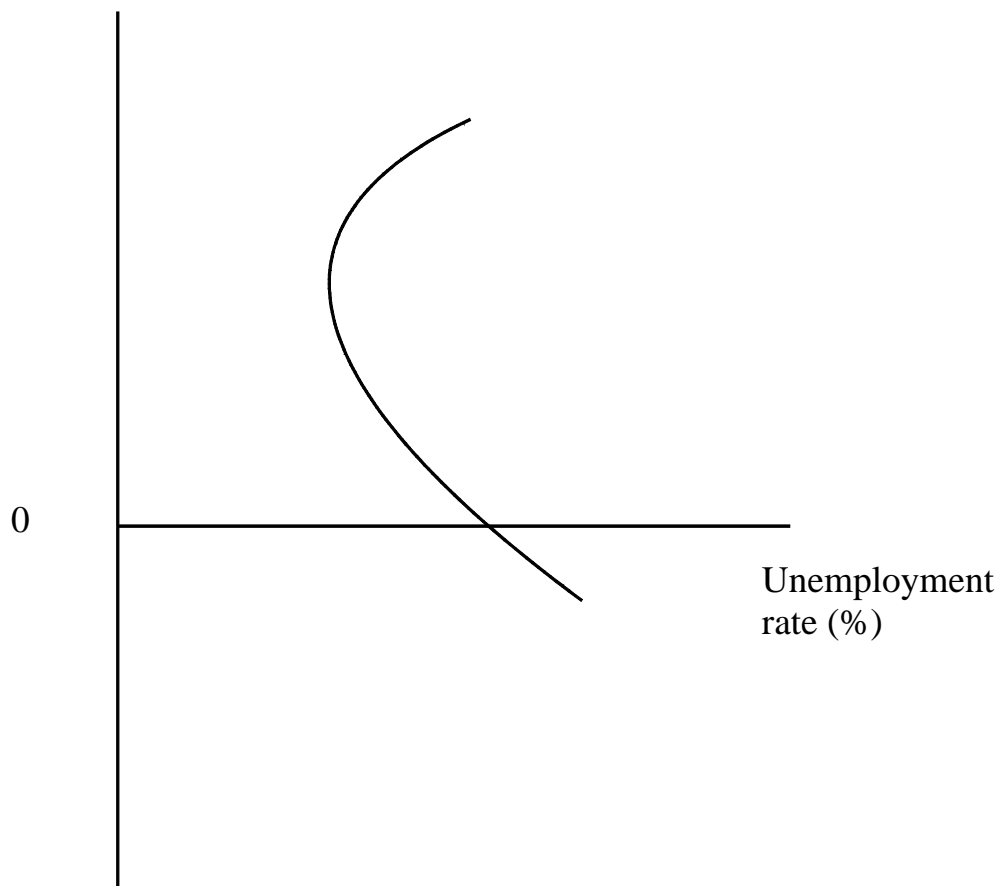


Figure 4 The public finance Phillips curve.

Inflation rate (%)

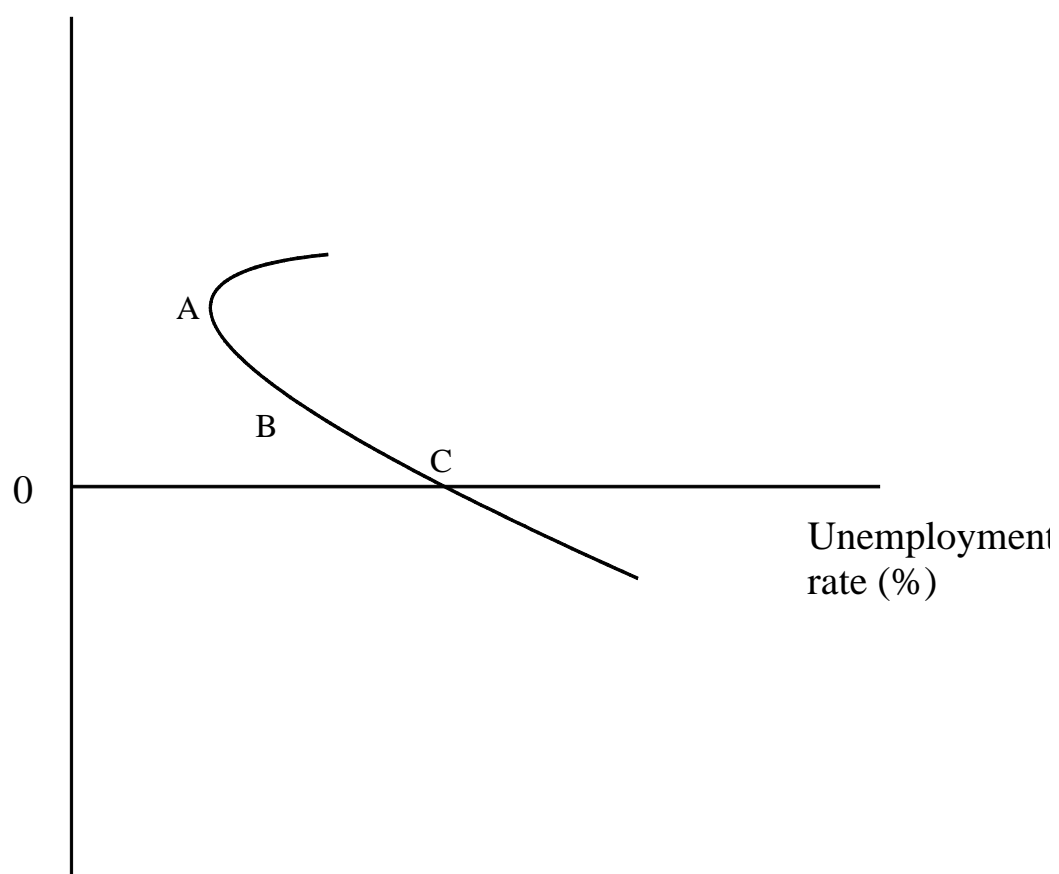


Figure 5 Optimal inflation from the standpoint of labor (A), industrial capital (B), and financial capital (C).