

NAIRU, Unemployment and Post Keynesian Economics

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Abstract

The purpose of this paper is to present the disadvantages from the use of NAIRU as the key instrument of monetary-policy making to restrain the upward tendency of unemployment. It argues that the development of NAIRU, the most widely known and used model in macroeconomic analysis, although has changed the whole structure of macroeconomic theory and policy significantly, its adoption is consistent with unemployment, instead of economic activity expansion. By setting at the center of analysis the persistently high levels of unemployment and questioning the NAIRU concept itself, this paper aims at signifying the incorrectness of the assumptions upon which NAIRU rests and determines employment policies, though are regarded as a priori given.

Keywords: NAIRU, Unemployment, Capital, Capacity Utilization, Post Keynesian-Kaleckian economics

JEL Classification: E22, E24, E12

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1. Introduction

Stemming from developments in mainstream macroeconomic theory after the collapse of neoclassical-Keynesian synthesis, the concept of Non-Accelerating Inflation Rate of Unemployment (NAIRU hereafter) has been the key instrument of monetary-policy making. By means of inverse relation between inflation and growth levels, policymakers simplify their targets by setting inflation as the overriding objective of monetary policy and addressing unemployment by focusing on flexibility issues to clear the labour market so as to establish a non-inflationary long run equilibrium level of unemployment (e.g. Layard et al., 1991; Ball and Mankiw, 2002). In this manner, the concentration on inflation targeting is thought to be the most appropriate way for expanding economic activity (Fischer, 1993; Romer and Romer, 1999; Easterly and Fischer, 2001). The treatment of unemployment as a structural factor within inflation targeting regime however, allows its positive consequences on economic activity to be realized only in theoretical grounds (Jekinson, 1987; Sawyer, 1987, 1998; Arestis and Sawyer, 2006).

Thus, the widespread adoption of NAIRU framework among economists and the unexpected consequences of its implied policies seem to be the main reason for which mainstream economists are incapable of pushing economies away from continuous recessions and unemployment expansions. In these grounds, the presence of any unemployment can be faced by changes in labour market policies and institutions; some of these are represented by softening minimum wage restrictions, taxes on labour and restrictions on hiring and discriminatory or other impediments to hire either by reducing or eliminating unemployment benefits by upgrading education and training of workers and perhaps by offering subsidies to new hiring that will be examined below (e.g Layard et al. 1991; Baker et al., 2004; Glyn et al., 2004). All these theoretical suggestions are opposed to what actually happens, since in practice labour market policies set an unfriendly environment for workers regardless of whether there is an unemployment protection system or not. At this basis, Post Keynesian economists make a step beyond, question the assumptions upon which NAIRU concept is based and introduce a more realistic approach. Besides, in their view the only effective way for cutting unemployment down is the adoption of

traditional Keynesian policies (e.g. Sarantis, 1993; Arestis and Sawyer, 2003; Arestis et al., 2007; Stockhammer; 2004a, b, 2007).

In these grounds and given the new Keynesian criticism about the NAIRU framework², by setting the magnitude of unemployment at the centre of our analysis the main concern of this paper is: firstly, to document the adverse effects of the currently adopted supply side framework on unemployment issues; secondly to signify the correctness of demand side approach and outline the fundamental ideas, arguments and propositions, which have been developed within the Post Keynesian tradition and refer to the acceleration of economic activity.

The remainder of this paper is structured along the following lines. Section 2 examines the a priori given assumptions upon which NAIRU rests and their implications, while Section 3 contradicts the adoption of inflation targeting regime by providing the core of Post Keynesian framework within which more realistic targets are introduced. Finally, Section 4 summarizes and concludes.

2. Aggregate Demand and NAIRU

Since the late 1950s the relation between unemployment and inflation is at the center of macroeconomic theory and policy. This relation is represented by the recognized as a deterministic law for macroeconomic theory, the well known Phillips curve that has been rearranged until its augmented with expectations form to be used for NAIRU estimations³. Briefly, the original Keynesian Phillips curve (Phillips, 1958) was enriched with microeconomic foundations within new classical framework (Friedman, 1968; Phelps, 1967, 1968), while after being readjusted within new Keynesian

²The new Keynesian ‘insight’ criticism about the NAIRU concept refers to technical issues of NAIRU estimations. Its starting point is that NAIRU level itself is an empirical estimation that is mainly determined by the adopted environment and its characteristics (i.e. country and period sample) as well as the employed method for estimation. Essential role in its determination also plays the specification and the form of expectations (Solow, 1986; Ball and Mankiw, 2002); the number of lags (Gordon, 1997; Estrella and Mishkin, 1999) and even the method of unemployment and inflation measuring that is adopted (Nickell, 1990; Stock and Watchon, 1996). It should be also mentioned that NAIRU estimations are affected even by the assumptions about its variability or constancy over time and its uniqueness (Gordon, 1997; Staiger et al, 1997a, b; Stiglitz, 1997). More informative analysis in Bozani and Drydakis (2011a; b).

³Our analysis refers to the determination of NAIRU with respect to the use of the augmented with expectations Phillips curve. It should be mentioned that in recent literature the New Keynesian Phillips Curve (NKPC) gains grounds (Mankiw, 2001; Karanassou and Snower, 2002).

framework led to the development of NAIRU (Modigliani and Papademos, 1975)⁴.

In the conventional literature, the general form of the augmented expectational Phillips curve that is being used for NAIRU estimations is given as⁵:

$$(1) \pi_t = b_1\pi_{t-1} + b_2(U - NAIRU) + \varepsilon_t$$

where π_t, π_{t-1} : inflation and lagged inflation or an average of past inflation rates

U : unemployment

ε_t : error term that includes other factors that might affect the inflation rate

b_2 : a parameter whose value is expected to be below zero, ($b_2 < 0$)

b_1 : the coefficient for the value of lagged inflation rates that in new Keynesian literature is assumed to be equal to unity

By assuming the equality $b_1 = 1$ and ignoring all the other factors that possibly affect inflation, eq. (1) can be rewritten as:

$$(2) \Delta\pi = b_2(U - NAIRU)$$

Equation (2) implies that economies are characterized by constant inflation rate ($\Delta\pi = 0$) when there is an equality between levels of actual unemployment and NAIRU ($(U - NAIRU) = 0$); whereas due to the implied inverse relation between inflation and unemployment, high unemployment rates are assumed to be consistent with inflation reduction and vice versa. This is simple the NAIRU mechanism.

The development of the new Keynesian NAIRU concept was believed to be the most appropriate way for facing the persistently high unemployment levels in the mid 1970s, the natural unemployment rate and the accelerating hypothesis with the demand management policies could be combined. At its center is set the bargaining interpretation of the labour market, while the level of unemployment is tied to the effective demand on the goods markets; as long as aggregate demand reacts to inflation changes, there is a feedback from the goods to the labour market that

⁴ More detailed analysis in Bozani and Drydakis (2011a, b).

⁵ See Eisner (1996).

determines the NAIRU level itself. In particular, the philosophy of NAIRU with respect to the implied inverse relation between inflation and unemployment, suggests the consistency of high unemployment rates with inflation reduction and vice versa.

Nowadays the use of NAIRU as a policy driver is consistent with the dominated inflation targeting regime, which aims at taming inflation and inflationary expectations so as unemployment to be kept at its natural rate. Among the others, i.e. discipline, accountability, transparency, credibility, flexibility and legitimacy (Bernanke and Minshkin, 1997; Debelle, 1997), the most significant advantage of this regime is believed to be the compatibility of low inflation with high growth levels, even during the expansionary phase of the economic cycle (Debelle, 1997). In these conditions any 'unemployment gap' between NAIRU and actual unemployment rate can be suppressed through adjustments in labour market policies, institutions and imperfections (Layard et al, 1991; Nickell, 1997, 1998; Blanchard and Wolfers, 2000; Fitoussi et al. 2001; Baker et al. 2004; Glyn et al. 2004).

In practice, the applicability and the correctness of these theoretical suggestions is limited since the treatment of NAIRU as a strong indicator suggests implicitly the presence of unemployment in economies, unless people are prepared to accept an accelerating inflation during the short run and taste its stimulating effects in the long run (Sawyer, 1998, 2001, 2002; Stockhammer, 2004a, b, 2007). Although a recession-free economy is more preferable than a strictly disinflationary one, the adherence on NAIRU concept permits policymakers to achieve easily their policy targets in terms of inflation. This is explained by the purely supply side character of the NAIRU concept that abstracts any role for aggregate demand and income distribution, and implies the determination of unemployment in harmony with the inflation target. But constrains against the presence of aggregate demand and income distribution that can affect economic activity are imposed essentially by the NAIRU assumptions.

More precisely, with respect to the core assumptions of the simplified mechanism of NAIRU: (a) both current and past inflation at equilibrium generate equality between future and actual inflation; and (b) the presence of a particular non-accelerating inflation rate of unemployment at any time generates equilibrium, unemployment is being treated only as a second order priority (see Eisner, 2003). According to these,

the implied consistency between non-accelerating unemployment with unchanged inflation is ensured by the behaviour of any inflation level as somehow self-perpetuating and the presence of a unity coefficient of the variable of lagged inflation⁶ in the augmented expectational Phillips curve (equations (1) and (2)) equation (Jekinson, 1987; Eisner, 1995, 1996).

Additionally the preconditions for money and productivity neutrality in the long run in order NAIRU to stand, restrict any inflation acceleration or deceleration and they contemporaneously ensure the constancy of income distribution between wage (workers) and profit (capitalists) shares (Sawyer, 1998, 2001, 2002, 2004; Arestis and Sawyer, 2003)⁷. As a result, not only the NAIRU level itself is set to be more than a portrayed level (Setterfield et al., 1992), but also actual unemployment is allowed to be reflected on NAIRU levels (Sawyer, 1997a); in other words a purely supply side environment is created that allow policymakers to achieve their targets. In Keynes' (1936) view however, only the non-monetary economies can be characterized by certainty in order policymakers to be able to correct price forecasting and expectations; further, the presence of neutrality in entrepreneur or monetary economies seems to be rather unacceptable (Davidson, 1998).

The absence of any role for demand side (capital and labour demand), in particular the capital-output ratio and variations of aggregate labour supply or technical progress variations, in affecting economic activity and unemployment is also ensured by the assumed dependency of the short run output level on the variable level of labour, considering the capital stock as given. Usually these suggestions are reflected on the unity elasticity of substitution between capital and labour, i.e. unless the production function is Cobb-Douglas (i.e. Layard et al., 1991)⁸. In subsequence, the conjunction of this assumption with the ex ante equality between NAIRU and the full levels of employment and capacity utilization at any point declare the absence of any

⁶For cases where the augmented expectational Phillips curve includes terms of lagged unemployment, the coefficient of lagged inflation term is required to be negative (Jekinson, 1987).

⁷Despite the significance of neutrality conditions, there is no mechanism in Phillips curve equation for correcting automatically any possible expectation error (Jekinson, 1987; Sawyer, 1987; Arestis and Sawyer, 2006).

⁸The ignorance about labour unions' ability to adjust their behaviour during the bargaining process with respect to their force or the level of participation on labor supply, or even more their intention to ensure that additional workers will be absorbed in employment level without changing the level of unemployment rate, is the reason for the presence of this assumption (Rowthorn, 1999; Sawyer, 1998).

compatibility between changes in capacity and constant inflation (Arestis and Sawyer, 2003; Sawyer, 2001, 2002; Setterfield, 1996).

Undoubtedly, the combination of these assumptions provides the required conditions for the presence of NAIRU and the implied determination of employment policies congruent with the appropriate adjustments in labor market rigidities and institutions only. In contrast to claim, real world economies are characterized neither by any presumption about predetermined levels and the consistency of actual employment and capacity utilization levels with their full, nor by any automatic mechanism that pushes economies towards them (see e.g. Arestis and Sawyer, 2003). Economies usually operate under excess productive capacity and employment levels (Amadeo, 1986a, 1986b; Sawyer, 2002; Arestis and Sawyer, 2003; Setterfield, 2003); are characterized by a below unity elasticity of substitution (Rowthorn, 1999; Sawyer, 1998, 2001)⁹ and are affected by capital stock and investment in new productive capacity without causing additionally inflationary pressures (Arestis and Mariscal, 1997, 1998, 2000; Sawyer, 1998, 2002; Rowthorn, 1999; Arestis and Sawyer, 2004b; Atesoglu and Smithin, 2006; Palacio Vera et al., 2006).

Needless to say that the introduction of demand side and income distribution variables would change the whole structure of NAIRU concept and provide a more realistic basis for economic expansion, while it would also raise questions even about its existence. For instance by employing demand side variables for measuring unemployment (e.g. Smithin, 2002; Atesoglu and Smithin, 2006), Post Keynesian literature provides much evidence that puts forward a different specifications for long run Phillips curve by setting it either horizontal (e.g. Eisner, 1995, 1996; Palacio-Vera, 2005) or even upward (e.g. Kriesler and Lavoie, 2005). In addition, the ad hoc convexity (short run) and linearity (long run) assumptions that characterize the relation between inflation and unemployment are rejected (Eisner, 1995; Sawyer, 1987). Besides in NAIRU grounds, linearity stands due to the dynamic form of Phillips curve equation (Fair, 1997, 1999) and the employed unemployment

⁹According to Rowthorn (1999) there are 33 econometric studies that provide evidence in favour of the presence of an elasticity of substitution between labour and capital can hardly be equal to or above unity. In mainstream grounds, a below unity elasticity of substitution would be raised because of: (a) shifts in distribution of rents; (b) technological changes; (c) plausible mark up increases due to changes in the labor markets; (d) a possible decline in the labor hoarding or other policies that concern the labor market in continental countries usually (Blanchard and Katz, 1997).

observations that are set above their natural rates (Sawyer, 1987; Eisner, 1995)¹⁰. Furthermore, the consideration of the behaviour of actual unemployment rather than the actual behaviour of other variables when unemployment lies at relatively low levels, explain why unemployment increases above NAIRU are coincided with rapid inflation reduction though unemployment reductions are followed by slow and relatively low inflation acceleration (Sawyer, 1987).

Clearly the NAIRU framework and its policy implications for facing unemployment are characterized by low degree of accuracy. The consideration of active demand side factors would affect the general economic activity positively if not dampening the negativities stemming from inflation targeting regimes. Although, such changes do not guarantee the introduction of an unproblematic basis for making policy decisions, it certainly provides more realistic suggestions unless the changed framework is well defined (Sawyer, 1998).

3. NAIRU as an employment targeting regime

Bearing in mind the inability of mainstream policies in facing the general economic depression, it becomes emergent the adoption of more effective and realistic solutions. Reasonable, we consider the demand led economics or alternatively the Post Keynesian approach that concerns the issue of establishing high levels of demand in order to ensure high employment that may, but not necessarily, develop full employment and expand economic activity. Besides, in accordance with Kalecki: “...under a regime of permanent full employment, the ‘sack’ would cease to play its role as a disciplinary measure” (1943, p.3).

The hallmark of Post Keynesian framework is justifiably the effective aggregate demand and its components (investment, consumer expenditures as well as governments expenditures and taxation when governmental intervention is allowed) that are assumed to determine economic activity essentially (Kalecki, 1933; Keynes, 1936)¹¹. In this manner Say’s Law is valid in reverse, while the long run demand-led

¹⁰ It is argued that the core inflation is higher when unemployment is above NAIRU but lower when is below it (Eisner, 2003).

¹¹The distinction between Keynes’ and Kalecki’s approach is the fact that for Keynes’s the level of the independent variable of investment is determined by the long run expectations of entrepreneurs, while consumption is partially induced. On the other hand, Kalecki suggests the independency of investment

equilibrium becomes an ongoing process that takes into account the supply side effects on economic activity too (Lavoie, 2003; Setterfield, 2003). Additionally, the assumed money endogeneity allows both monetary and real magnitudes to be affected either in short and long run periods (e.g. Moore, 1989)¹². Hence, as long as ‘*money plays a part of its own and affects motivates and decisions*’ (Keynes, 1936), inflation is conceptualized as a real magnitude that is explicitly affected by the struggle for income shares; suggestions that are reflected on the ‘*conflict inflation theory*’ (Rowthorn, 1977).

Consequently, the structure of macroeconomic unemployment policies changes; there is a demand level consistent with a constant inflation rate that in conjunction with the excess capacity ensure a more equitable income distribution, conditions that reinforce the possibility for economic expansion. Besides, with respect to Kaldor’s assumption that: “*capitalists earn what they spend and workers spend what they earn*” (1956, p. 96), economic activity is possible to be accelerated as long as workers are assumed to be characterized by a higher propensity to consume relative to capitalists¹³. Generally, in these conditions the coexistence of excess capacity and unemployment operates as a device for reducing inflationary income conflict, so as employment to be accelerated without cost increases (Rowthorn, 1999; Sawyer, 2002)¹⁴.

Regarding thereby as given income distribution and the levels of autonomous aggregate demand as well as the assumption about a positive relation between real wages and labour demand, the general economic activity is determined by the effective demand during the short run. In the long run effective demand is employed for determining prices relative to wages that in turn are reflected on income distribution and capacity utilization levels (Sawyer, 2002; Setterfield, 2003; Arestis and Sawyer, 2003).

from current output but consumption’s dependency on each income class consumption propensity. See Lavoie (2006) and Sawyer (2007a).

¹²In Post Keynesian theory there are two approaches about the assumption of money endogeneity: the New Consensus School and the Keynesian endogenous approach (Arestis and Sawyer, 2004a). The fact that money supply is being treated as an endogenous variable, suggests that it cannot be considered as a causal element in determining the behaviour of effective demand (Lavoie, 2006).

¹³The implied distinction of income shares (wages and profits) seems to perform better than others suggested by alternative theoretical approaches (Lavoie et al., 2004).

¹⁴Excess capacity conditions are coincided with constant instead of decreasing returns (Lavoie, 2006), while it is usually assumed the constancy of the average direct costs that capitalists face (Arestis and Sawyer, 2003).

All these have persuaded Sawyer (2002, 2007a) and Arestis and Sawyer (2003) to define the equilibrium level as the *'inflation barrier'* that was developed by Robinson (1937,1962) and suggests the path dependency of employment and more generally of economic activity in both the short and the long run. It is argued that Robinson's definition can be regarded as an earlier version of NAIRU, since: "*in any given conditions of the labour market there is a certain more or less define level of employment at which money wages will rise*", (Robinson, 1937, p. 4, quoted by Stockhammer, 2004a).

Despite the possible similarities between NAIRU and inflation barrier, there are many differences among them; the most essential concerns the definition of inflation barrier in terms of endogenously determined capacity that allows demand to have an active role (e.g. Davidson, 1998; Sawyer, 2001, 2002; Stockhammer, 2004b, 2007). The introduction of aggregate demand and capacity utilization within the NAIRU framework implies that each level responds to specific endogenously determined levels of aggregate demand, output and employment (Sawyer, 1997a,b, 2001, 2002; Arestis and Sawyer, 2004a). Furthermore, the dependency of inflation barriers on changes in the degree of labour markets' flexibility in terms of wage differentials (such as changes in the power of trade union), suggests that unemployment (involuntary) could be limited through downward adjustments of (real) wages in excess supply markets that are slower than upward adjustments in excess demand market. Besides, the adoption of inflation barrier implies neither full capacity and employment conditions nor its treatment as a strong, or weak in some cases, indicator of actual economy; it assumes the dependency between demand and supply side levels so as both to lead to an effective production process.

In these conditions, economic activity would be affected during both short and long run period by the appropriate adjustment of capital stock and capital investment, whose positive effect on economic activity creates new jobs¹⁵. Thus, the adoption of inflation targeting as an intermediate policy would regard the inconsistency of the adverse effects of the pursuit of low inflation on real output with demand determined

¹⁵ Such relation stands only if capital investment concerns both physical and human capital (Rowthorn, 1995, 1999; Sawyer, 2001).

environment. Although its adoption may be approached as supply side equilibrium, it is highly possible to behave more like a plateau or even be pitched somewhat above the ‘upper end’ (Sawyer, 2007a, 2007b).

Obviously, the introduction of Post Keynesian framework implies an interrelation between aggregate demand, income distribution, capital accumulation, capacity utilization and economic activity without harming inflation; suggestions that have been adopted even in mainstream literature (see for example Bean, 1989; Dreze and Bean, 1990). It is declared that unemployment cannot be faced through purely either labor market policies or demand side policies; it is required their efficient combination in the most realistic way.

4. Conclusions

The above analysis, casts any doubt away about the inability of the NAIRU concept and its implications to squeeze unemployment down. This ‘ideal’ theoretical concept turns to be far from what actual economies need, though policymakers’ commitment with inflation targeting regime and strictly labour market policies dominated in most of them. Opposing to these suggestions, the introduction of a more realistic framework- that of Post Keynesian economics- wherein aggregate demand and income distribution have an essential role, ensures the possibility for sustaining economic activity and increasing employment levels. Besides, the failure of the restrictive macroeconomic policies in conjunction with the specific constraints that are imposed is unquestionable.

Thus the policy instruments and targets that are adopting are needed to be reconstructed. Especially nowadays where the central problem that economies are called to face is the increasing unemployment and its consequences, it is imperatively required policies to be set by taking into account the real macroeconomic magnitudes and actual rather the ideal economic conditions. Besides, the problem of unemployment exists exactly because of policymakers’ adherence on mainstream’s ensign for labour market employment policies within inflation targeting regimes and incomplete knowledge of policymakers for political economy. Only if demand

shortages are faced adequately, will economies curb continuous recessions and low economic activity.

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