The New Keynesian Approach to Business Cycle Theory: Nominal and Real Rigidities

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Abstract. At the heart of the Neoclassical synthesis lies the assumption that prices do not adjust instantly to equilibrate supply and demand. Under these circumstances, once the synthesis failed, economists naturally started to investigate whether the imperfect adjustment of prices could be logically inferred from realistic assumptions regarding the microeconomic environment, and subsequent research led to a variety of new non-walrasian theories regarding the functioning of markets. Thus, the non-walrasian analyses of the labour market suggested that wages could perform other functions than to equilibrate labour supply and demand. For instance, in models focused on labour contracts, wages are regarded as an „insurance” provided by the employer to the workers, while in *efficiency wage* models, wages are determinants of labour productivity. Such models have the ability to account for unemployment, but they are not able to explain the failure of the classical dichotomy. The paper aims to investigate the theoretical progress achieved during the past 3 decades, to clarify nominal and real rigidities and evaluate their impact on the business cycle and finally, to evaluate the theoretical aspects which need further analyses and refinements.

Key words: nominal rigidities, real rigidities, menu costs, efficiency wages, near rationality
JEL classification: *E30, E31, E32*

1 Introduction

During the past 3 decades, New Keynesian economists have investigated whether the imperfect adjustment of prices could be logically inferred from realistic assumptions regarding the microeconomic environment, which led to a variety of non-walrasian theories regarding the functioning of markets. These analyses of the labour market suggested that wages could perform other functions than to equilibrate labour supply and demand. For instance, in models focused on labour contracts, wages are regarded as an „insurance” provided by the employer to the workers, while in *efficiency wage* models, wages are determinants of labour productivity. Such models however, have the ability to account for unemployment, but they are not able to explain the failure of the classical dichotomy.

Any micro foundation for the failure of the classical dichotomy involves the presence of a nominal imperfection or rigidity; otherwise, any perturbation of purely nominal nature will leave the equilibrium unchanged. Perhaps surprisingly, this observation immediately raises some difficulties, since individuals are ultimately concerned with real prices and variables: real wages, hours of labour, real consumption etc. To them, the various variables are of no direct relevance in nominal terms, since they can be modified quite easily and have the very significance that their name suggests.

To the extent that nominal rigidities play an important role in determining cyclical behaviour, it means that these rigidities – which are small at firm or household level – are capable of triggering a large effect at the macroeconomic level. This is the very assumption that contributed to the recent theoretical progress – such as the contributions of Mankiw (1985) and Akerlof and Yellen (1985)[1] – in understanding the microeconomic foundation of the real effects of aggregate demand perturbations.

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[1] Mankiw, N.Gregory – *"Small Menu Costs and Large Business Cycles: A Macroeconomic Model of Monopoly",* Quarterly Journal of Economics, May 1985, 100, p.529-37 şi George A. Akerlof, Janet L.Yellen, – *A Near Rational Model of the Business Cycle, with Wage and Price Inertia*, Quarterly Journal of Economics, Supplement, 1985, 100:5, p.823-38.

The possibility that small barriers to adjustment might determine a considerable effect of nominal variations on aggregate economic activity depends on firms' inclination to change prices when aggregate supply changes. Let us consider, for instance, the case where there is a decrease in output at the macroeconomic level. When demand for a firm's products decreases – as a result of the decrease in output – it may choose between two possible options: it can either maintain prices unchanged and reduce production, or it may reduce prices so that a reduction in output is no longer required.

2 The failure of the classical dichotomy based on microeconomic foundations

This problem can be analyzed in terms of marginal cost and marginal revenue. When the economy is in equilibrium, the two variables are equal, but a contraction of aggregate output shifts the demand curve leftwards, which means that demand falls and so does the firm's marginal revenue. If the firm does not reduce the price, the level of output will correspond to the lower demand but, at this level, the marginal revenue exceeds the marginal cost, so the firm will be motivated to reduce the price and increase output to the amount that equates the 2 variables. In essence, firms' inclination to reduce prices may be very low – even though the reduced demand is harmful – because the potential gains incurred by the price reduction may be very small, even if the shift in demand is large. In this situation, the reaction of a large number of firms facing such difficulties in adjusting prices can determine very large real effects. If the representative firm is not inclined to change the price and there are price adjustment obstacles, aggregate output will decrease. If, on the other hand, the motivation to reduce prices is strong, all firms will reduce nominal prices, which means that the negative demand shock will only result in the price decrease.

Firms' motivation to reduce prices in response to lower demand is determined by the way the marginal cost and marginal revenue react. In what regards the former, the more it falls, the bigger the firm's motivation to reduce the price. Since the new output level is lower, then the amount of labour and the real wage will be lower as well, so the marginal cost will decrease. In what regards marginal revenue, the more it falls, the lesser the firm's motivation to reduce the price. The main factor influencing the shift in marginal revenue is demand elasticity: if this variable decreases together with output, then the shift in marginal revenue will be larger and if the elasticity increases, the shift will be smaller.

In order to provide a microeconomic foundation for the role of aggregate demand in triggering cyclical behaviour, it does not suffice to incorporate the hypotheses of imperfect competition and of barriers to price adjustment in the `50s-`60s standard approach. The source of difficulties or of barriers lies with the labour market. To the extent that labour supply is inelastic and the only divergence from the walrasian framework is the existence of small barriers to nominal adjustments, then a decrease in the amount of labour, combined with a decrease in labour will lead to a large reduction in real wages. In this case, marginal cost will decrease sharply during recessions. As a result, firms' inclination to reduce prices is strong, except for the situation where demand elasticity also decreases considerably. Following the same line of reasoning, estimations point out that in models whose only departure from the walrasian framework is the imperfect competition hypothesis, firms' inclination to change prices in response to demand shifts is stronger than any barriers to price adjustment.

In this way, the classical dichotomy failure occurs – according to Romer (1990) – either because the marginal cost does not decrease enough after an output contraction induced by aggregate demand, or because the marginal revenue decreases too much, or perhaps, a combination of the two. More generally, firms' inclination to change prices can be imagined as a function depending on two factors: the impact of the change on the real price which ensures profit maximization and the cost incurred by the deviation of the real price from its profit-maximizing level. In order for the inclination to

adjustment to be low, one of two conditions must be fulfilled: (i) the profit-maximizing real price must respond little to aggregate output changes[2] or (ii) considerable deviations from the profit-maximizing real price must only have small costs. In other words – Romer concludes – a complete model with large real effects of nominal perturbations implies *both nominal barriers and real rigidities.*

Theoretical contributions have not yet clarified the most important *real rigidities*, but have brought forward several potential candidates, presented below. A first area of research focuses on the *external economies of scale* induced by large market externalities[3]. These models investigate the hypothesis and mechanisms whereby, in periods of intense economic activity, the acquisition of inputs and sale of final outputs is done more easily than in periods of low activity; the main argument supporting this hypothesis is that during favourable periods, trade is more intense as well and markets function properly. The effects of this hypothesis are a decrease in marginal cost during expansions and an increase during recessions.

The second direction of research analyzes *capital market imperfections* deriving from the existence of imperfect information. These models assume that asymmetric information between solicitants and providers of funds only represent a barrier to searching for external funding, which means that with asymmetric information, internal financing is less costly than external financing. Since firms obtain higher profits – and thus, more funds for internal financing – during booms, it means that capital market imperfections tend to impart a countercyclical evolution to the cost of capital. And since the cost of capital represents an important share of the total cost, it makes the cost curve move in a countercyclical direction[4].

The third approach focuses on the *cyclical behaviour of demand elasticity on the goods market*, suggesting various causes of the shifts in elasticity in response to shifts in aggregate output. For instance, when the level of output is high, dissemination of information to consumers may be done more easily. This effect can impart a pro-cyclical evolution to demand elasticity – and consequently to the marginal revenue curve – thus diminishing firms' inclination to price adjustment in response to a shift in aggregate demand.

None of the above directions however, focuses on *real rigidities on the labour market* and still, real rigidities on this market play an essential part in explaining real effects of nominal perturbations. As already shown, if labour market were walrasian in nature and labour supply were inelastic, then real wages would have a strong pro-cyclical evolution, and the rigidities on the other markets (such as those mentioned above) should be extremely powerful to counter-balance the adjustment tendency of prices incurred by this pro-cyclical evolution. Still, even though analysts debate the precise evolution of the real wage throughout the business cycle, there is no definite empirical evidence to point out a strong pro-cyclical behaviour. This is precisely the reason why the fourth direction of research is trying to explain this matter.

Generally speaking, the real wage may not have a pro-cyclical evolution for two reasons: first, over the short term, labour supply may be relatively inelastic – a fact not confirmed by empirical evidence however and secondly, due to certain labour market imperfections, workers may not fit on the labour supply curve for at least one part of the business cycle.

These models do away with the strong connection between labour supply elasticity and the real wage response to demand shifts, which implies that the real wage may not have a pro-cyclical evolution, even if labour supply is

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[2] The degree of „real rigidities" must be high - Laurence Ball, David Romer - *Real Rigidities and the Non-Neutrality of Money*, Review of Economic Studies, April 1990, 57, p.183-203

[3] A se vedea de exemplu Peter A.Diamond - *Agregate Demand Management in Search Equilibrium*, Journal of Political Economy, October 1982, 90, p.881-94

[4] Vezi de exemplu Ben Bernake, Mark Gertler – *Agency Costs, Net Worth and Business Fluctuations*, American Economic Review, March 1989, 79, p.14-31

inelastic. Other labour market imperfections – such as imperfect information or bilateral monopoly induced by the heterogeneity of workers and jobs – could have similar implications for the movement of the real wage. To the extent that such imperfections make the real wage respond modestly to demand shifts, then they substantially reduce firms' inclination to adjust prices when perturbations turn up. Moreover, the possible existence of substantial real rigidities on the labour market suggests that the mechanism whereby small barriers to nominal adjustment trigger considerable real effects from nominal perturbations could involve the rigidity of nominal wages rather than of nominal prices. If wages show substantial real rigidity, a demand-driven expansion will only result in a small rise in optimal real wages. As a result, just as small barriers to nominal price adjustment can lead to substantial price rigidity, similarly, small barriers to nominal wage adjustment may lead to substantial wage rigidity

We shall next concentrate on the *small nominal barriers to price adjustment*, because they play the central part in models focused on price rigidities. In this context, we must observe that the costs incurred by renegotiating contracts, collecting and processing information and estimating the optimal price, informing customers and suppliers about price changes etc do not in themselves represent costs of nominal price adjustment. The error lying behind this vision: its promoters consider that maintaining constant prices is the only way „to do nothing" about prices. Prices can however, be adjusted through numerous simple measures – such as the recurring absolute increase or the indexation in line with inflation or nominal GNP – which imply neither renegotiations, nor decision-making costs or information costs. In other words, the existence of costs incurred for instance by informing customers about nominal changes is a consequence – and not a cause – of the fact that nominal prices are usually left unchanged.

N. Gregory Mankiw focuses on the so-called *menu costs* – which are the technological costs of changing prices – their name is derived from the standard example of a restaurant faced with the cost of printing new menus. But these menu costs are not in a position to account for a series of empirical microeconomic observations regarding firms' price policies. These observations infirm the hypothesis that price adjustment barriers are given by the the costs of printing and displaying new prices. Moreover, the extent of the price change can vary a lot and the probability for price changes to be followed by a subsequent additional change is the same, whether the change in question is large or small. Finally, the frequency of price changes is low: on average, the nominal price is only modified after inflation erodes the real price by 10%. Under these circumstances, only a very large cost of price adjustment could reconciliate these empirical findings with the *menu cost* approach. Similar observations can be found in Carlton (1986) and Cecchetti (1986)[5].

Akerlof and Yellen[6] on the other hand, use the sintagm *near rationality* to describe barriers to nominal adjustments, meaning that firms are willing to give up small profits. We must however take into account that a lot of price policies involve small profit losses. The question is why, of all these policies, firms choose those that involve considerable nominal rigidities; the observation that nominal rigidities only have small costs – is not very helpful in trying to find an answer to this question. Even though the realism of the *near rationality* hypothesis is often questioned, still Akerlof and Yellen's model is not without importance: it suggests that obstacles to price adjustment are not necessarily technological in nature.

But the most promising direction of research is based on an observation by Bennett Mc Callum

[5] Vezi Dennis W. Carlton – *The Rigidity of Prices*, American Economic Review, Sept. 1986, 76, p.637-58 si respectiv, Stephen G.Cecchetti – *The Frequency of Price Adjustment: A Study of the Newsstand Prices of Magazines*, Journal of Econometrics, aug.1986, 31, p.255-74

[6] George A.Akerlof, Janet L.Yellen - *A Near Rational Model of the Business Cycle, with Wage and Price Inertia*, Quarterly Journal of Economics, Supplement, 1985, 100:5

(1986)[7]: since goods are exchanged for money, and not other goods, it is easier to express prices and wages in monetary units. In other words, is easier to use the exchange intermediary as a measurement unit, thus expressing prices in nominal – and not real – terms. In this context, the so-called *menu costs* may indeed be responsible for the failure of prices to adjust continuously. Even if we accept this justification, it is rather unlikely – but not impossible – that these menu costs and the difficulties involved in the recalculation of prices should generate substantial nominal rigidity.

In the situation where prices are normally kept constant, then adjusting a price in response to shifts in aggregate demand – either through direct price changes, or by adopting an indexation mechanism – involves a conscious decision by the price setter. In this case, barriers to perfect price flexibility not only include computing difficulties and adjustment costs, but also the need for the price setter to realize the benefits of price adjustment. Moreover, if most firms only rarely adjust their prices, then the cost born by a firm adopting a different price policy will comprise not only direct costs, but also the cost of explaining customers what that policy is and how it operates. The final outcome will most likely be that certain costs[8], which, in a perfectly flexible walrasian framework would lead to changes in real prices, will affect the nominal price change considerably. This means that nominal rigidities could be stronger and more complicated than in the situation where the only obstacles would be the computing difficulties and the menu costs.

This analysis suggests that the inflation rate represents an important determinant of the adjustment barriers' intensity. In inflation is high, then nominal prices are frequently adjusted, political decision-makers become aware that they have to make adjustments in line with the general price level and individuals no longer pay attention to nominal prices and wages.

In such an approach, these theories focused on small nominal obstacles assert that the real effects of a nominal shock are lower in high-inflation environments – and this implication differs from alternative theories. In traditional Keynesian theories for instance, the degree of nominal rigidity is an exogenous factor. In Lucas's imperfect information theory (1973)[9], the degree of nominal rigidity does not depend on the inflation level, but is determined by the difference or the discrepancy between aggregate demand shocks on the one hand and one particular firm's demand shocks.

As to empirical evidence, Ball, Mankiw and Romer (1988)[10] investigate the real effects of aggregate demand shifts in different countries and periods, concluding that the New Keynesians' predictions are confirmed: the real effects of demand shifts are lower in a high-inflation environment. According to Mankiw[11], the issue of rigidities is closely connected to the micro foundations of macroeconomics; in this context, we must clarify how rigidities do occur despite the optimizing behaviour of individuals. The most important finding is that despite small obstacles to perfect flexibility, the macroeconomic effect is considerable. In addition, this phenomenon is amplified by a series of real wage and price rigidities and by the lack of coordination of price changes among firms.

Last but not least, the success of recent models is largely the result of two innovations: the imperfect competition hypothesis and the integration of price rigidities and wage rigidities.

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[7] Bennett McCallum – On *"Real" and "Sticky-Price" Theories of the Business Cycle*, Journal of Money, Credit and Banking, Nov.1986, 18, p.397-414

[8] Costs connected to the collection and processing of information, to decision-making regarding adjustment, to contract negotiations, to customers' and/or employers' prejudice

[9] Robert E.Lucas Jr. – *Some International Evidence on Output-Inflation Trade-offs*, American Economic Review, June 1973, 63, p.326-334

[10] Laurence Ball, N.Gregory Mankiw si David Romer – *The New Keynesian Economics and the Output-Inflation Trade-off*, Brookings Papers on Economic Activity, 1988, no.I, p.1-65

[11] N.Gregory Mankiw – *Recent Developments in Macroeconomics: A Very Quick Refresher Course*, Journal of Money, Credit and Banking, Aug 1988, Part.2, p.4

As already stated earlier in this paper, the failure to account for nominal rigidities triggered a series of theoretical research endeavours, which brought forward a potential explanation: the costs incurred by the price adjustment process. But economists objected that these costs were trivial, insignificant at the macroeconomic level and therefore could not be accepted as a foundation for the New Keynesian models. In response, the New Keynesians replied that there were obvious sources of wage and price rigidities: implicit labour contracts, efficiency wages, insider-outsider relationships. The problem is that these are real rigidities, whereas the Keynesian theory is founded on nominal rigidities. Real rigidities by themselves do not represent a hindrance to nominal price flexibility, because the adjustment of nominal proces in response to a nominal shock does not necessarily imply any change in real prices. The absence of models based on nominal rigidities would actually reflect the microeconomic principle stating that inidviduals are not concerned with nominal variables. The only exception to the rule are the small costs incurred by the nominal adjustments.

Consequently, recent research relies on the premise that reducing nominal rigidities is costless and tries to clarify how come a substantial rigidity turns up at the macroeconomic level. Significant contributions include: Mankiw[12], Akerlof and Yellen[13], Blanchard and Kiyotaki[14], Ball and Romer[15]. Based on economic analyses in imperfect competition, Mankiw, Akerlof and Yellen point out a simple - yet essential – phenomenon which opens new paths for future research: in their models, the cost of nominal rigidities for economic agents is much lower than the macroeconomic effect; but in the absencs of motivations for price adjustment, agents refuse to cover these costs. An interesting interpretation of this conclusion is provided by Blanchard and Kiyotaki: the macroeconomic effects of nominal rigidity differ from the individual costs faced by economic agents, because the rigidity derives from an aggregate demand externality. A firm during a recession cause by money supply contraction is confronted with a demand fall – where the demand curve shifts to the left – and also with a profit fall. The firm would like the demand curve to shift back to the right and to make the same revenue, but this is not possible through a price reduction. Adjusting the price is merely the second best, or the minimal loss in revenue: the „gain” of the adjustment is actually the optimal distribution of losses between diminished sales and diminished prices. At this point, the recession would end if all the firms adjusted their prices. But no firm believes it can single-handedly end the recession and consequently, it may not make the adjustment, even if its costs are much lower than the recession costs.

New Keynesians also claim that aggregate demand shocks cause large fluctuations in output and welfare, which are inefficient and require the stabilization of aggregate demand. Even though most models do not analyze the effect of demand fluctuations on wealth, Ball and Romer (1987) show that small obstacles to nominal adjustment are enough to cause a large reduction in wealth and that aggregate demand fluctuations can be much more costly than relative price fluctuations[16].

3 Nominal versus real rigidities

All these models are correct, but not complete, because they cannot account entirely for the dimension and persistence of non-neutralities: in real economies, nominal rigidities are

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[12] N.Gregory Mankiw – *"Small Menu Costs and Large Business Cycles: A Macroeconomic Model of Monopoly",* Quarterly Journal of Economics, May 1985, 100, p.529-37 ;

[13] Gerorge A Akerlof şi Janet L. Yellen – *"A Near Rational Model of the Business Cycle, with Wage and Price Inertia"*, Quarterly Journal of Economics, Supplement, 1985, 100:5, p.823-38;

[14] Olivier Jean Blanchard, Nobuhiro Kiyotaki – *Monopolistic Competition and the Effects of Aggregate Demand,* American Economic Review, vol.77, sept.1987, p.647-666;

[15] Laurence Ball, David Romer – *Are Prices Too Sticky?,* Working Paper 2171, NBER, febr. 1987

[16] Laurence Ball, David Romer – *Real Rigidities and the Non-Neutrality of Money,* Working Paper 2476, NBER, dec.1987

amplified by other phenomena. On the other hand, real rigidities in themselves do not represent a barrier to perfect nominal flexibility. So it is the joint effect of nominal and real rigidities that explains the business cycle mechanism feasibly. Such phenomena include real wage and real price rigidities, as well as lack of temporal synchronization of price changes by firms. Thus, Ball and Romer have improved previous New Keynesian models, which were rather unrealistic and inconsistent with empirical evidence. For instance, substantial nominal rigidities can arise from the combination of a real rigidity on the labour market and the imperfect competition hypothesis or the *menu costs* hypothesis. If firms pay *efficiency wages* – which generate real wage rigidity – then real wages may be above their equilibrium level, in which case a decrease in labour demand may considerably reduce employment, without triggering a large reduction in the real wage at the same time, even if labour supply is inelastic.

The real rigidities' importance is not yet clear in what regards their sources, amplitude or precise effects. In addition, even the cumulated effect of nominal barriers and real rigidities is not entirely capable of explaining the amplitude and persistence of nominal shocks' effects on real variables. In all models, these effects are eliminated when the price adjustment occurs, but this does not happen in real economies. One possible explanation is the assumption of unsynchronized price adjustment by firms, which results in a longer adjustment period for the general price level and implies that nominal shocks can have large and long effects, even though individual prices are changed frequently[17].

Research focused on the lack of synchronization complement those on nominal rigidities arising from menu costs, because for a given frequency of price changes, the lack of synchronization slows down the adjustment of the general price level.

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[17] Olivier J. Blanchard – *Price Desynchronization and Price Level Inertia,* in Rudiger Dornbusch, Mario H.Simonsen – *Inflation, Debt and Indexation,* MIT Press, 1983, p.3-24

A plausible explanation that consolidates New Keynesian models – though little explored so far – is that of **asymmetrical effects of demand shocks,** since the models discussed so far involve symmetrical responses of the economy to rises and falls in aggregate demand. For instance, in many of the asymmetrical effects models, a demand decrease leads to a large output decrease, whereas a demand increase usually leads to price increases. Such asymmetries are very promising, as they support the Keynesian belief in the opportunity for demand stabilization

It is not yet clear if Keynesian models can be adapted to generate such asymmetries, and if they can, whether they can be formalized within the framework of current research.

Apart from these models, recent research has incorporated *two new assumptions* into existing models: imperfect competition and more emphasis on price – rather than wage – rigidities. In what regards *imperfect competition,* it is largely acknowledged that rigid prices are practically incompatible with perfect competition, because economic agents are not price setters; therefore, it is only on imperfect markets – where firms are able to set prices – that we can analyze the issue of adjustment. Keynesian models in the `70s however, incorporated nominal rigidities in walrasian economie, which often generated deformed results and require additional hypotheses. Introducing the imperfect competition hypothesis solves a lot of theoretical problems of the existing models through a series of advantages:

- The level of output is always demand-determined
- Expansions lead to an increase in welfare
- Wage rigidities cause unemployment through a low aggregate demand
- Nominal rigidities have externalities on aggregate demand
- Imperfect competition clarifies the evolution of the real wage throughout the business cycle

Finally, the second theoretical innovation regards the shift of the research focus on the goods market. Keynes and his follwers focused

on the labour market rigidities and studied nominal wage rigidities primarily. Current research integrates labour market and goods market rigidities, with an emphasis on the latter and analyzes the combined effects of both nominal and real rigidities. This innovation has at least two advantages: (i) even though substantial nominal wage rigidities is present in modern economis, their real effects are not clear; research in the field of implicit contracts shows that maintaining employment independent from wages could be beneficial: firms prefer to choose the level of employment they deem efficient, rather than move on the labour demand curve when real wages change, whereas buyers on the goods market operate along the demand curve, and (ii) the focus on the goods market re-confirms the observation that real wages do not have a counter-cyclical evolution throughout the business cycle.

At the same time, the focus on the goods market reconfirms the observation that real wages do not have a countercyclical evolution; as already shown, this failure of traditional Keynesian models can be solved even if nominal rigidities are only present on the goods market. But it is much easier to provide a theoretical explanation for the evolution of real wages, when wage rigidity is combined with price rigidity: in this case, the effect of a shock on real wages depends on the relative size of the adjustments – both of prices, and of salaries. At the end of this presentation we must discuss the importance and feasibility of recent theories. The real effects of nominal disturbances depend on a series of barriers – or imperfections – of nominal nature. The only alternative to this approach is the assumption of imperfect information regarding the general price level. And if we reject the short-term monetary neutrality, we cannot possibly explain the relationship between real and nominal variables without resorting to nominal rigidities in the economy[18]. Nominal rigidities are also important to explain the effects of real shocks

on aggregate demand, triggered for instance, by shifts in public spending or in investors' expectations. There are other possible explanations for the effects of real shocks on demand – for instance Barro's model of public spending[19]; but the nominal rigidities assumption is still the most feasible explanation, considering that such explanations assume a large elasticity of labour supply.

In the models we presented, the slow adjustment of prices results in a temporary deviation of output and employment from their natural level.

Apart from these models, another type of models have emerged recently, founded on the phenomenon of *hysteresis* – which involves permanent effects of shocks. Such a model is that proposed by Blanchard and Summers (1986)[20] – which postulates that the natural rate of unemployment in European countries changes when the real unemployment rate changes, so there is no unique level towards which the latter tends to return to. If these theories are correct, then the nominal rigidities cannot provide a comprehensive explanation of unemployment, because nominal prices adjust to shocks eventually. Under these circumstances, additional explanations are required, such as the insider-outsider model constructed by the two authors. Still, it is nominal rigidities that maintain the crucial role in explaining initial impulses of unemployment.

4 Conclusions

The models based on nominal rigidities are correct, but not complete, because they cannot account entirely for the dimension and persistence of non-neutralities: in real economies, nominal rigidities are amplified by other phenomena. On the other hand, real rigidities in themselves do not represent a barrier to perfect nominal flexibility. Therefore,

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[18] Laurence Ball, N.Gregory Mankiw si David Romer – *The New Keynesian Economics and the Output-Inflation Trade-off*, Brookings Papers on Economic Activity, 1988, no.I, p.16-17

[19] Robert J.Barro – *Output Effects of Government Purchases,* Journal of Political Economy, vol.89, dec.1981, p.1086-1121

[20] Olivier J.Blanchard si Lawrence Summers – *Hysteresis and the European Unemployment Problem,* în Stanley Fischer - ed., NBER Macroeconomics Annual, MIT Press, 1986, p.15-78

economists tried to integrate nominal and real rigidities, which led to a series of new theories on business fluctuations.

Last but not least, the success of recent models is largely the result of two innovations: the imperfect competition hypothesis and the integration of price rigidities and wage rigidities

References

Akerlof, George A. and Yellen, Janet L. (1985), *A Near Rational Model of the Business Cycle, with Wage and Price Inertia*, Quarterly Journal of Economics, Supplement, 100:5: 823-38

Ball, Laurence and Romer, David (1987), Are Prices Too Sticky?, *Working Paper 2171*, NBER, Febr. 1987

Ball, Laurence and Romer, David, (1990), Real Rigidities and the Non-Neutrality of Money, *Review of Economic Studies*, April 1990, no.57: 183-203

Ball, Laurence, Mankiw N.Gregory and Romer, Dr – *The New Keynesian Economics and the Output-Inflation Trade-off*, Brookings Papers on Economic Activity, 1988, no.I: 16-17

Barro, Robert J. (1976), Rational Expectations and the Role of Monetary Policy, *Journal of Monetary Economics,* vol.2, 1976

Barro, Robert J. (1984) Rational Expectations and Macroeconomics in 1984, *AEA Papers and Proceedings*, vol.74, nr.2, May 1984

Barro, Robert J. (1987), *Macroeconomics,* John Wesley & Sons, New York, 1987

Beaud, Michel and Dostaler, Gilles (2000), *Gândirea economică de după Keynes*, Ed. Eurosong&Book, Bucuresti, 2000

Bernake, Ben and Gertler, Mark, (1989), Agency Costs, Net Worth and Business Fluctuations*, American Economic Review*, no 79, 1989: 14-31

Blanchard, Olivier J. (2000) What Do We Know About Macroeconomics that Fisher and Wicksell Did Not?, *NBER Working Paper* no.7550, febr. 2000

Blanchard, Olivier Jean and Kiyotaki, Nobuhiro (1987), Monopolistic Competition and the Effects of Aggregate Demand, *American Economic Review*, vol.77, sept.1987: 647-666

Blanchard, Olivier J. (1986), *Hysteresis and the European Unemployment Problem,* Summers, Lawrence and Stanley, Fischer - ed., *NBER Macroeconomics Annual*, MIT Press, 1986

Blanchard, Olivier J. (1982), Price Desynchronization and Price Level Inertia*, NBER Working Paper no.900*, June 1982: 3-24

Blanchard, Olivier J. (1983), Price Asynchronization and Price Level Inertia*,* Rudiger Dornbusch, Mario H.Simonsen – *Inflation, Debt and Indexation,* MIT Press, 1983

Carlton, Dennis W. (1986), The Rigidity of Prices, *American Economic Review*, Sept. 1986, no.76

Diamond, Peter A., (1982), Agregate Demand Management in Search Equilibrium, *Journal of Political Economy*, October 1982, no.90: 881-94

Lucas, Robert E., Jr. (1980), The Death of Keynesian Economics, *Issues and Ideas* (winter 1980), University of Chicago Press, p.18-19

Lucas, Robert E.,Jr. (1973), Some International Evidence on the Output-Inflation Trade-off*, American Economic Review,* 63(3): 326-334

Mankiw, N.Gregory (1985), Small Menu Costs and Large Business Cycles: A Macroeconomic Model of Monopoly", Quarterly Journal of Economics, May 1985, no.100: 529-37

Mankiw, N.Gregory (1988), Recent Developments in Macroeconomics: A Very Quick Refresher Course, *Journal of Money, Credit and Banking,* Aug 1988, Part.2

Mankiw, N.Gregory (1989), Real Business Cycles: A New Keyensian Perspective*, Journal of Economic Perspectives*, vol.3, no.3

Mankiw, N.Gregory (1990), A Quick Refresher Course in Macroeconomics, *Journal of Economic Literature,* vol.28, December

Mankiw, N.Gregory (1991), The Reincarnation of Keynesian Economics, *NBER Working Paper* no 3885, October

McCallum, Bennett (1986), On "Real" and "Sticky-Price" Theories of the Business Cycle, *Journal of Money, Credit and Banking,* Nov., 18: 397-414

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