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## Is New Keynesian Economics Really New? An Answer in a New Keynesian Perspective

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IS NEW KEYNESIAN ECONOMICS REALLY NEW?  
An Answer in a New Keynesian Perspective\*

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**Abstract**

This paper contrasts the descriptive and normative properties of the New Keynesian general equilibrium models with those of other Keynesian paradigms, such as the neoclassical sintesi and the post Keynesian ones. We argue that the co-ordination failures, which are pivotal within the New Keynesian setup, deliver an alternative picture of the market economies with respect to three key Keynesian issues: the interpretation of the failure of Say's Law, the monetary nature of the economy, the role of the state within a market economy.

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## 1. Introduction

Over the last twenty years the Keynesian research programme recorded the entry of a new approach - the so called *New Keynesian Economics* - whose main purpose has been to reconcile traditional microtheory with the two pillars of the Keynesian edifice: the existence of unemployment, and the possibility of affecting the overall level of economic activity through aggregate demand policies. In this vein, New Keynesian economists have devoted themselves to the partial equilibrium analysis of imperfections on the labour and credit markets, as well as to general equilibrium models involving trade and market arrangements other than the traditional Walrasian paradigm. Explanations have been put forth for real and nominal price rigidities, consistent with the agents' optimizing behaviour under appropriately specified constraints.<sup>1</sup>

An issue which is now under debate is whether this research effort has in fact provided a *new* comprehensive macro-paradigm, somehow alternative to both the New Classical approach, and the various formulations of Keynesian macro-theory. In particular, a question is being frequently, and critically, raised: whether the New Keynesian (NK) solution to the microfoundation problem boils down to a resurrection of the standard (IS-LM plus Phillips curve) neoclassical synthesis (NS) model. Quite interestingly, this kind of criticism is put forward by economists belonging to very different theoretical traditions.

In his *Post Keynesian Macroeconomic Theory*, Paul Davidson insists that this new brand of "neoclassical" keynesism is just a reincarnation of the old neoclassical synthesis in disguise:

If prices were only perfectly flexible and existing information freely available to all, then the logic of the New Keynesians would force them to admit that full employment is the inevitable outcome of an unfettered market system. In the long run with sufficient price flexibility assured by a free market mechanism, though we may all be dead, New and Old Keynesians can agree with their classical brethren that full employment and economic prosperity are inevitable. (Davidson, 1994, pp.9-10)

At the same time, from the opposite theoretical camp Robert Lucas - in his comment on the well known *A Sticky Price Manifesto* (Ball and Mankiw, 1994) - argues that

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<sup>1</sup> The main contributions in the NK research area are collected in Mankiw and Romer (1991). General assessments are provided by Dixon and Rankin (1994), and Benassi, Chirco and Colombo (1994).

Ball and Mankiw introduce their paper in a style that simply denies that there *are* any hard, unsolved problems of macroeconomic theory. The IS/LM framework is perfectly adequate, as has been recognized by "traditionalists" since Hume. The few economists who do not agree with this are merely "heretics".... There is a tradition that must be defended against heresy, but within that tradition there is no development, only unchanging truth. (Lucas, 1994, p.154)

Statements of such a kind, being as they are so different in spirit, should elicit careful reflections from NK economists - and it should be stressed at the outset that they appear at first not unjustified. If taken out of context, some (we would say, unfortunate) sentences by well known NKs do prompt one to react as Davidson did - they even sound as if the reincarnation of the neoclassical synthesis was part and parcel of their theoretical programme in the first place.<sup>2</sup>

However, statements of such a kind - we believe - rest on an interpretation of the NK general equilibrium theory, according to which at the end of the day the latter is basically a theory of nominal rigidities. This we think is misleading: nominal rigidities arise as a by-product of a more general framework, the inner gist of which is describing economies where co-ordination problems are pervasive. To be sure, this is acknowledged by, e.g., Davidson (1994, p.298); but the full implications of it have not been acknowledged as readily.

In this paper we discuss the role of the co-ordination issue within the NK economics, and contrast its macroeconomic implications with those of other Keynesian models. In particular, our aim is to show that the existence of co-ordination failures delivers a core theory of unemployment in capitalist economies (and a basic message on the theme "the market and the State") which is utterly different from that implied by the neoclassical synthesis - nay more, both new and interesting for anyone working within the Keynesian tradition, however broadly defined. What we want to stress is that in many NK models the typical properties of Nash equilibria are extended to the *general equilibrium* of the economy:<sup>3</sup> individual production and absorption decisions are affected by and affect (though negligibly) the aggregate level of activity, in the absence of a centralized choice co-ordinating mechanism. Independently of other

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<sup>2</sup> See, for example, Ball and Mankiw (1994, p.143), Mankiw (1990, p.1648), Blanchard (1990, pp.792-793).

<sup>3</sup> We concentrate here on general equilibrium NK models (leaving aside the issues raised by the rich literature on labour and credit market imperfections) since our concern is a comparison between alternative views on *generalized* market failures.

frictions, market economies may suffer from unemployment, due to this decision making process typically leading to an inefficient resource allocation. Indeed, the mere existence of *economy-wide* interaction of demand and supply decisions, not mediated by an 'auctioneer', gives rise to an aggregate demand externality bringing about a (typically Keynesian) insufficient level of aggregate demand and production. Thus, the central idea of NK general equilibrium models is that a market economy left to itself, far from treading the way to prosperity, is doomed to settle at a second best equilibrium: the equivalence between social and individual optima no longer holds even when identical agents interact in a frictionless, profit seeking environment. Contrary to the criticism raised by many, the equilibrium being second best does not depend on supply side frictions, such as price rigidities or market structure in itself,<sup>4</sup> but rather on decision making being atomistic in an unco-ordinated environment. Moreover, this makes for normative propositions which are drastically different from those applying to models where the frictionless equilibrium exhibits optimality properties.

In the Keynesian tradition, the search for the causes of unemployment is a search for the causes of the failure of Say's Law: why is it that the full employment output may not be supported by adequate aggregate demand? In section 2 we argue that the above co-ordination theory of unemployment involves an interpretation of the failure of Say's Law which is not based on the existence of demand outflows from the circular flow of income: even granting that whatever quantity is produced may be actually demanded, it does not follow that in an economy with decentralized production and expenditure decisions the incentive is perceived to realize the full employment production. Section 3 deals with the role of money in this peculiar failure of Say's Law. Post Keynesian economists stress that the existence of a non-produced commodity with zero elasticity of production and zero elasticity of substitution is a *necessary and sufficient* condition for demand not supporting the full employment output. We argue that the lack of incentives to full employment persists, even if money has a positive elasticity of substitution with goods and merely performs the role of generalized purchasing power. In section 4 we discuss some policy implications of the NK approach. We point out that the second-best properties of equilibria allow for a role

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<sup>4</sup> This point has been made several times by Paul Davidson. Be it enough to quote Davidson (1994, ch. 17; 1989, 1985). See also Sawyer (1995, p.56 ff.)

of policies, which differs from that of other Keynesian models - and cannot be easily classified within the standard demand-side vs. supply-side categories. Finally, some concluding remarks are offered in Section 5.

## 2. Co-ordination, unemployment and Say's Law

When interpreted as an equilibrium condition for a monetary economy, Say's Law may be thought of as consisting of two separate, though related, propositions. The former is that the activity of production generates incomes, in such a way as to ensure that the produced output be actually bought at an appropriate level of the aggregate price. The latter is usually taken as a corollary of the former, and asserts that, given this absorption capacity, *competition* among firms should lead to full employment. In his *General Theory*, Keynes writes explicitly:

Thus Say's Law that the aggregate demand price of output as a whole is equal to its aggregate supply price for all volumes of output, is equivalent to the proposition that there is no obstacle to full employment. (Keynes, 1936, p.26)

For the former of these two propositions to hold a basic property of substitutability is called for - money is substituted for goods whenever the price level declines due to an excess supply of goods. Accordingly, this interpretation of Say's Law requires (a) that aggregate demand depend on the aggregate price level and/or (b) that prices be responsive to market disequilibria. As is well known, Keynes' argument against Say's Law was based on a strong refusal of condition (a), i.e., on money exhibiting zero elasticity of production and zero elasticity of substitution:

Thus, not only it is impossible to turn more labour on to producing money when its labour-price rises, but money is a bottomless sink for purchasing power, when the demand for it increase. since there is no value for it at which demand is diverted - as in the case of other rent-factor - so as to slop over into a demand for other things (Keynes, 1936, p.231).

Within the (broadly defined) Keynesian camp, this emphasis on the properties of money is the distinctive feature of the American post Keynesian school. By contrast, the tradition originated with the NS, dating back to the IS-LM model, progressively

shifted the focus onto the issue of price rigidities. In this perspective unemployment becomes a problem of temporary price and/or wage sluggishness: at the disequilibrium (fixed) wage and/or price, output may be demand determined and Say's law does not hold; but in the long run price adjustments restore full employment output, *via* some direct or indirect real money-balances effect. Thus, the role of policy is confined to speeding up the slow adjustment process inherent to the existence of disequilibrium, and stabilizing the economy at its natural, full employment, level of activity - the latter is in effect the point to which the economy would anyway tend to settle, albeit possibly with substantial delay.

One cannot deny that the microfoundation of nominal rigidities has been the starting point and a crucial issue of the NK research effort. And some "very neoclassical" ingredients do characterize many NK general equilibrium models: be it enough to mention that the money sector is typically described through the sharpest version of the Quantity Theory. But the main result on nominal rigidity (*viz.*, that small frictions in the price adjustment procedure may generate large deviations from the frictionless equilibrium) relies on a more general property, which is put forth as typical of market economies: the existence of *macroeconomic* externalities and co-ordination failures, which characterize the equilibrium positions independently of nominal rigidities. These externalities underlie the *second-best* features of the *frictionless* equilibrium: at equilibrium resources are *not* fully employed, although an increase in the level of activity would be preferred by all producers and consumers. As a result, we may say that the (frictionless) equilibrium typical of these NK models does satisfy the first proposition implicit in Say's Law, *but ends up rejecting the second*. Indeed, such models show that although there is a price at which what is supplied is actually demanded, and although such price does prevail in the long run, this does not necessarily lead to full employment *in the long run*. This we interpret as a strong departure from the neoclassical synthesis.

Using a paraphrase of Keynes's own wording, in a NK framework Say's Law holding is *not* equivalent to the proposition that there is no obstacle to full employment. As many authors have stressed (e.g. Startz, 1995), the obstacle is rooted in the lack of individual incentives towards expansion - the private and the social evaluation of the net benefits from expansion do not coincide and, since a market co-ordination

mechanism is missing, agents are not in the position to internalize the social impact of their choices.

The easiest - though not the only - way to see this point is by means of a very simple general equilibrium model with barter, where the existence of macroeconomic externalities is embodied *via* the hypothesis of monopolistic competition. Two points are worth stressing from the outset. The first is that monopolistic competition must be taken here as a mere device to formalize the idea that (i) individuals behave atomistically, but (ii) each agent's choices have an impact - albeit negligible - on aggregate variables. The second is that by assuming barter we are sketching an environment where the first proposition of the Say's Law necessarily holds - in a Keynesian perspective, we put ourselves in the less favourable situation. In a sense which will be specified later, our results leave purposely out of consideration the existence of money.

We assume that the economy is populated by  $N$  identical producer-consumers, each of whom is specialist in the production of his own commodity (produced by means of his labour only), and generalist in consumption - all goods enter symmetrically in his utility function. By adopting the Dixit and Stiglitz (1977) formulation of the latter, the demand function faced by the generic producer  $i$  can be derived, as a function of the relative price  $p_i$  of his good and the aggregate level of income  $R$ , which each producer takes as given:

$$Y_i = D(p_i, R) = (p_i)^{-\sigma} \frac{R}{N}, \quad (1)$$

where  $\sigma$  is the price elasticity of demand, and  $R = \sum_{i=1}^N p_i Y_i$  is the out-of-wage and out-of-profit income of all agents - by Say's Law, it represents the level of aggregate demand. Notice that both  $p_i$  and  $R$  are expressed in terms of a composite commodity, in which all the  $N$  produced goods enter symmetrically according to the structure of the consumers' preferences. By assuming, for the sake of simplicity, a constant returns technology and increasing marginal disutility of labour, a cost function can be written of the form:

$$C(Y_i) = \frac{1}{\alpha} Y_i^\alpha, \quad \alpha > 1. \quad (2)$$



The symmetric general equilibrium solution is identified by point  $A$  in Figure 1. Under symmetry the equilibrium relative price is equal to 1 and the equilibrium level of output for each producer is

$$Y_i = Y_j = Y^* = \left( \frac{\sigma - 1}{\sigma} \right)^{\frac{1}{\sigma-1}}$$

The equilibrium total income (aggregate demand) in the economy is

$$R^* = NY^*,$$

and indeed, in Figure 1, the objective demand curve faced by producer  $i$  in equilibrium is drawn for  $R = R^*$ .

Why is it that this simple representation is interesting in a Keynesian perspective? One might argue that it buys us nothing more than the standard underemployment result associated with imperfect competition. Indeed, simple inspection of Figure 1 shows that - given a level  $R^*$  of aggregate demand - a decrease of the relative price  $p$ , along  $D(p_i, R^*)$  up to marginal cost would lead to an increase in the production of each producer by an amount  $(Y'' - Y^*)$ . This is actually a measure of the (supply side) output/employment loss due to imperfect competition; it applies however only in a partial equilibrium perspective, i.e. *given the position of the demand curve*. In fact, in a general equilibrium framework point  $B$  is also characterized by a different kind of inefficiency, which - as shown. *inter alios*. by Benassy (1987), Blanchard and Kiyotaki (1987) - has a clear interpretation in terms of insufficient aggregate demand. In  $B$  equilibrium is demand-determined and all producers perceive a demand constraint. This qualifies  $B$  as an equilibrium with insufficient aggregate demand, at which each producer would be willing to expand production, if more demand appeared on the market at that relative price. The demand constraint could be relaxed through a co-ordinated balanced expansion, which would be supported (*via* Say's Law) by a corresponding increase in demand. Figure 1 shows that a price-equal-marginal cost equilibrium like  $C$  is potentially available, at which individual production is increased up to  $Y'$ , total income (aggregate demand) is  $R' = NY'$ , and the utilities of all agents are increased by an amount given by the shaded area  $ABC$ . A

production level  $Y'$ , however, has the nature of a co-operative equilibrium (it is the benevolent planner solution), and can neither be obtained through, nor be sustained by, a decentralized decision process. Actually, in  $B$  the individual return from individual expansion is nil, while the social return is positive, given that the expansion by a single producer increases (though negligibly) income and aggregate demand. Individuals, however, have not an economy-wide perspective: they are not able to internalize this macroeconomic (demand) externality. They do not produce more than  $Y^*$ , and so they do not create the demand which would absorb the increase in production. Insufficient aggregate demand arises here independently of outflows from the circular flow of income: it *causes and is caused by* 'insufficient' production at an equilibrium with bootstrap properties.<sup>5</sup>

It should thus be clear that what we are facing here is not merely an imperfect competition problem, but rather the effect of the decision making process being atomistic, in the absence of a market co-ordinating device. The measure of the general equilibrium inefficiency is not  $(Y'' - Y^*)$ , but is much larger and equal to  $(Y' - Y^*)$ . That we are not simply looking at a supply-side, market power, problem becomes even clearer when we observe that, were the same economy supplied by a single multi-product monopolist, the latter would indeed choose the first best solution  $Y'$ .<sup>6</sup> Moreover, as Cooper and John (1988) have shown, this inefficiency arises in all general equilibrium models where individual returns depend on the aggregate level of activity, *and* individual decisions have a bearing on the latter, but this effect is not internalized - as is the case, for example, with the general equilibrium search models developed by Diamond (1982, 1984).

These considerations bear also on the long standing debate on the nature of unemployment within equilibrium models. One might argue - and it has indeed been argued - that in the above setting unemployment is entirely voluntary. Again, the notion of voluntary unemployment is traditionally associated with the idea that workers are

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<sup>5</sup> It is therefore true, as Davidson (1994, p.298) ironically says, that according to the NK theory "the unemployment problem could be solved if each business firm immediately hired one more worker"; the problem is that they have no individual incentive to do so and, in a market economy, cannot be forced to. Moreover, if all firms agreed to expand production and employment, a free rider problem would arise, since there would be an incentive for the individual firm to exploit its monopoly power in the new situation.

<sup>6</sup> The same point has been raised, in a different context, by Dixon and Rankin (1994, p.175).

satisfied with their current level of employment, and that the real wage equals the marginal disutility of labour. Now, our producer-consumers do realize their utility maximizing choices; however, the latter are conditional on an inefficient decision making process. And when the utility maximizing choice is not efficient from an aggregate perspective, the distinction between voluntary and involuntary unemployment becomes much more slippery than that applying to standard models - at point *B* the real wage is higher than the disutility of labour.<sup>7</sup>

The results we have just mentioned are well-established. What we want to stress here is that they offer a drastically different picture of the behaviour of the market economy, as compared to that which inspires macroeconomic models of the new classical and NS variety. The existence of macroeconomic externalities questions the deepest theoretical justification for *laissez-faire*, and this is *not* a matter of price rigidity or flexibility. In this NK world there is no invisible hand to the effect that what is optimal for each individual is optimal in the aggregate - and this result looks even stronger when one realizes that it relies on such a “weak” notion of optimality, as indeed the Pareto criterion is. This NK world is one where a central planner (i.e., a centralized co-ordination mechanism) is required to deliver full employment; that is, individual rational choices *do not* generate a desirable allocation of resources. We believe that, viewed from this perspective, these NK achievements do add a new contribution to the representation of modern market economies.

### 3. Demand externalities: the role of money.

The very simple model sketched in the previous section leaves out on purpose any consideration about money. Actually, its best known formulations do include money explicitly, and typically in some very neoclassical fashion: a cash-in-advance constraint or a utility function including money are assumed, while a Quantity Theory equation links money supply to aggregate spending. However, our discussion should have made it clear that the existence of demand externalities and the resulting ‘co-ordination

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<sup>7</sup> It is worth recalling that a monopolist choosing its profit maximizing price is equivalent to a competitive, quantity-rationed firm choosing its profit maximizing constraint: thus an equilibrium with imperfect competition like Benassy's (1987) can be mapped into a quantity-constrained competitive equilibrium (see, e.g., Benassi, Chirco and Colombo, 1994, pp.48 &ff.).

failure'<sup>3</sup> do not depend on the explicit existence of a non-produced good called 'money'. Rather, they derive from any single producer evaluating the return from production not in terms of his own good, but in terms of the composite commodity he wants to consume. In other words it derives from the desire of any producer to be paid in terms of 'general consumption'. In more complicated (and complete) models, where the producer-consumer parable is replaced by a more realistic distinction between producers and consumers, the same considerations would apply whenever workers are paid in terms of a bundle of goods and not in terms of the specific good they produce. Thus, though money is not explicitly introduced, even in that barter economy the exchange process is characterized by one of the properties which are typical of a monetary economy: out-of-wage and out-of-profit incomes confer a *generalized* purchasing power to their recipients. Indeed, if money is introduced in our barter economy (and endowed with the standard properties of substitutability), nothing is added to the picture: the predictions of the model are identical, so long as money merely performs the role of medium of exchange - while in the barter economy agents want to be rewarded in terms of the composite goods, in the monetary economy they are paid in terms of money, which allows them to buy the composite good itself.

Should then we conclude that - setting aside the issue of nominal rigidities - money is immaterial in this basic NK setup? Again, the answer depends on the relative weight one bestows upon the two propositions Say's Law consists of. While the existence of an asset with the essential properties of zero elasticities of production and substitution is a necessary and sufficient condition for the first proposition not holding, in the absence of a decentralized co-ordination device the mere existence of a medium of exchange (of a generalized purchasing power), is sufficient to break the equivalence between the first and the second proposition. In its broad function of medium of

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<sup>3</sup> In the literature the term 'co-ordination failure' has been used with different meanings. It is common to distinguish between the situations in which the economy settles at a non-cooperative equilibrium dominated by a co-operative solution, and those in which the economy settles at a non-cooperative equilibrium Pareto dominated by other non co-operative solutions. By applying game theoretic terminology, some authors (e.g. Silvestre 1993), talk about a *co-operation* problem in the former case, and use the term *co-ordination* for the latter. Though the distinction is to be kept in mind, for it entails different policy implications, we believe that in a macroeconomic perspective the co-operation problem becomes actually one of economy-wide co-ordination. Accordingly, we have elsewhere suggested an alternative distinction between *co-ordination failures* in *weak form* (dominating co-operative solution) and in *strong form* (multiple non co-operative solutions). See Benassi, Chirco and Colombo (1994, ch.9).

exchange (which is in itself beyond dispute), money does co-ordinate exchange, but splits production from consumption individual choices. The emergence of a non produced commodity with the mere property of generalized purchasing power - independently of its having other properties and performing other roles - is rooted in the generalist nature of consumption patterns, and prevents *individuals* from perceiving the advantages of a possible expansion supported by Say's Law. In a monetary competitive economy, however, this is of no substantial consequence: the auctioneer ensures that Say's Law *fully* holds *in the aggregate*, as multimarket consumption and production decisions are co-ordinated at full employment. By contrast, in the non competitive economy sketched above, private agents do not internalize the (positive though individually negligible) impact on aggregate demand of their production decisions; they choose under the constraint of a demand curve which from an individual perspective is given, and accordingly does not signal correctly all trade opportunity potentially available (and Say's Law-supportable) in the aggregate. In this framework, the split between production and consumption leads to an equilibrium which is efficient market by market, but inefficient in the aggregate - which amounts to saying that supply generates its own demand but at a 'lower than potential' level of output. Not surprisingly, this inefficiency arises also in other settings where there is indeed a medium of exchange, but the auctioneer is absent or does not perform its allocative role, *viz.* the fix-price models (e.g. Drazen 1980, Grandmont 1989).

#### 4. Policy implications

It is indisputable that the NK research programme has devoted a great deal of effort to the microfoundation of nominal rigidities, to which the effectiveness of monetary policy is inescapably linked in a world where money is assumed to be substitutable for goods. Many dynamic models based on some version of the menu costs argument deliver a slow price adjustment process, which resembles a Phillips-curve type of adjustment (Ball, Mankiw and Romer, 1988). Indeed, the *dynamic properties* of the typical NK model with nominal rigidities are similar to those of a standard NS model: there is a flexible equilibrium from which the economy may move away due to monetary shocks, but to which the economy automatically returns once the adjustment process is completed. The similarities, however, do not go beyond this. As we have

already stressed, the crucial difference lies in the *static properties* of the flexible equilibrium itself. In a NK framework the flexible equilibrium is suboptimal - which means both that it is Pareto-improvable and that it delivers a lower-than-potential level of activity. This implies a strong departure of the NK policy analysis from that of the NS, with respect to the following main points: (a) the welfare properties of output fluctuations; (b) the desirability of stabilization policies; (c) the interpretation of the long run neutrality proposition. Let us see them in turn.

(a) The NS flexible equilibrium is the full employment equilibrium. Movements away from this equilibrium are always to be considered undesirable. A negative demand shock implies unemployment, while an increase in output beyond full employment is possible only in the presence of (temporary) money illusion on the workers' part. The NK flexible equilibrium is an underemployment equilibrium. If a nominal rigidity allows a positive monetary shock to generate an output expansion, the new fixed-price equilibrium Pareto-dominates the flexible equilibrium. Under price rigidity, monetary shocks exert an asymmetric effect on welfare: while monetary contractions reduce both output and welfare, an output expansion induced by a positive monetary shock results in an increase, and not a decrease, in welfare for all agents. Notice that if the economy is at an inefficient equilibrium, with the properties described in section 2, the welfare maximizing reaction to a positive monetary shock (the co-operative reaction) would imply an output expansion, while the non-cooperative reaction implies an overall price increase. The existence of nominal sluggishness forces individual agents to adopt non-cooperatively the co-operative strategy - one might say that, following a *positive* nominal shock, nominal frictions lead traders to internalize "unconsciously" the aggregate demand externality. By contrast, the welfare maximizing reaction to a negative shock involves a generalized price adjustment, so that in fact nominal rigidity brings about both an output reduction and an economy-wide welfare loss. In the short run NK models suggest a role for nominal demand management in expanding output, provided that agents choose the co-operative reaction to this kind of impulses. The latter is actually the case in the presence of nominal rigidities; but, more generally, the same result could be achieved *via* expansionary policies matched with income policies triggered to predetermine the path of out-of-wage and out-of-profit incomes - and so, indirectly, the price and wage path. That these models do make a case for income

policies is a point which, as far as we know, has never been touched in the literature; but we believe that it emerges directly in a theoretical setup which interprets a low level of activity as a co-ordination problem. Indeed, income policies are actually a co-ordination device: they may lead individual agents to accept the co-operative solution, thus creating the scope for demand management to be effective.<sup>9</sup>

Notice that if the welfare evaluation of output fluctuations (around the flexible equilibrium) is asymmetric, the traders' dislike for fluctuations must originate from a 'second order' factor - such as, risk aversion formalized by the concavity of the agents' objective functions (Ball and Romer, 1989). This brings us to the second point, namely the role of stabilization policies.

(b) The result that fluctuations are on average undesirable, due to the agents' dislike for variability, has been put forward as an argument in favour of stabilization policies (e.g. Romer, 1993). Given a random pattern of nominal aggregate demand, a policy maker committed to counter *all* observed shocks would obtain a socially preferable outcome, i.e., a result better than that provided by a policy maker who refrained from any such action. This is certainly true, but - rather obviously - it does not imply that stabilization policies should always be implemented. While stabilization is preferable *ex-ante*, there is no reason *ex-post* to counterreact positive, welfare improving, nominal shocks. In the NS world the policy-maker perceives an incentive to stabilize nominal aggregate demand, which holds both *ex-ante* and *ex-post*; however, in the NK framework there is no incentive to an *ex-post* counterbalancing of positive shocks. Accordingly, the existence of sticky nominal prices in a setup where the equilibrium is inefficient does not seem to support stabilization policies; rather, it creates a bias towards expansionary monetary policies, which is absent at the flexible equilibrium of the textbook NS model.

A point which deserves attention, however, is whether the welfare improvement associated with money expansion can in fact be actually attained by monetary authorities. In general, this question has been dealt with in a static perspective, where

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<sup>9</sup> Quite obviously, the same mechanisms which make nominal demand management effective, may support traditional fiscal policies. As a side remark, however, one may recall that a great deal of theoretical effort has been devoted to showing how the existence of monopoly power may result in the supply side effects of real demand management being magnified, or in fiscal policy affecting the equilibrium output through alternative channels, such as the degree of monopoly power (Dixon and Rankin, 1994; Silvestre, 1993).

the scope for an increase in output due to an increase in the money supply is limited by the size of the price adjustment costs: it is only when real rigidities are substantial, that small menu costs may support a real effect of monetary shocks (Ball and Romer, 1990). But the implications of this expansionary bias are in principle to be seen as a dynamic problem - an issue which as such has been apparently overlooked in the literature. Two points are worth stressing in this respect. On the one hand, one may think that while the incentive toward expansion depends on the degree of price stickiness, the latter in turn cannot be independent (when endogenously determined) of the perception of that very incentive by private agents. In the spirit of Barro and Gordon (1983), it is reasonable to believe that the more the policy maker tries to exploit nominal rigidities, the more prices should become flexible.<sup>10</sup> On the other hand, it must be stressed that while various mechanisms can be devised such that, following a positive shock, the system finally converges to its flexible equilibrium, the economy as a whole benefits nonetheless from higher welfare along the whole adjustment path.<sup>11</sup>

(c) The third important aspect in which NK models depart from neoclassical models is in the *interpretation* of the long run neutrality proposition. If changes in the money supply have real effects due to nominal rigidities, these effects are obviously confined to the short run (the degree of persistence depending on the specific pricing-rule adopted by the agents). Accordingly, money is neutral in the long run in both the NS and the NK models, as the transmission mechanism of money impulses relies on nominal rigidities - and nominal prices are not rigid forever. But again the similarities between these models stop here. In the textbook Keynesian model money is neutral in the long run in the sense that the 'right' system of relative prices is eventually re-established - the economy gets back to the optimal, full employment equilibrium, recovering itself from the misallocation of resources induced by nominal shocks. The picture offered by NK models is different. The economy may indeed get a temporary relief from underemployment, thanks to an increase in nominal aggregate demand; but *if* nominal demand exerts its influence on real variables because of nominal rigidities, then these effects are temporary. In the long run the system is stuck to

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<sup>10</sup> Notice that, treating nominal aggregate demand as exogenous, Ball, Mankiw and Romer (1988) have already shown that the degree of price rigidity is inversely related to both the core inflation and the variability of demand.

<sup>11</sup> This point has been made by Obstfeld and Rogoff (1995) within an open economy model.



underemployment - in the long run money (conceived of as substitutable with goods) is, rather than neutral, ineffective.

Finally, it should be stressed that the aggregate demand externality may support - under additional assumptions on technology or the utility function - a different kind of co-ordination failure, viz. the existence of a multiplicity of Pareto-rankable non-cooperative equilibria. In these circumstances, although inefficiency characterizes all self-sustaining equilibria, an additional long run role for policy arises: by affecting expectations, it may help the system to converge to the Pareto-superior non-cooperative configuration.

These considerations should also clarify the differences and the possible complementarities between the NK economics and other (non neoclassical) Keynesian approaches, such as the post Keynesian one. The post Keynesian view of the malfunctioning of market economies is based on the idea that the existence of money intrinsically generates a leakage from the circular flow of income, which must be counterbalanced by injecting demand impulses directly into the economic system. It is as if the level of economic activity could be seen as the quantity of water flowing in a *big, partially empty* canal, from which water drains out, and which must be continuously replenished to maintain it at its full capacity. The NK approach emphasizes that, even in the absence of leakages, the agents' behaviour creates a circular flow, the size of which is smaller than its potential limit, so that policy must be addressed to alter directly or indirectly the decision making processes. It is as if in a market economy, left to itself, the level of activity could be seen as the quantity of water flowing in a *small full* canal: traditional demand policies, leaving the canal size unaltered, may lead to overflowing; but demand management can be effective if it leads traders to modify structurally the canal size. This suggests that, at least in principle, the two approaches are not necessarily alternative - though, up to now, their development has been totally disjoint.

## 5. Conclusions

In this paper we discussed critically the idea, supported by many and differently oriented economists, that the NK descriptive and normative economics eventually boils down to a mere microfounded reformulation of the textbook NS Keynesian approach.

In dealing with this question, we focused on the general equilibrium NK models, those which tackled the issue of unemployment, nominal rigidities and output fluctuations by making an explicit reference to both the multimarket dimension of the economy, and the existence of macroeconomic interactions. We showed that the crucial property of a NK economy is the lack of that coincidence between the decentralized equilibrium and the socially optimal equilibrium which, on the contrary, characterizes the Walrasian setup, and represents the strongest argument in favour of *laissez faire*. We reinterpreted the effects of this market failure in terms of a peculiar failure of Say's Law: supply creating its own demand does not necessarily lead to full employment. For Say's Law to imply full employment, any individual action should exert no external effects on the aggregate level of activity, so that the individual and the social evaluation of any economic decision coincide. The root of the macroeconomic externality which prevents co-ordination at full employment is in agents behaving atomistically, in the absence of correct signals of economy-wide trading opportunities.

In a normative perspective, the New Keynesian idea that unemployment can be *both* a disequilibrium *and* an equilibrium phenomenon generates a set of policy prescriptions quite distinct from the traditional Keynesian (and post Keynesian) ones: all suggested policy measures - be them short or long run - are somehow oriented to make up for a generalized market failure, with helping co-ordination of individual actions. In this perspective policy cannot be simply identified as a remedy for supply side or demand side problems; rather, policy aims at creating those co-ordinating devices, which might make the agents' choices consistent with a full exploitation of the existing demand and supply side opportunities.

## REFERENCES

- BALL, L. and N. G. MANKIW (1994), A Sticky-Price Manifesto, *Carnegie-Rochester Conference Series on Public Policy*, 41, pp.127-51.
- BALL, L., N. G. MANKIW and D. ROMER (1988), The New Keynesian Economics and the Output-Inflation Trade-off, *Brookings Papers on Economic Activity*, no.1, pp.1-65.
- BALL, L. and D. ROMER (1989), Are Prices too Sticky?, *Quarterly Journal of Economics*, 104, pp.507-24.
- BALL, L. and D. ROMER (1990), Real Rigidities and the Non-Neutrality of Money, *Review of Economic Studies*, 57, pp.183-202.
- BARRO, R. J. and D. B. GORDON (1983), Rules, Discretion and Reputation in a Model of Monetary Policy, *Journal of Monetary Economics*, 12, pp. 101-21.
- BENASSI, C., A. CHIRCO and C. COLOMBO (1994), *The New Keynesian Economics*, Oxford: Basil Blackwell.
- BENASSY, J.P. (1987), Imperfect Competition, Unemployment and Policy, *European Economic Review*, 31, pp.417-26.
- BLANCHARD, O. J. (1990), Why does Money Affect Output? A Survey, in B.M. Friedman and F.H. Hahn (eds), *Handbook of Monetary Economics*, Amsterdam: North-Holland, vol.II, pp.779-835.
- BLANCHARD, O. J. and N. KİYOTAKI (1987), Monopolistic Competition and the Effects of Aggregate Demand, *American Economic Review*, 77, pp.647-66.
- DAVIDSON, P. (1985), Liquidity and Not Increasing Returns Is the Ultimate Source of Unemployment Equilibrium, *Journal of Post Keynesian Economics*, 7, pp.373-84. Reprinted in P. Davidson, *Money and Employment*, London: MacMillan, ch.45.
- DAVIDSON, P. (1989), Keynes and Money, in R. Hill (ed.), *Keynes Money and Monetarism*. Reprinted in P. Davidson, *Money and Employment*, London: MacMillan, ch.26.
- DAVIDSON, P. (1994), *Post Keynesian Macroeconomic Theory*, Aldershot: Edward Elgar.
- DIAMOND, P.A. (1982), Aggregate Demand Management in Search Equilibrium, *Journal of Political Economy*, 90, pp.881-94.
- DIAMOND, P.A. (1984), *A Search-Equilibrium Approach to the Micro Foundations of Macroeconomics*, Cambridge Mass.: MIT Press.
- DIXIT, A. and J. STIGLITZ (1977), Monopolistic competition and Optimum Product Diversity, *American Economic Review*, 67, pp.297-308.
- DIXON, H. and N. RANKIN (1994), Imperfect Competition and Macroeconomics: A Survey, *Oxford Economic Papers*, 46, pp.171-99.
- DIXON, H. and N. RANKIN (eds.) (1995), *The New Macroeconomics: Imperfect Markets and Policy Effectiveness*, Cambridge: Cambridge University Press.

- DRAZEN, A. (1980), Recent Developments in Macroeconomic Disequilibrium Theory, *Econometrica*, 48, pp.283-306.
- GRANDMONT, J.M. (1989), Keynesian Issues and Economic Theory, *Scandinavian Journal of Economics*, 91, pp.265-93.
- KEYNES, J. M. (1936), *The General Theory of Employment, Interest and Money*, London: MacMillan.  
Reprinted in *The Collected Writings of J.M. Keynes*, London: MacMillan, 1973, vol. VIII.
- LUCAS, R. E. (1994), Comments on Ball and Mankiw, *Carnegie-Rochester Conference Series on Public Policy*, 41, pp.153-55.
- MANKIW, N. G. (1990), A Quick Refresher Course in Macroeconomics, *Journal of Economic Literature*, 28, pp.1645-60.
- MANKIW, N.G. and D. ROMER (eds.) (1991), *New Keynesian Economics*, Cambridge, Mass.: MIT Press.
- OBSTFELD, M. and K. ROGOFF (1995), Exchange Rate Dynamics Redux, *Journal of Political Economy*, 103, pp.624-60.
- ROMER, D. (1993), The New Keynesian Synthesis, *Journal of Economic Perspective*, 7, pp.5-22.
- SAWYER, M. C. (1995), *Unemployment, Imperfect Competition, and Macroeconomics*, Aldershot: Edward Elgar.
- SILVESTRE, J. (1993), The Market-Power Foundations of Macroeconomic Policy, *Journal of Economic Literature*, 31 pp.105-41.
- STARTZ, R. (1995), Notes on Imperfect Competition and New Keynesian Economics, in H.Dixon and N.Rankin (eds.), *The New Macroeconomics: Imperfect Markets and Policy Effectiveness*, Cambridge: Cambridge University Press.

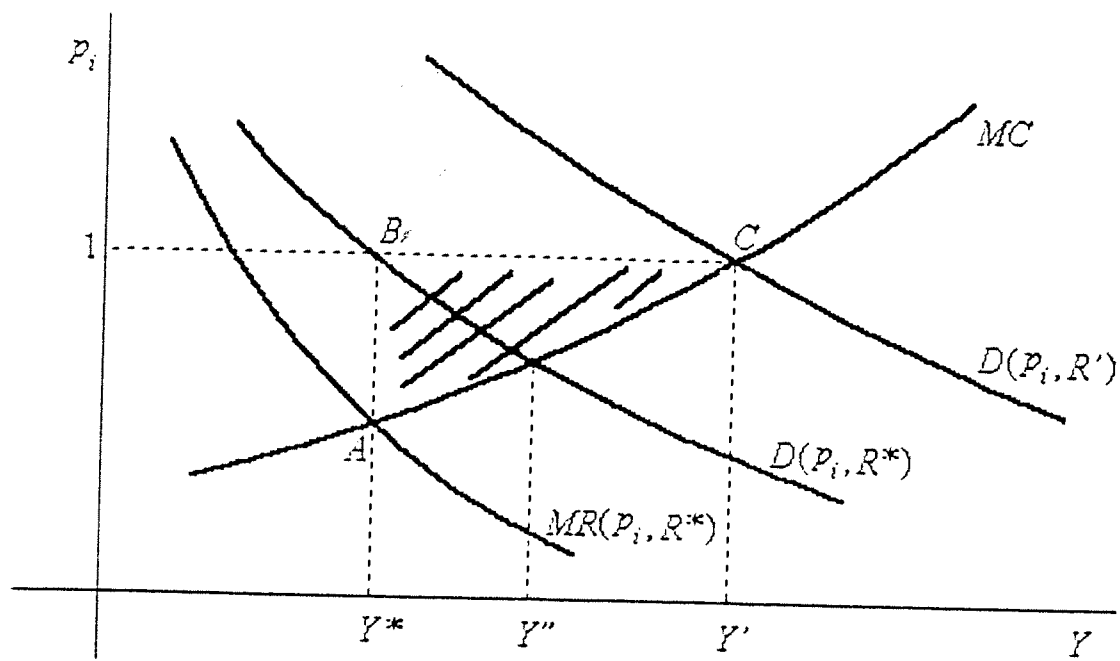


Figure 1