

What remains from the trade-off between inflation and unemployment? (A brief reflection on the Phillips curve)

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Abstract. This paper analyzes the debate that took place in the second half of the 20th century about the relationship between inflation and unemployment. The “discovery” of the Phillips curve, provided a powerful tool for the economic policy. But, as always happens in the history of economic ideas, some years later a hard discussion began between economists. At the end, the discussion was about the effectiveness or sterility of economic policies to change the level of unemployment (and inflation) of the economy.

Although with slightly different features, this is a discussion which is still open to debate among economists.

Keywords: inflation; unemployment; Phillips curve; economic policy; expectations.

JEL classification codes: B2, B22.

[es] ¿Qué queda del trade-off entre inflación y desempleo? (una breve reflexión sobre la curva de Phillips)

Resumen: Este artículo analiza el debate que tuvo lugar en la segunda mitad del siglo XX sobre la relación entre la inflación y el desempleo. El “descubrimiento” de la curva de Phillips otorgó una herramienta muy poderosa para la política económica. Sin embargo algunos años después, como siempre sucede en la historia de las ideas económicas, comenzó entre los economistas una fuerte discusión sobre la misma. Finalmente la discusión era sobre la efectividad o esterilidad de las políticas económicas para modificar el nivel de desempleo (y de la inflación) de la economía.

Aunque con características ligeramente diferentes, esta discusión sigue abierta aun hoy entre los economistas.

Palabras clave: inflación, desempleo, curva de Phillips, política económica, expectativas.

Contents: 1. Introduction. 2. The “discovery” of the Phillips curve. 3. Wage changes and inflation. 4. Economic reality, Neoclassical Synthesis and the Phillips curve. 5. Criticism of the Phillips Curve. 6. Concluding remarks.

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² Keynes (1936), Chapter 24, Section V.

Practical men, who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist².

1. Introduction

The hypothesis of a “trade-off” between inflation and unemployment, which emerged from empirical “discovery”, was the subject of further theoretical rationalizations and provided a powerful tool for the economic policy. An important debate began between economists that believed in the Phillips curve and those who were harsh critics of that hypothesis. Behind this debate a much more relevant question was discussed: Is it possible to change the level of unemployment (and inflation) observed in the economy? The answer is, ultimately, related to the relevance or sterility of economic policies and their ability to affect the “natural course of events”³.

As with many other controversial subjects, contenders were often talking about different questions, which made their answers necessarily different. This situation, which led to different theoretical interests, and the “vision” of those involved in the debate, often obscured the issues under analysis⁴. Moreover, the statements and replies were affected by the evolution of real economic events, proving (once

again in history) the weakness of men’s intellectual efforts to explain the economic reality.

2. The “discovery” of the Phillips curve

The relationship between unemployment and the rate of change of money wages (and then between unemployment and inflation) was incorporated to macroeconomics by A. W. Phillips, as a consequence of empirical research⁵. His work presented a relationship between excess demand (in the labor market) and the rate of change of prices, which would be very important for the “Keynesian” explanation of inflation⁶.

The fundamental conclusion of Phillips was that “... *the rate of change of money wages rates can be explained by the level of unemployment and the rate of change of unemployment...*”⁷

The formula of the relationship established was as follows:

$$\dot{W} = -a + bU \quad \frac{d\dot{W}}{dU} < 0$$

Where: W = rate of change of money wages, U = unemployment rate, and a , b , c = parameters to be estimated.

³ The expression “natural course of events” is used to mean the spontaneous development of economic activity without any intervention of active policies that may “interfere” with adjustment mechanisms of the market.

⁴ “Vision” is used as it was referred by Schumpeter (1954, 41): “*In other words, analytic effort is of necessity preceded by a preanalytic cognitive act that supplies the raw material for the analytic effort. In this book, this preanalytic cognitive act will be called Vision*”.

⁵ Phillips, A.W.H. (1914-1975) was a professor at the London School of Economics and Political Science and at the Australian National University. Among the works that preceded Phillips’s research, the following must be mentioned: Fischer (1926) and Brown (1955).

⁶ The term “Keynesian” has come to be mistaken; there are various reinterpretations of Keynes’s ideas. In this paper “Keynesian” is only used to refer to the ideas that spread, after the Second World War, as the most accepted macroeconomic paradigm among economists: “the neoclassical synthesis”. A different view was provided by Clower (1974) and Leijonhufvud (1968) (disequilibrium approach). More radical perspective belongs to “post-Keynesians” authors. The most salient features of this approach can be seen in Loasby (1976) and Davidson (1983). An excellent summary of the different interpretations of Keynes’s work is Coddington (1976).

⁷ Phillips (1958, 299).

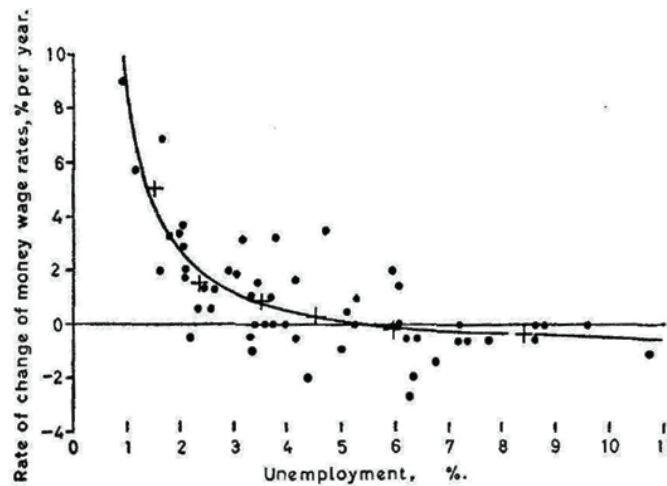


Figure 1. Curve presented by Phillips (years: 1861-1913)

The results of the estimation were⁸: $W = -0,900 + 9,638 U^{-1,394}$

Therefore, the basic proposition that emerged was that there is an inverse and non-linear relationship between the rate of change of money wages and unemployment.

The theoretical justification of this empirical finding corresponded to Lipsey (1960 and 1974). Lipsey, from the analysis of a “micro market”, derived reaction functions of wages to the existence of imbalances between labor supply and labor demand⁹. The second stage of the analytical process was the aggregating of micro-markets in order to obtain the relation of Phillips for the whole economy¹⁰.

With some variations and subsequent refinements, economists in the sixties explained inflation assuming the existence of a stable relationship between the rate of change of money wages and the unemployment rate.

3. Wage changes and inflation

Under what conditions would wage changes lead to inflation?

The answer to that question emerged from the equilibrium condition between the nominal wage and the value of the marginal product of labor in the neoclassical theory:

$$W = P \cdot PMgT,$$

Where: W = nominal wage, P = price of goods and $PMgL$ = marginal product of labor.

So, if money wages are increased at a rate equal to the growth of labor productivity, the general price level will remain constant¹¹.

In the sixties, this relationship between unemployment and inflation was considered of great significance for the design of economic policy and, at the same time, the possibility of a conflict between two desirable objectives of economic policy (full employment and price stability) was accepted.

Following Phillips’s ideas, to increase the employment you must accept a certain degree of variation in the price level; if the goal is to prevent inflation, nominal wages should not be higher than the rate of increase in labor productivity¹².

It is important to note that empirical studies (including Phillips’s original work) showed

⁸ Phillips did not submit a test of significance for the estimated parameters, neither an overall test of the goodness of fit.

⁹ A micro-market can be simply defined as one in which factor mobility is higher than among markets. Please note that the relevant variable is the excess demand in the labor market; but since its measurement is almost impossible (it is the difference between “notional” supply and demand), empirical works accepted that unemployment rate is an appropriate proxy estimate of imbalance in the labor market.

¹⁰ Lipsey shows how the position of the Phillips curve depends not only on the unemployment rate in the micro-markets but also on the degree of dispersion of the fee between them. An explanation of the analytical procedure followed by Lipsey can be found at Blanco (2004). The “rationalizing” contribution and the theoretical development achieved by Lipsey are so important that some authors have suggested that the curve should be called “Phillips-Lipsey curve”.

¹¹ A hypothesis of price formation based on a “mark-up” constantly on the labor cost adjusted for changes in labor productivity is implicitly assumed.

¹² In the sixties, Samuelson and Solow argued, in relation to the economy of the United States, that the “...price stability seems to imply an unemployment rate of 5 ½%...”, while “...an unemployment rate of 3%, seems to imply an annual price increase of approximately 4 ½%.” See Samuelson and Solow (1961), page 402. Hall and Hart. (2012) suggested that Samuelson and Solow

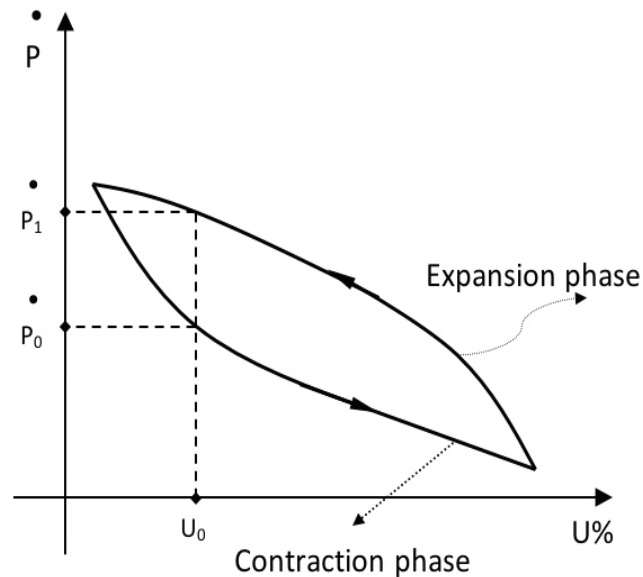


Figure 2. The Phillips Curve and the “loops”

that the observed curves varied according to the economic cycle.

The curve corresponding to a boom lies above the curve corresponding to the contraction phase of the economic cycle¹³.

Thus, “Keynesian” macroeconomics, a theoretical framework originally formulated for a closed economy with fixed prices, could find an interpretation of the dynamics of the inflation process in Phillips’s relation. It should be noted that this change in the Keynesian paradigm became appealing to the neoclassical developments. Neoclassical ideas appeared not only as a necessary complement of Keynesian theory, but also as the relevant theoretical structure capable of supporting it as a special case (the so-called “Keynesian case”)¹⁴.

4. Economic reality, Neoclassical Synthesis and the Phillips curve

The dominant theoretical paradigm after World War II was the “neoclassical synthesis”, and adherents of the new orthodoxy quickly took

on the task of estimating Phillips curves and developed great confidence in the effectiveness of economic policy.

Phillips established this basic relationship, and subsequent developments enriched the explanation with the incorporation of new variables (the distribution of unemployment between different micro-markets, for example). However, this was not the end of the story. In the late sixties the debate about the existence of the “trade-off” between inflation and unemployment was just beginning. Also, as often happens in the history of economic ideas, reality would hit the theory hard: economists needed explanations of the coexistence of inflation and unemployment (“stagflation”). It was then that the voices of those who seriously questioned the Phillips curve began to be heard.

5. Criticism of the Phillips curve

As already noted, the academic prestige of the Phillips relationship in the sixties had a direct relationship with its implications for economic

should have reached different conclusions. Although Hoover (2014) demonstrated, reviewing the paper of Hall and Hart, that “Samuelson and Solow would have no reason to reach any different conclusion”.

¹³ This phenomenon was known as the Phillips curve loops and was associated with the dynamics of hiring labor. At the beginning of the expansion, companies are prudent when hiring labor until the rising demand consolidates. Another explanation of loops based on the relationship between micro-markets with different rates of unemployment and aggregate Phillips curve can be seen in Lipsey (1960). Hines (1971) also suggested an explanation of the phenomenon through a nonlinear relationship between the unemployment rate and the number of vacancies.

¹⁴ For those (as the post-Keynesian school) who consider that the “neoclassical synthesis” betrays the analytical objective of Keynes, the neoclassical rationalization of the Phillips curve is another element of the distortion of the Keynesian message.

policy, and two important conclusions can be summarized:

- a. Sustained inflation was a necessary and sufficient condition to ensure that the economy operates with low unemployment rate¹⁵.
- b. The Phillips curve justified the need for an active role of economic policy.

However, the prestige achieved was fleeting. On the one hand, international economic conditions presented a new and seemingly contradictory phenomenon: inflation and high unemployment rates coexisting together. In addition (and before the “stagflation”), a series of theoretical critics emerged from the ranks of monetarism, incorporating the role of expectations of economic agents.

Some of these critics were Friedman (1968 and 1975), Phelps (1967 and 1968), Lucas (Jr.) (1973 and 1975) and Lucas (Jr.) and Rapping (1969), among others.

5.1 The Phillips Curve and the Role of Expectations

The simple formulation suggested by a Phillips curve with a negative slope, can be presented as follows:

$$(I) P - F(U)$$

Where: P – Inflation rate; U – Unemployment rate; and $(dP/dU) < 0$

Initial criticism was that the relationship was not stable in the long term and that the Phillips curve was vertical in the long term¹⁶. The basis of this statement was given by incorporating the agents’ price expectations into the analysis. In order to clearly explain the argument, it is particularly important to define the concept of a natural rate of unemployment

(NRU)¹⁷. The natural rate of unemployment is the rate that “... is consistent with the real conditions in labor market”. Phelps (1967 and 1968) defined it as an unemployment rate that is consistent with any rate of inflation, when it is fully anticipated by the agents¹⁸.

In other words, the natural rate of unemployment would be relevant to a situation of Walrasian general equilibrium, or the level corresponding to a situation of full employment¹⁹.

If the actual unemployment rate was below the natural rate, then there would be an upward pressure on wages. But, unlike the original approach (that was referring to money or nominal wages), we now refer to real wages. More rigorously, the relevant variable is the real wage expected by the subjects to attend the market. Thus, the function must relate the unemployment rate with the rate of change of money wages, minus the rate of inflation expected by the agents.

$$\text{That is: } \dot{W} - \dot{P}^e = F(U)$$

$$\text{And, therefore: } \dot{W} = \dot{P}^e + F(U)$$

Or, in terms of the relationship between inflation and unemployment: $(II) \dot{P} = \dot{P}^e + F(U)$

Equation (II) introduces the distinction between the observed inflation rate and that anticipated (or expected) by the agents.

That is, for each level of expected inflation, there will be a relationship between inflation and unemployment. And this relationship is valid as long as the agents do not change their expectations about the future course of inflation.

Assuming that the process of expectations formation is adaptive, meaning that agents revise their projections under some proportion of the forecast error in prior periods, adjusting expectations in period t is:

$$\dot{P}^e_t - \dot{P}^e_{t-1} = (1 - \gamma)(\dot{P}^e_{t-1} - \dot{P}^e_{t-2})$$

¹⁵ Mid-twentieth century, in Latin America, a theoretical current known as “Latin American structuralism” questioned the advice of some international organizations (like IMF) that recommended measures that increased unemployment as a way to lowering inflation. “Structuralists” developed alternative (non-monetary) explanations of Latin American inflations. For example: Olivera (1964), Presbich (1949) and Sunkel (1958). Another structuralist explanation is provided by the Scandinavian model. See Frisch (1983) pages 163-186

¹⁶ Friedman (1968).

¹⁷ Friedman (1968) was the first to use the term “natural rate”.

¹⁸ Phelps’s thesis on the natural rate arises from microeconomic analysis of the labor market, while Friedman uses the monetarist postulate of the neutrality of money. However, both are consistent analysis of the consequences of the existence of a “natural” level of unemployment.

¹⁹ Regarding the definition of the natural rate of unemployment, there has also been a degree of semantic ambiguity that did not help to clarify the debate. An interesting work by Rogerson (1977) described a dozen different definitions of “natural rate” used by different authors.

Therefore:

$$\dot{P}_t^e = (1 - \gamma)\dot{P}_{t-1} + \gamma \dot{P}_{t-1}^e$$

In general:

$$\dot{P}_t^e = (1 - \gamma) \sum_{j=1}^{\infty} \gamma^{j-1} \dot{P}_{t-j}$$

So, the expected inflation rate will be a function of distributed lags where weighting parameters are geometrically decreasing as you go back in time²⁰. Criticism of Friedman, from introducing expectations, is displayed in Figure 3.

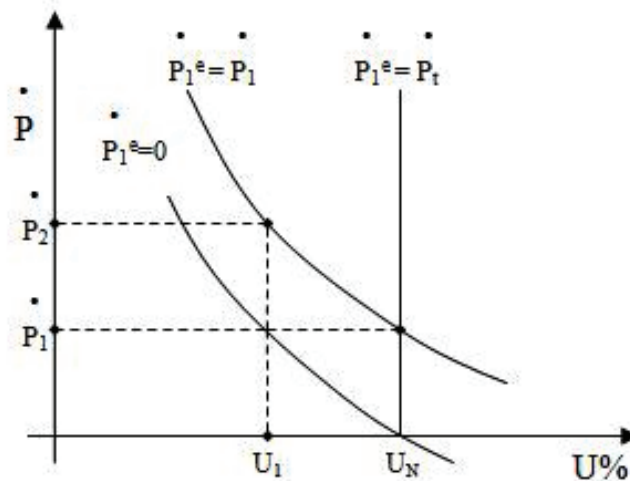


Figure 3. The Phillips Curve and the role of expectations

Suppose the economy represented in the figure 3 never recorded changes in prices. Under these conditions, and assuming a formation process of adaptive expectations, it is reasonable to think that the agents' expected inflation rate for the period will be zero: $\dot{P}_1^e = 0$

The curve corresponding to the expected inflation rate will then determine an unemployment rate U_n (natural rate). Now, if policy makers resolve to reduce unemployment to the inflation rate would be \dot{P}_1 . However, after some time, the agents revise their price expectations (adjusting to actual inflation) to $\dot{P}_2^e = \dot{P}_1$ and a new Phillips curve is set, where unemployment tends to rise to U_n . This means that if those responsible for economic policy persist in their attempt to keep unemployment below the natural rate U_n that will accelerate inflation again. The lower unemployment rate can be sustained only with growing inflation.

Friedman called this postulate "the accelerationist hypothesis". This approach to the problem quickly led to the conclusion that the

level of employment was a function of the difference between the observed and the expected inflation rate (or unanticipated inflation).

The causation was reversed. For economists who adopted this new perspective, the inflation rate was no longer dependent on the level of unemployment; the unemployment is now a function of the difference between anticipated and observed values of the inflation rate²¹.

$$(III) U = U_n + \Phi(P - P^e)$$

The logical sequence continues with the statement that, in the long run, agents correctly anticipate the inflation rate (unless an acceleration of inflation permanently surprises the agents), and the expected rate of inflation will converge to observed values. The Phillips curve will become a vertical line at the level of the natural rate of unemployment.

In short, introducing expectations, it was argued that the Phillips curve with a negative slope is only consistent in the short term; the

²⁰ The formation of adoptive expectation was first introduced by Cagan (1956)

²¹ So, the difference between the unemployment rate and the natural rate of unemployment is a function of "unanticipated inflation."

long run relationship vanishes mutating into a vertical line at the level of the natural rate of unemployment. The obvious conclusion was that all active economic policy that attempts to permanently reduce unemployment in the long run is condemned to failure because it either launches the economy on a path of rampant inflation or will not reduce unemployment below its natural level²².

5.2 The “New Classics” and the Phillips curve

A second group of critics of the “trade-off” emerged from the “new classicism” and their models of “rational expectations”²³.

The basic proposition of the rational expectations hypothesis can be stated as follows: “the future value that economic agents expect for a particular variable is exactly the same as the relevant economic theory predictions for that variable”.

In other words, the hypothesis holds that economic agents form their expectations “as if” they knew the “true” model (i.e. the most appropriate model to predict the value of the variable in question)²⁴.

Lucas (Jr.) and Rapping (1969), Lucas (Jr) (1973), Sargent (1973) and Sargent and Wallace (1973, 1975 and 1976) extended rational expectations to macroeconomic analysis and they postulated the impossibility (under conditions of perfect information), that active policies be able to reduce unemployment below the natural rate.

The conclusion was the same: the only way to reduce the unemployment rate below its natural level is to generate unanticipated

inflation. But it is impossible to do so with rational expectations²⁵. Any systematic rule of economic policy that attempts to reduce unemployment is information that is used efficiently by agents, who will adjust their behavior sterilizing the effects of economic policy. This argument of the “new classics”, that goes beyond the discussion of the slope of the Phillips curve, serves the old monetarist proposition that the real product is independent of the nominal quantity of money²⁶.

The basic monetarist postulate that the real values of the economy are determined independently from monetary aggregates has a very important place in the work of the advocates of rational expectations²⁷.

But the “new classics” are more critical than the “old” monetarists because, under perfect information or certainty, they deny the existence of the trade-off between inflation and unemployment even in the short term²⁸.

Combining the assumption of rational expectations with the concept of the natural rate of unemployment leads to the formulation of the proposition called the “policy ineffectiveness” of the “new macroeconomics”. Under such circumstances, the only possible difference between the natural rate and the observed rate of unemployment will be a stochastic term²⁹.

As already noted, objections emerged regarding the existence of a trade-off between inflation and unemployment in the long run, as a result of considerations on the formation of agent expectations about the future growth of price level. Going back to equation (II):

$$(II) \dot{P} = \dot{P}^e + F(U)$$

²² To be fair to the “naturalistic”, it must be said that the natural rate of unemployment should not be interpreted as a fixed minimum level of unemployment. Reductions can operate, for example, as a result of improvements in the market information, suppression of institutional constraints, etc. Cf. Knicht (1987).

²³ The hypothesis of “rational expectations” was first formulated by Muth (1961) to determine equilibrium and stability conditions in an isolated market.

²⁴ Adopting the assumption of rational expectations doesn’t mean to assume “perfect foresight”. There may be random prediction errors or information failure, but systematic prediction errors are not allowed.

²⁵ It is clear that the ability to “catch” the agents with random decisions cannot be considered seriously.

²⁶ The prescription of monetary policy that takes this statement is the adoption of a constant growth rate of the money supply, as proposed by Friedman in the fifties. However, it should be noted that Friedman’s argument was based on the impossibility of knowing the magnitude of the impact and the length of the remaining effects of monetary policy. This means that, although the recommendation of monetary policy is the same (the rule of constant money growth rate), the justification is different.

²⁷ This statement is consistent with the renowned “dichotomy” of classical economists for whom money was just a “monetary veil”.

²⁸ Phelps (1971), in the famous “island parable”, considered that the existence of “trade off” was tied to information problems in the labor market.

²⁹ Other questions arise when explaining systematic movements in the observed unemployment rate during different phases of the economic cycle. The attempt to explain the cyclic changes in the observed unemployment rate would require finding other reasons. This problem is often referred to in the literature as the “dilemma of persistence.” Cf. Lucas (Jr.) (1975)

The discussion can be summarized by saying that those who support the long-term vertical curve consider the variable \dot{P}^e enters the equation weighted by a parameter whose value is equal to one. For supporters of a curve with negative slope, the value of this parameter is less than one.

$$(IV) \dot{P} = \Phi \dot{P}^e + F(U) \quad 0 \leq \Phi \leq 1$$

If $\Phi = 1$, equation (IV) shows a long term unstable relationship between inflation and unemployment. The agents would “learn” to anticipate the future value of the inflation rate correctly and Phillips curve would vanish.

If $\Phi < 1$, equation (IV) implies that “long-term Phillips curve” would be steeper than “short-term Phillips curve”, but it would keep the negative slope.

Finally, if $\Phi = 0$, the Phillips curve is the same in the long or short term.

However, beyond the value assumed by the parameter, a further consideration of the theoretical meaning of it must be done.

Monetarists, followers of the natural rate hypothesis, interpreted coefficient as an indicator of the presence or absence of money illusion. As economic agents cannot be permanently “fooled”, monetarists think that the long-term value of the parameter must be necessarily one.

However, a lesser value can be interpreted in another way too. Agents without money illusion perhaps could not be able to fully accommodate their behavior to their expectations. This means that, even admitting that agents correctly anticipate the future value of the inflation rate, it might be reasonable to believe in the existence of a Phillips curve in the long term with a negative slope, as a result of the existence of restrictions that prevent agents from adapting their behavior to their expectations (*v.gr.* market imperfections, existence of long term contracts, etc.). The possibility of assuming that the parameter that weighs the expectation has a cyclic behavior is also worth noting. In boom periods, approaches 1 and vanishes the “trade-off”, while it resurfaces during depression and approaches 0³⁰.

5.3 NAIRU and “Hysteresis”

As expected, in response to criticism from monetarism, some considerations were formulated to “save” the existence of a trade-off and to justify active policies. The Non-Accelerating Inflation Rate of Unemployment (NAIRU) came to replace the concept of Natural Rate of Unemployment. NAIRU can be defined as the rate of unemployment which will not “accelerate the rate of actual inflation”³¹.

This replacement avoids the fatality and inevitability connotation that the term “natural” suggests and incorporates considerations of market imperfections, supply constraints, and other characteristics of non-competitive markets.

In general, NAIRU models are characterized by the following features:

- There is just a single rate of unemployment that is consistent with a constant rate of inflation (NAIRU).
- When the observed rate is the NAIRU, there is equilibrium in the sense that no change in inflation although the labor market is not in equilibrium³².
- The level of the NAIRU is affected by both economic and institutional factors (for example, changes in the forms of wage bargaining)³³.

The second argument that allows the justification of active policies (developed with the concept of NAIRU) is the hysteresis phenomenon of unemployment rate. Like in the original version of the trade-off, the NAIRU estimations often shown that this rate appeared affected by the observed unemployment rate.

So, if the NAIRU is not a structural parameter of the economy and can be affected by the policy, then active policies regain the importance that it seemed to lose after criticism of “new classics.”

This phenomenon, which is nothing but the tendency of the unemployment rate of “long-run equilibrium” to converge with the level of

³⁰ Cf. Frisch (1977, 1296).

³¹ Among the most prominent authors who developed this concept models are Modigliani and Papademos (1975), Layard, Nickell and Jackman (1991).

³² This way of expressing is an imprecision only justified by the fact that the NAIRU should be interpreted not as an equilibrium rate but as the required rate that not affect the actual inflation rate.

³³ Solow (1992) has noted the “social features” of labor market, unlike other markets in the economy.

the observed or effective values, has attracted the attention of economists; It was possible to legitimize active policies to lower the unemployment once again³⁴.

Many studies have showed that if the NAIRU is influenced by the observed unemployment rate, the postulate of ineffectiveness of economic policy can no longer be sustained³⁵.

These developments of the NAIRU and the hysteresis phenomenon were often associated with the so-called New Keynesian economics, though there are similarities in the structure of the models of the NAIRU with the neoclassical synthesis.

6. Concluding remarks

The main conclusion to be drawn from the evolution of economic ideas regarding the existence of a relationship between inflation and unemployment is that the incorporation of price expectations demonstrated that the primitive version of the Phillips curve was too simplistic. Implicitly, the relationship assumed a naive behavior of economic agents.

Monetarists contributed to demonstrate the shortcomings and failures of the Phillips curve, and these were one of the favorite targets of the attacks of the monetarist “counter-revolution”. That is why it is said that “... *the monetarist counterrevolution has complied with a scientific purpose: to challenge and discard the huge amount of intellectual banalities that accumulated after a successful ideological revolution in economics*”³⁶.

Another obvious conclusion is that which concerns the methodological difficulties of a hypothesis that emerges from an empirical study and whose “rationalization” is presented as an “ex-post” construction. This methodological deficiency is what has led some authors to state that the estimated natural rate (or NAIRU) is not theoretically acceptable. James Galbraith wrote that “... *it is probable that a theoretical argument that rests on a non-theoretical basis will have problems sooner or later*”³⁷.

The controversy allowed the visualization of the shortcomings of the first formulations of the Phillips curve. However, the extreme version of rational expectation models may also lack realism. The possibility that economic agents can correctly anticipate the future value of a variable such as inflation requires a number of conditions that, in the real world, do not exist. And even admitting this hypothesis, it still needs to be demonstrated that agents can act without restrictions, according to their expectations.

Moreover, many studies show that the phenomenon of hysteresis would challenge the character of “structural parameter” of natural rate (or NAIRU) and have reopened the possibility of active policies³⁸.

In general, all economists agree that, in the long run, the Phillips curve is steeper and could be vertical, but perhaps there is an implicit disagreement regarding the definition of the concepts of short and long term. Implicitly, critics of the Phillips curve assume such a speed in the adjustments (the agents “learn” almost instantly) that the policy maker should completely ignore the trade-off between inflation and unemployment.

In other words, monetarists are so confident about automatic adjustment mechanisms that they perceive that the macroeconomic equilibrium is round the corner. The Keynesians believe that economic policy must act to make the necessary adjustments. This different perception of the speed of adjustment is, ultimately, a consequence of different definitions of short and long run. Tobin was very clear about this question: “*Maybe Laidler and Friedman think markets adjust to macroeconomic shocks... faster than I think they would*”³⁹.

The debate on the Phillips curve is almost equivalent to the discussion about the usefulness or sterility of economic policy to modify the observed levels of the variables that constitute its objectives (such as unemployment or inflation). That debate is still open, and the answer that gives each theorist depends on the priorities that constitute his vision for macroeconomics.

³⁴ Economists have distinguished between pure and relative hysteresis. In the first case, where the variation (and not the level) of unemployment and prices fully affects the NAIRU, there may be more than one long-term value of the NAIRU.

³⁵ Cross (1988).

³⁶ Johnson (1971).

³⁷ Galbraith (1997).Page 94. Stiglitz (1997) has also raised a critical approach to the idea of the natural rate.

³⁸ Usabiaga Ibáñez and Gómez García (1996).

³⁹ Tobin (1981) p. 56.

For example, some years ago, Professor Lucas stated that “*Taking U.S. performance over the past 50 years as a benchmark, the potential for welfare gains from better long-run, supply side policies exceeds by far the potential from further improvements in short-run demand management*”⁴⁰. In other words, the priority for macro-economists must be the long-term performance of the economy and to

provide for “... *people with better incentives to work and to save, not from better fine tuning of spending flow*”⁴¹.

But perhaps Lucas’s vision is too unattractive for those who still think that “*Economists set themselves too easy, too useless a task, if in tempestuous seasons they can only tell us, that when the storm is long past, the ocean is flat again*”⁴².

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⁴¹ Lucas (Jr.) (2003).p. 1.

⁴² Keynes (1923) p. 80.

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