

CEPAL

REVIEW



UNITED NATIONS

38

CEPAL

Review

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UNITED NATIONS
ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN

SANTIAGO, CHILE, DECEMBER 1989

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LC/G.1570-P

August 1989

Notes and explanation of symbols

The following symbols are used in tables in the *Review*:

Three dots (...) indicate that data are not available or are not separately reported.

A dash (—) indicates that the amount is nil or negligible.

A blank space in a table means that the item in question is not applicable.

A minus sign (-) indicates a deficit or decrease, unless otherwise specified.

A point (.) is used to indicate decimals.

A slash (/) indicates a crop year or fiscal year, e.g., 1970/1971.

Use of a hyphen (-) between years, e.g., 1971-1973, indicates reference to the complete number of calendar years involved, including the beginning and end years.

Reference to "tons" mean metric tons, and to "dollars", United States dollars, unless otherwise stated.

Unless otherwise stated, references to annual rates of growth or variation signify compound annual rates.

Individual figures and percentages in tables do not necessarily add up to corresponding totals, because of rounding.

UNITED NATIONS PUBLICATION

ISSN 0251-2920

CEPAL

Review

Santiago, Chile

Number 38

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Neo-Keynesian macroeconomics as seen from the South

Joseph Ramos*

The central problem in macroeconomics is to determine to what extent variations in aggregate demand will fall exclusively on prices, or whether they will also have an impact on output. The Phillips curve was one answer to this question, but when this attempt at synthesis failed, the issue was reopened.

The crisis in macroeconomics gave rise to two schools in the "North" —the new classical and the neo-Keynesian. Both attempt to base macroeconomics on solid microeconomic foundations— rational expectations and maximization. The neo-Keynesians, however, question the new classicists' basic postulate that markets are in continual equilibrium. On the contrary, they argue that there are specific rigidities in the various markets which lead to adjustments in output not only in prices.

In this article the author traces the development of macroeconomics upon the demise of the Phillips curve. He recognizes the contribution of the new classicists, especially as regards expectations, but emphasizes the advances of the neo-Keynesians, since he believes that the rigidities which they identify and the imbalances that may arise from them are more relevant to understanding the problems of the South (LDCs). Lastly, he examines why, despite the huge macroeconomic costs such rigidities entail, the market fails to generate incentives sufficient to overcome these rigidities and thus why the latter need to be dealt with directly by macroeconomic policy.

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Introduction

Macroeconomics fell into crisis 20 years ago and a new synthesis is still far from complete. Owing to this crisis, however, macroeconomics has become one of the most fertile areas of economics. Moreover, the absence of a new consensus does not signify a great loss for Latin America, since the previous one (the neoclassical synthesis) was largely irrelevant to our countries' problems. Indeed, the models and approaches that have proliferated with the crisis in macroeconomics are much more useful to the South than those of the past. Although it is true that they are not integrated, polished models, they are much more easily adapted to the heterogeneity of the developing countries' typical problems than are the traditional ones.

For the new classicists, the crisis originated in the fact that traditional macroeconomics (seen as the neoclassical synthesis expressed in the IS and LM curves) was but a loose combination of empirical relationships among aggregate variables, bereft of theory. This gave rise to the categorical dichotomy between microeconomics and macroeconomics. In the former, the agents responded to incentives to optimize; in turn, the *ad hoc* assumptions of the latter made possible the existence of "equilibria" with unemployment, although they failed to explain the causes of the rigidities and why optimizing agents failed to respond to incentives to overcome them.

For the Keynesians, however, the lack of rigour and theoretical elegance of traditional macroeconomics was offset by its relevance and, in particular, by its capacity to offer an explanation for the phenomenon of involuntary unemployment. What good was the theoretical elegance of microeconomics if it basically denied the possibility of involuntary unemployment, treating it as an apparent or at most frictional phenomenon, i.e., one of short duration?

The clash between the two disciplines managed to continue without major variations as long as the main macroeconomic problems were still unemployment without inflation, or inflation without recession. Moreover, thanks to the Phillips curve approach, the coexistence of inflation and unemployment could be adequately

dealt with for a while. Nevertheless, even this latter approach proved to be unsatisfactory in the mid-1970s, when its weak theoretical basis was joined by policy failures, especially in the countries affected by persistent inflation.

Since then, macroeconomics has been in crisis. Some would prefer to rebuild it on the basis of an extension of price theory. This is the choice of the new classicists, with rational expectations and its assumption of markets in continual equilibrium. Others (the neo-Keynesians) are trying to develop the microeconomic foundations of macroeconomic relations.

In this paper the author reviews the debate and subsequent macroeconomic advances, especially those achieved by the neo-Keynesians. He undertakes this task from a Southern perspective, i.e., giving particular attention to the advances of greatest interest to the developing countries,¹ especially with regard to anti-inflationary programmes.²

The first three sections describe the crisis in macroeconomics from the fall into disrepute of the Phillips curve to the subsequent reconstruction based on the incorporation of rational expectations. Two different approaches have emerged. The first is that of the new classicists, who add the assumption of continual equilibrium to that of rational expectations. The assumption of continual equilibrium is particularly unappealing in the South, given the sizeable disequilibria these countries often endure. The second approach is that of the neo-Keynesians, who incorporate rational expectations but do not assume continual equilibrium.

Rather, they emphasize the existence of important rigidities which show movements towards equilibrium, even with rational expectations. Moreover, they identify specific rigidities and do not, as in the past, limit themselves to assuming their existence. Not only is this approach more rigorous, but it has important policy implications, for rigidities can be taken advantage of (in the North) to reduce unemployment or overcome (in the South) to slow inflation without recession.

In their efforts to identify these rigidities, they go beyond those more traditionally associated with the labour market. They detect rigidities in other markets as well (the credit market and, in particular, the goods market itself). Thus the bulk of this article —section IV— is centred on identifying these rigidities, which form the microeconomic bases of neo-Keynesian macroeconomics.

Section V analyses why, if these rigidities are so important in the generation of serious macroeconomic imbalances, the market does not automatically produce incentives to eliminate them. The conclusion is that, despite its high macroeconomic cost, the private cost of each rigidity for the enterprise is usually quite low. The rigidity therefore tends to persist, unless it is dealt with by macroeconomic policy directly and deliberately.

Section VI concludes by presenting some critical issues and promising topics using this approach, such as credibility, multiple equilibria, automatic adjustment, the "corridor" of credibility and institutions.

¹It should be clarified that this is not a review of the macroeconomic advances made in the South or of studies on the South (for example, Taylor, 1983). Rather, it is a review of the neo-Keynesian advances in the North, which favour points that are more relevant to the South. Recent interpretations that take the

same approach are, *inter alia*, those of Arida (1985) and Corden (1986). The most complete review is found in Cortázar (1986).

²Thus the article refers only tangentially to problems of external disequilibria, which are dealt with, for example, in Arellano (1986) and Meller (1987).

I

Macroeconomics in crisis: the demise of the Phillips curve

The main issue in current macroeconomic theory and policy is to determine whether variations in aggregate demand will cause prices alone, or both prices and output, to vary. Although it is clear, for example, that a reduction in inflation will ordinarily require a deceleration in the growth of nominal aggregate demand, often such a deceleration reduces not only inflation but also output. Determining why the adjustment to decelerations in nominal aggregate demand sometimes falls exclusively on prices, while at other times it also hurts output, is the main problem still facing macroeconomic theory.

The Quantity Identity tells us that nominal output equals the price level (P) times the volume of output (Y), which by definition equals the quantity of money (M) times its velocity of circulation (V). In its dynamic version (where lower-case letters mean growth rates):

$$(l)m + v = p + y$$

Or, the variations in aggregate demand will affect both prices and output (unless the monetary expansion is completely absorbed by compensatory movements in v).

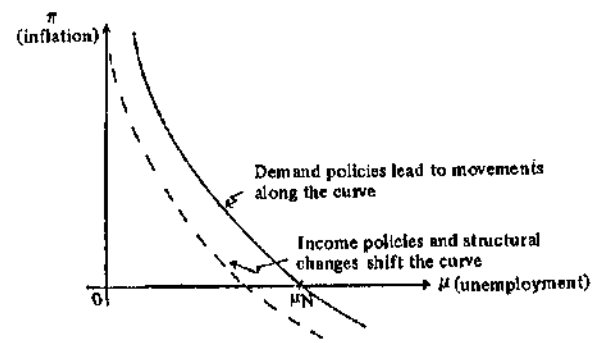
Since the traditional classical approach assumes full employment ($y=0$), any variation in demand affects prices, hence the classical theory is one of inflation without unemployment. The Keynesian approach, on the other hand, assumes price rigidity, and consequently any variation in demand affects only output and employment; in other words, it is a theory of employment without inflation. As long as the economy was clearly characterized by either of these two limited states (full employment, during the Second World War, or acute depression during the Great Depression), such a dichotomy of approaches was tolerable. However, for less critical situations an approach was needed that would permit the coexistence of inflation and unemployment (above the "natural" rate).

The Phillips curve came along to fill this vacuum. It was the "missing equation" which

tried to elucidate how reductions in nominal aggregate demand broke down into lower prices (or less inflation) and slowdowns in output (or recession). In its original version (Phillips, 1958; Lipsey, 1960), this curve suggested the existence of an inverse empirical relationship between inflation (nominal wages) and non-frictional unemployment (or unused capacity). Its explanation appeared obvious: as full employment was approached and unused capacity reduced, increases in aggregate demand would have an increasing impact on prices, since, in such circumstances, it would be difficult for output to rise without pushing up wages and costs.

This possible trade-off between inflation and unemployment left ample scope for macroeconomic policy. Structural and supply side policies served to push the Phillips curve back to the origin, while demand policies (monetary and fiscal) permitted policymakers to move along the curve to reach the preferred combination of unemployment and inflation (figure 1). Unfortunately, the empirical relationship did not prove to be stable. Moreover, the underlying theoretical base turned out to be shaky, especially in contexts of persistent inflation (as has been the case for the industrialized countries since the mid-1970s and for Latin America for much

Figure 1
ORIGINAL PHILLIPS CURVE



longer), as it related a dynamic variable (the inflation rate) with static variables (unemployment and unused capacity).

In its more modern formulation (Friedman, 1968; Phelps, 1970) the Phillips curve was modified to take into account inflationary expectations. According to this new version, variations in excess demand (the difference between the natural and effective unemployment rates) are associated not with an inflation rate but with the difference between effective and expected inflation ($P - bP^e = a(U_N - U)$).³

The more aggregate demand expands, the higher effective inflation will rise above the expected rate and the greater will be the reduction in unemployment. However, if future inflation is correctly predicted, there will be no excess demand, and consequently neither output nor employment will increase.

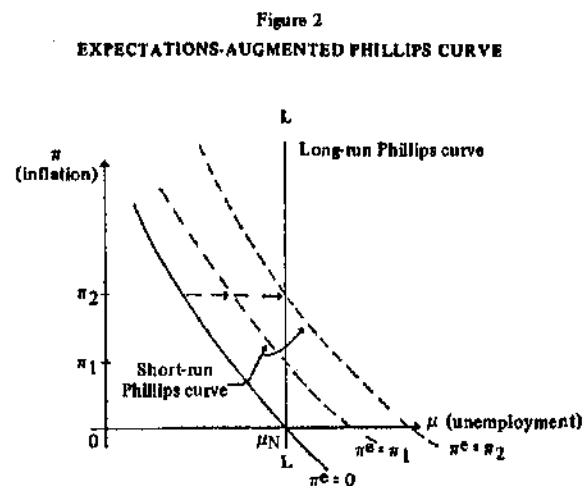
The trade-off between (unexpected) inflation and unemployment will therefore persist only as long as expected inflation differs from effective inflation. To what can we attribute this lag (or rigidity) in expectations? One suggestion —“adaptive” expectations— is to assume that expectations are adjusted only on the basis of past inflation. In such a case, since accelerations in nominal aggregate demand (consistent with a higher inflation than in the past) are unexpected, output increases, for, by assumption, prices accelerate more slowly than aggregate demand (being determined largely by past inflation).

The existence of adaptive expectations on the part of the public enables the government to reduce cyclical unemployment, but at the cost of ever more rapid accelerations in aggregate demand, and in the long run, of greater inflation. Moreover, for this policy to be successful, the public must continue to underestimate coming inflation, ignoring the fact that the authorities are systematically accelerating aggregate demand. In point of fact, sooner or later the public is bound to discover what the authorities are up to and will no doubt modify its formation of expectations to take into account not only past inflation but also the probable policy of the authorities in dealing with it.

This second type of expectations —known as “rational” (Lucas, 1972; Sargent and Wallace, 1975; McCallum, 1980)— does not postulate that the public’s expectations will be confirmed; what it does assume is that there will be no systematic error in either direction. Indeed, as long as learning is taking place and agents “rationally” adjust their expectations (looking to the future, not just the past), expected inflation will tend to equal effective inflation, and hence excess demand will gradually disappear through greater inflation, while output and employment will return to their original levels.

Thus will exist a trade-off between unemployment and higher inflation in the short run as long as expectations have not fully adjusted to effective inflation (figure 2). On the other hand, once inflationary expectations have fully

³P is effective inflation; P^e is expected inflation; U_N , the “natural” unemployment or full employment rate (given the “imperfections” prevailing in the economy); U , the effective unemployment rate; a , a coefficient of output response to excess demand; and b , a coefficient which reflects the degree to which effective inflation adjusts to expected inflation. $b=0$ is the original Phillips curve, uncorrected for inflationary expectations, that is, distorted by monetary illusion. $b=1$ implies that no matter how slowly expectations are adjusted, they eventually converge with effective inflation, especially if inflation lasts a long time. In effect, $b=1$ means that inflationary expectations do not suffer from systematic under- or over-estimation, since there is no permanent monetary illusion. It is typically associated with mechanisms of “perfect” indexation. There was a certain amount of empirical controversy about the value of b , as to whether it was 1 (the natural rate hypothesis of Friedman and Phelps) or less than 1, resulting in permanent trade-offs between unemployment and higher inflation. Empirical studies increasingly showed a $b=1$; b could be less than 1 for a time, for institutional reasons (e.g., wages are negotiated for long periods), but eventually b tended to 1. For a detailed description of this point see Gordon (1981) and ILPES (1977).



adjusted, the short-term Phillips curve will shift (upward for unexpected accelerations in demand and downward for decelerations). Consequently, in the long run, the Phillips curve is vertical, and thus the permanent trade-off between lower unemployment and higher inflation disappears, and full employment is compatible with any inflation rate.

The consequences of this reformulation for macroeconomic policy are enormous in scope: the systematic reduction of unemployment can be achieved only by continued accelerations in inflation; indeed, rigorously speaking, these accelerations need be unexpected, since agents will be formulating their expectations of future inflation not only adaptively, on the basis of its past evolution, but also taking into account all the available information with regard to the

future (rational expectations), including, to be sure, economic policy goals (*inter alia*, the reduction of cyclical unemployment by growing accelerations in the inflation rate).

Macroeconomic policy affects the employment level only if economic agents are incapable of predicting it or if its instrumentation is so complex and innovative that agents cannot "decipher it" in time to neutralize its effects. The adoption of unexpected measures allows for activism then, but at the cost of accentuating rather than tempering economic cycles. This is why the proponents of rational expectations advocate the use of rules to prevent or minimize discretionary decisions (for example, fixed expansion, rather than anticyclical increases, in money supply) and prefer to forego attempts at "fine turning" macroeconomic policy.⁴

II

The view from the South

Before dealing with the outcome of the debate in the North, it is worth examining those issues to which a policymaker from the South should be especially sensitive. In the first place, what is being questioned in the North is "upward activism", that is, just how useful is it to attempt to reduce cyclical unemployment through variations in aggregate demand.⁵ However, the macroeconomic policy of the South is today more interested in "downward activism", which

attempts to reduce inflation at a minimum cost in output. The original Phillips curve analysis or the expectations-augmented curve suggested that in order to reduce inflation there would have to be a recessive cost. On the other hand, if expectations are rational, decreasing inflation may not require a recession, as long as the inflationary goal set by the economic policy earns the public's confidence.

Hence, whereas adaptive expectations make upward activism possible, they make downward activism costly (recessive). On the other hand, if expectations are rational, the Phillips curve becomes vertical, and consequently anticyclical upward activism is of little use. The counterpart of the theorem of the uselessness of upward activism is the effectiveness (and low recessive cost) which downward activism *may* have (Sargent, 1982), as long as the anti-inflationary programme has credibility.

That stabilization policies do not necessarily have to be recessive is undoubtedly good news for the South, to the extent that the rational expectations approach is correct. However, this conclusion is less certain than it appears. For

⁴To draw this conclusion requires further assumptions. Obviously, if the economy is stable and regulates itself automatically, there will be no need for intervention, however intelligent and well-intentioned the government may be. The matter becomes more complicated when, as in real life, the economy is not very stable and the government is not very competent or is motivated by short-term political needs (see Blinder, 1987).

⁵What is in doubt is the usefulness of fine tuning and not of a macroeconomic policy to free the country (or accelerate its escape) from a deep, non-cyclical recession. What might be inappropriate is an economic policy that varies systematically with the cycle. On the other hand, an economic policy which is contingent upon a non-foreseeable state (e.g., recession resulting from external shock) will probably bring about real effects, since it comes as a surprise to the agents. Such shocks may be positive or negative, and thus the private agent would be unable to foresee them and take into account the reaction of the policy.

there is an important asymmetry in the informative assumptions of the two types of activism. Upward activism is a predictable change in established macroeconomic policy —and hence presumably can be anticipated by the public; on the contrary, an anti-inflationary policy represents not a modification of the policy in the cycle, but a change of régime (or rule), whose goal no longer consists of stabilizing employment, but prices. This change in policy rules, however, will not necessarily be recognized or believed by agents. This is why it is not enough merely to announce a new policy goal (to reduce inflation to a certain level) for the public to adjust its expectations immediately and completely. Nor is it irrational that the consistency between the goal and its implementation, or the permanency of this new goal, will be called into question. In the South, therefore, the problem of credibility is of crucial importance.

Second, as its name suggests, macroeconomic management by fine tuning refers to marginal or small changes, commonly within the same economic strategy or policy. The desire to smooth the cycle may give rise to systematic policies which lead, for example, to an expansion of the money stock each time the economy grows at less than its trend rate. Adjustments in the South, on the other hand, are wider in scope and therefore difficult to anticipate. Thus, lowering inflation does not constitute a systematic goal; it implies rather a modification of the rule or the goal of the previous economic policy (which was more tolerant in this matter). The changes in rules erode credibility, since it is difficult to discern or anticipate them, apart from the fact that there is no guarantee that they will be permanent,⁶ and until price stability becomes credible, prices will be sticky, subject to rigidities analogous to those arising from adaptive expectations.

Third, the use of rules rather than discretionary policies probably helps to avoid dynamic inconsistencies (Kydland and Prescott, 1977). For the public knows that the government may achieve a short-run benefit if it abandons the

announced policy (e.g., raising demand above the targeted inflation in order to increase employment) and so is distrustful of mere promises of stability in policy. To achieve credibility, it may be necessary to follow rules which prevent the adoption of discretionary measures. Thus, it could be advisable to make a rule, for example, that the Central Bank's financing of the Treasury must not exceed a given percentage of the gross domestic product.

Moreover, the stability of past policy itself generates credibility. It is no surprise, then, that the cost of discretionality is higher wherever credibility represents an important asset (in the North). Owing to the same instability characteristic of economic policy in the South, policy announcements have little credibility. This fact predisposes its economic authorities to abandon the announced policy and adapt to the public's expectations while encouraging their counterparts in the North to follow the announced policy, because this is what the public expects. Consequently, where credibility exists, it will be easier (less recessive) to lower inflation than where credibility is scarce (in the South). This also explains why each failed attempt at stabilization raises the probable recessive cost of the following attempt.⁷ It also explains why other instruments must be used to make up for the lack of credibility, at the risk of a serious recession.

Fourth, intervention may be effective in increasing employment, as long as expectations are adaptive or there are other rigidities which slow the adjustment of prices. On the other hand, these same rigidities, which facilitate an active upward policy (the usual goal in the North), will hamper (make recessive) an anti-inflationary policy (a typical goal of the South). Thus, effective economic policy in the South requires the identification of such rigidities in order to overcome them and offset their effects.

Fifth, macroeconomic models of the North typically assume the existence of well-developed, if not perfect, capital markets. The reality of most Latin American countries is certainly oth-

⁶It is not so much that the future is unknown as that the rules for intervention depend on contingent states, since these states constitute radical departures from the equilibrium situation.

⁷It is noteworthy in this context that successive attempts at price freezing and stabilization in Argentina, based on the Plan Austral in June 1985, were of increasingly shorter duration and the inflationary surges increasingly higher.

erwise. Domestic capitals markets are incipient and incapable of absorbing more than a fraction of the financing needs of the public or private sector. Moreover there is an insufficient and asymmetrical integration with external capital markets, so that, there is far more capital mobility outward than inward. These differences can be noted in different areas:

i) The distinction between monetary and fiscal policy —so important in the North— is less relevant in the South, since in the latter case the possibilities for fiscal financing through indebtedness (external or internal) are very limited. The South's monetary policy is basically determined by the fiscal deficit. Thus, a restrictive monetary policy largely involves a reduction of the fiscal deficit, while a growing fiscal deficit implies an expansive monetary policy. In other words, the margin for autonomy in both policies is very small.

ii) To restore external balance, monetary policy in the North may resort to measures to attract or induce capital movements. In the South, an expansive monetary policy may lead to

capital flight, but a restrictive policy will not necessarily attract new capital (apart from slowing down outflows), owing to its asymmetrical integration into the international markets. Thus, in the South a restrictive monetary policy will largely affect internal equilibrium (it may slow down an inflationary process). External equilibrium will be achieved via commercial more than capital flows, thus suggesting the greater effectiveness of devaluations and fiscal policies rather than interest rate policies.

iii) The most relevant analytical models for the South are those of open economies with restricted capital movements. Thus, when the domestic real interest rate is lower than the international rate, there is capital flight; but even if the domestic interest rate, adjusted by devaluation risk, is higher than the international rate, there may be no inflow of capital. In other words, external capital seems to be rationed more by quantity than by price. The domestic interest rate will therefore always remain above the international rate adjusted for risk of devaluation.

III

The post-rational-expectations split in macroeconomics

Whatever the economic school to which one subscribes —classical, monetarist or Keynesian— the rational expectations revolution is here to stay. *Ad hoc* assumptions, such as those behind adaptive expectations, have been rejected; on the contrary, the aim is to base macroeconomics on solid microeconomic foundations, in particular, the principle of maximization. It cannot be assumed that agents will continue to repeat the same mistakes regardless of losses. Rather, the risk of incurring such losses will induce them to seek out and anticipate the use of any policy which might try to exploit passive and inert behaviour on their part. Hence because learning is possible, it cannot be assumed that, when confronted by changes in the goals or orientation of economic policy,

agents will persist in their past behaviour. This puts in doubt the validity of most estimates of the parameters included in the macroeconomic models (and the supposition that they will remain stable) and of the proposed policies based on them (Lucas, 1976).

Similarly, one must reject simplistic schemes of interaction which suppose that policymakers act on a private sector whose optimal decisions are already given and known. On the contrary, individuals know that the authorities may feel tempted to break their word and therefore they take into account this possibility. Thus, unless the authority limits the possibilities of its own in compliance, suboptimal choices may be made, as a result of conflictive interaction, rather than optimal ones on the basis of co-operation. All

this has led to a reassessment of norms and institutions, and not just of economic policy, for the sake of greater stability and the development of a more co-operative interaction between the public and private sectors.

The adoption of national expectations by all reflects a convergence of approaches; thereafter, the different schools of thought diverge. The "new classicists" take rational expectations as their point of departure and add the assumption that the markets are in continual equilibrium. Unemployment thus becomes voluntary: faced with slight decreases in the relative price of labour, attributable to technological shocks, individuals —assuming a strong substitution between leisure and work— choose to work less now and more in the future.⁸ Consequently, systematic monetary policy has no real effects; and, according to the "neo-Ricardian theorem" (Barro, 1974), fiscal policy does not affect aggregate spending either, since a greater public deficit will be offset automatically by greater private savings. In the South, these same assumptions suggest, in their "strong" version, that stabilization policies will affect only prices, and not employment; and in a more moderate version, that the effects on employment are

transitory, lasting only, as long as there persist difficulties in distinguishing relative from overall changes in the price level (Lucas, 1972, 1973).

Except for such issues arising from problems of information and credibility, the new classical thought seems to have little direct relevance for the South.⁹ A more promising vein of thought is offered by the neo-Keynesians, who accept rational expectations, but reject the assumption that markets are in continual equilibrium, convinced as they are that involuntary unemployment is an all too obvious and habitual result of stabilization policies. Instead, they emphasize the existence of rigidities which, even in the presence of rational expectations, slow movements towards equilibrium. Unlike the past, neo-Keynesians now try to identify (and not simply assume) rigidities, whether in prices, wages or both. Thus, economic policy recovers its important role: rigidities are used in the North to raise or smooth cyclical fluctuations, in order to augment employment; whereas in the South, once identified, such rigidities need to be offset or overcome, so as to eliminate the negative effects of anti-inflationary policies on output.

IV

The microeconomic foundations of neo-Keynesian macroeconomics

The crux of the neo-Keynesian approach is to identify those rigidities which slow the full and rapid adjustment of prices to variations in aggregate demand. To the extent that this adjustment is incomplete, fluctuations in aggregate demand will give rise to changes in output (desirable increases, in the case of upward activism, and undesirable decreases, in the case of downward activism). The neo-Keynesian research strategy has sought to explore the rigidities associated with each market, either to exploit them (upwardly) or offset them (downwardly).¹⁰

1. *Rigidities in the labour market*

Labour contracts with backward-looking indexation imply that reductions in nominal aggregate demand will reduce inflation less than the amount desired, so inducing a recession (Dornbusch and Simonsen, 1983; Williamson, 1985). Nevertheless, when such rigidities are identified

⁹As for the neo-Ricardian theorem —except for the case of capital flight—, its implications contradict the importance which both orthodox and neo-Keynesians in the South attach to fiscal deficit reduction.

¹⁰The studies by Mankiw (1987) and Rotemberg (1987) are quite useful as an introduction to this topic.

⁸On the real theory of cycles, see Prescott (1986).

in time and enough political support is available, they may be counteracted. In the case of anti-inflationary programmes, it is necessary to introduce wage adjustment laws and "forward" indexation, which take into account expected rather than past inflation, entailing the modification of a wide range of contractual norms. Thus, the Plan Cruzado put into effect by the Brazilian authorities in 1986 adjusted the rate of inflation implicit in all wage contracts to the targeted rate. The adjustment to which each contract was entitled was calculated according to the number of months it had been in force.

A more serious situation is where labour productivity depends not only on the absolute wage level but also on the relative wage, as postulated by efficiency wage theories (Summers, 1988; Katz, 1986; Stiglitz, 1986).¹¹ Indeed, to the extent that labour effort varies positively with the relative wage, enterprises will be less inclined to lower wages when their demand falls, since they will fear that effort, and thus productivity, will decline and their costs will therefore not be lowered (or will be lowered less than proportionately). Productivity could fall with relative wages to the extent that a lower relative wage encourages carelessness, discourages initiative, reduces the average quality of new applicants or leads to greater labour turnover.

To the extent that most firms want to pay a higher than average wage in order to reap the benefits of greater effort and higher productivity, equilibrium is reached with a wage greater than that which would prevail with full employment; since all firms cannot pay more than the average, equilibrium is thus achieved via unemployment. Enterprises do not hire labour willing to work for less, since they fear that this would lower the productivity of the rest of their employees. Unemployment is therefore involuntary, since the unemployed exhibit the same characteristics as the employed and are willing to work with the same productivity as the

employed, and at the same wage. Yet, this is an equilibrium unemployment, since there is no incentive for enterprises to lower wages to hire the unemployed.

These models involve an additional attraction for the South, since they serve to explain the market segmentation so frequently observed in these countries. Efficiency wage theories have greater validity in the more modern or formal segments of the economy, where technology is more complex and a possible oversight consequently entails greater risks; where it is more difficult to control the efficiency of the work force; where the costs of hiring and layoffs are higher, and where specific training within the firm is of great importance. For these reasons, formal sector firms pay higher wages than in the informal sector and hire a substantial amount of workers, forcing the less privileged majority to eke out an existence in marginally productive jobs in the informal segment of the economy (Cortázar, 1986).

In such a model, cyclical unemployment (or higher underemployment) arises as a consequence of perceptual errors about the behaviour of relative wages. Thus firms may slow wages less than aggregate demand at the onset of a stabilization programme. In this way, they might hope to avoid slumps in productivity resulting from workers' mistaken belief that the drop in demand is only a local one and means a deterioration in their relative wage, and not of the general wage level. So long as firms feel that their workers are not yet fully aware that the slowdown in wages is a generalized phenomenon, they will not slow the growth in wages, since they fear that doing so will erode productivity, and so, their profits. It is enough for a few companies to exhibit such behaviour for the rest to imitate them (even though they know what is going on), since they do not want to appear to be paying a relatively lower wage. In such circumstances, then, adjustments to possible decelerations in demand will be made by cutting jobs and production, and not simply by slowing wages. Thus although wage-setting power basically be in the hands of the company, the fact that the worker has the capacity to adjust his effort (efficiency) to not only the absolute but also the relative wage may generate unemployment to the extent that the company avoids wage cuts to

¹¹The efficiency wage theory states that power over the labour market lies principally in the hands of enterprises, not in the labour force, a situation which is more in keeping with Latin American reality and which is therefore more useful in our analysis. Hence, we will not examine theories which are based on workers' power in the labour market, such as insider-outsider type theories. See Lindbeck and Snower (1985).

maintain its productivity. This characteristic makes these models quite important for the South.

This approach certainly coincides with Keynes' explanation of why workers are more willing to accept lower real wages when these fall because of higher inflation rates—which hurt everyone, but do not affect their relative wages—than a direct lowering of nominal wages, for the latter would seem to mean a decrease in their relative, as well as in their absolute, wages. In effect, to the extent that relative wages affect productivity, a problem of "co-ordination" arises, which slows the movement from one equilibrium to another. Few firms will wish to lower their wages—so long as others are not also lowering theirs—fearing they will lose through a decline in productivity more than they will gain by cutting its workers' wages. And the fewer the companies that decide to cut wages, the greater the cost to the company (in terms of productivity) of lowering its own. Worse yet, there are perverse incentives for the worker to resist a cut in his wages. The less widespread he believes the fall in demand to be, the greater his absolute wage need be (to put off a fall in his productivity) and so the lower the incentive for him to find out what is really going on. In fact, what educates him as to the state of aggregate demand is not a wage reduction (which is put off), but unemployment (or adjustment in quantity), and this is quite a costly way of providing information. Involuntary unemployment is thus a failure in the price system, and especially of its crucial co-ordinating role. Such a failure could, in principle, justify government intervention to restore equilibrium, either through an expansion in demand (upward activism in the North) or a restrictive wage policy (downward activism in the South).

Were such wage rigidity to exist, declines in output and employment would tend to be accompanied by increases in real wages (when inflation unexpectedly decelerated). In this sense, it would be a form of "neoclassical" unemployment. But recession and unemployment are often accompanied by marked reductions in real wages. To explain the concurrence of these phenomena (neo-Keynesian unemployment) we have to look outside the labour market, to the goods market.

2. Rigidities in the goods market

Recessions occur when prices do not adjust instantaneously to decelerations in demand. The aforementioned explanations attribute the lag in prices to the slowness with which (labour) costs adjust. If the latter were flexible, prices would presumably also adapt instantly.

This section, however, deals with lags which do not originate in the labour market. It thus explains why prices might adjust even more slowly than wages and so why some recessions are accompanied by declines (not rises) in real wages. In other words, this type of recession would develop not because of unduly high labour costs, but because of the contraction in sales owing to the overblown prices of goods.

Similarly, to the extent that price adjustments were slow, devaluations (revaluations) would make sense. For by directly and instantaneously modifying the price of tradeables to non-tradeables, a nominal devaluation could speed the move towards equilibrium, thus maintaining the stability of the real effective exchange rate and the external account balance (Dornbusch, 1988; Solimano, 1986).

This approach emphasizes the role of price rigidity in the goods market. Hence it abandons the postulate of perfect competition and recognizes that the firm has some margin of manoeuvre to set its prices. In fact, a little imperfect competition will suffice, this being—at least in the short run—much more widespread than it would appear at first glance. For in disequilibrium—such as during a recession or in any situation where the current price differs from the expected price—all firms, even normally competitive ones, have some scope to set prices (Arrow, 1959) and behave like firms in imperfect competition; this, as we shall see, produces a negative macroeconomic impact of great importance.

The assumption that companies have a certain margin to set their prices clearly relates to the tradition of the South, in which prices are typically modeled as a fixed margin over variable costs (mark-up pricing).¹² Moreover, the

¹²See, for example, Frenkel (1984) for Argentina; Lara Resende and Lopes (1981), Modiano (1983) and Monteiro (1981) for Brazil; Chica (1983) for Colombia; Corbo (1982) and Jadresic (1985) for Chile; and Aceituno and others (1984) for Mexico.

assumption of imperfect competition makes it possible to incorporate into macroeconomics important recent advances in industrial organization (Stiglitz, 1984), many of which are also useful in explaining recessions:

i) Under perfect competition, a price that is too high entails enormous losses to the firm (at worst, bankruptcy); on the other hand, a lower (correct) price raises sales and profits considerably. Consequently, the incentives for a speedy adjustment are strong, far in excess of those which exist in imperfect competition, where sales are not so sensitive to prices, since whatever is lost in sales volume because of too high a price is gained back, at least in part, precisely through this higher price. To the extent that the speed of adjustment is a function of possible profits, the speed of adjustment will be lower under imperfect competition than under perfect competition.

ii) In imperfect competition, prices adjust slowly, and hence changes in demand also give rise to fluctuations in the quantity produced. A positive turnabout in demand, therefore, will raise output without exerting pressure on prices, since the output generated previously with imperfect competition was suboptimal from the social point of view (the original price exceeded the marginal cost). Imperfect competition thus attracts upward activism. The converse is not true, however, for reductions in demand increase imperfect competition (the raising price in relation to marginal costs), thereby slowing price adjustment. There is thus an important asymmetry under imperfect competition: rises in aggregate demand will result in an increase in output, with little effect on prices, the system thus approaching perfect competition, whereas restrictive policies will make competition even more imperfect, thereby slowing price decelerations and so reducing output.

iii) Slow price adjustments by firms leads to externalities depressing aggregate demand. The inflexibility of one company's prices rigidifies the average level of prices in the economy, so that decelerations in demand erode real income and hence real aggregate demand. In fact, an overblown price will lower own sales (according to the price-elasticity of demand), as well as overall national income, thus reducing the demand for all enterprises according to the

income-elasticity of demand. As the latter (or income effect) depends only marginally on its own behaviour, however, each firm will completely ignore this externality and will concentrate on the former (price) effect alone (that is, to what extent its overblown price hurts profits). Indeed, the best thing for each company would be for all other sectors to lower their prices quickly, since this would allow for the aggregate demand of the economy to rise and consequently the demand of its sector; and for its sector to be the last one to adjust. To the extent that this reasoning is valid for all and no sector wants to be the first to adjust, all will tend to wait for the rest to lower their prices, thus worsening the negative macroeconomic impact.

It is difficult to exaggerate the importance of this insight for the South, even before its formalization in the North. Indeed, many authors in the South have drawn attention to the formation of prices in conditions of imperfect competition to explain the slow adjustment of prices during stabilization programmes, and hence why these tended to be recessive.¹³

Moreover, the scope for price setting by firms under imperfect competition helps explain the failure of domestic and international prices to converge, as suggested by the "law of one price", even after trade openings such as those in the Southern Cone at the end of the 1970s,¹⁴ and consequently why the use of

¹³See, among others, Ramos (1977), Frenkel (1979) and Foxley (1983).

¹⁴For example, at the beginning of the liberalization process many importers, especially small-scale ones, set the price of the imported product at the level of the domestic price rather than at cost (international price plus transport costs and customs duties). Thus, the "law of one price" worked upwards (towards the domestic price), but not downwards (towards the international price). In a second phase, importation was concentrated on differentiated products not previously available in the domestic market (e.g., whisky), which although they took market share away from the closest domestic substitute (e.g., local *aguardiente*), they did not affect its price to any great extent, since they were very imperfect substitutes. Finally, a great deal of importation was organized by the producers of the same domestic product with which it was competing. If competition in importation and distribution was insufficient — a typical situation, except in the case of relatively standardized and high-turnover products, such as televisions and tape recorders — it was possible for prices to remain above the international price plus customs duties. Certainly, in the long run, and as a competition increased, prices would tend to converge. However, the point is that this adjustment process may be quite slow.

exchange policy to curb inflation frequently leads to lagged exchange rates (ECLAC, 1984; Dornbusch, 1987).

In the spirit of neo-Keynesianism, imperfect competition is not simply assumed, but an attempt is made to describe what factors might give rise to it. Among others, the following hypotheses stand out from the theory of industrial organization.

a) *Asymmetries in demand due to information costs*

If a firm faces a demand curve that is only partly elastic, it will set its optimal price according to the price of its competitors and the quality of its product. It will thus establish its niche in the market, earning a certain reputation and regular customers. If the firm later raises its price, its regular customers will find out about it immediately, and will also realize that there has been no improvement whatever in the quality. A reduction in demand will then occur, in accordance with the price-elasticity of the respective demand curve. If, on the other hand, the firm lowers its price, the demand for the product will increase less elastically. Its own clientele's demand will rise, but the number of customers will not expand immediately. In the first place, the general public (i.e., the company's potential but not regular customers) will take some time to find out about the drop in price; and, secondly, since the occasional customers may think that the price decrease results at least in part from a deterioration in quality, their demand will rise even less elastically. As long as the news that the price drop does not involve poorer quality does not become widespread, the company will continue to face a broken demand curve, which is elastic to price increases, but less elastic to price declines.

Owing to this asymmetry in information costs, there will be fewer incentives for the company to lower its prices, since it will adjust them on the basis of its short-run demand curve, which is (and is perceived as being) less elastic. Stabilization programmes will thus tend to be recessive, since prices will decelerate less rapidly (lag) than nominal aggregate demand (Stiglitz, 1984).

b) *Oligopolistic markets in recession*

It is well known that on entering a monopolistic or oligopolistic market probable profits need to be calculated not on the basis of those of the current oligopoly, but on the basis of the much lower gains which the two firms would make if they had to divide up the market between them. Indeed, to discourage the entry of new competitors, the oligopolistic firm will charge a suboptimal price as well as maintain unused installed capacity. However, during a recession (or faced with the danger that one will develop, typical of any stabilization programme) there is less need to maintain a price much lower than the monopolistic one, since sales fall and the sector's unused capacity rises. It is thus likely that, when faced with decreases in nominal aggregate demand, the oligopolistic firm will react by increasing its margins, thus bringing its price closer to its monopolistic price, and so slowing the overall adjustment of prices in the economy.

Moreover, the existence of collusive price agreements (whether formal or informal) between oligopolistic companies tends to check the price adjustments required by reductions in aggregate demand. Because of differences in the costs, markets, quality and specificity of products, negotiations to reach such agreements are difficult. Hence, once they have been established, there is a strong incentive to maintain them, since their violation or repudiation entails the risk of a price war, in which all producers will lose. To avoid renegotiating agreements, decreases in demand tend to be dealt with initially by reducing sales rather than lowering prices, thus rigidifying adjustments in the goods market.

c) *Staggered price setting*

As it is costly to set prices every day, a company maintains prices for a given (though possibly variable) interval. During this period, it is possible that its costs will change; as certainly will its real income, dependent as it is on the prevailing rate of inflation. Consequently, the price the company sets is not the one which balances supply and demand today, but the one which will balance them throughout the period during which it remains in effect. An unexpected

slowdown in aggregate demand during this period will necessarily be incompatible with the expected inflation at the time when prices were set. Thus, if the prices are not changed, sales will drop. However, this situation will persist only until the next price change, when (if the restrictive policy is foreseen to be permanent) prices will drop in accordance with the decrease in demand, and the recession will be avoided.

However, if various companies set and reset their prices at different moments, the overall adjustment will be much slower.¹⁵ For in its decision to change its prices, the company may adopt as a referent not only the equilibrium price that is compatible with the new aggregate demand, but also its competitors' prices. In so doing, it will not change its own price completely, unless all its competitors have reset their prices simultaneously. The degree of its adjustment will thus depend on the percentage of competitors which have changed their prices. When it is the other companies' turn, they too will not adjust fully to the change in aggregate demand, since many will not yet have reset their prices, and the others will have done so only in part. If firms do not want to change their own price in relation to the average sectoral price, their adjustment to drops in aggregate demand will thus be insufficient and slow. This lack of price synchronization will create an inertia in prices, even without problems of credibility, which will aggravate fluctuations in aggregate demand.¹⁶ This is the type of problem, among others, that the so-called "desagio" table—the daily, scheduled devaluation of the old currency in relation to the new currency—sought to correct in the Austral and Cruzado Plans in Argentina and Brazil, and in this way eliminate the high inflation any expectation implicit in financial and rental contracts, so as to harmonize prices with the new targeted inflation.

¹⁵For further discussion of this topic, see Taylor (1980) and Blanchard (1983 and 1986).

¹⁶If the lack of synchronization is so costly, why do firms not synchronize their actions? One of the explanations offered is that each company faces idiosyncratic shocks or different price-setting costs, and this results in different intervals (Ball and Romer, 1987). Another interpretation (Okun, 1981) underlines each company's desire to obtain information about the behaviour of its competitors (either the price they are charging or the wage they are paying). Everyone's desire to be the last to set prices is what hinders synchronization.

Likewise, in high or sharply fluctuating inflationary contexts, the cost of maintaining a fixed price-setting interval rises; hence, the interval will be shortened. Prices not quantities, become the increasingly more important adjustment mechanism (thus approaching the instantaneous adjustment referred to in textbooks). Hence the higher or less stable the inflation rate, the less the trade-off between expected inflation and output (Ball, Mankiw and Romer, 1988). In other words, although there is general agreement with Lucas (1973) that the trade-off between inflation and output decreases as the variation in demand increases,¹⁷ it has likewise been observed that, unlike what Lucas postulates, this trade-off diminishes the higher the rate of inflation. This undoubtedly helps explain why it is less costly (there is less recessive risk) to end hyperinflation (as in Bolivia in 1985) than high and persistent, but not yet explosive, inflation (like the kinds of inflation which have afflicted the region in the past 15 years).

d) *Asymmetry in perception and strategic interdependence*

Lastly, errors in perception about the average price level may give rise to lags in the adjustment of prices (Phillips, 1958; Lucas, 1972). It is reasonable to assume that own prices are known more quickly than the average price level. Sudden variations in aggregate demand will give the impression, then, that there has been a drop in relative prices themselves: one's prices are seen to fall, whereas the overall price level is not yet observed as falling. If there is resistance to relative price adjustments, stabilization policies may bring on a recession.

Thus far we have an explanation based on an *ad hoc* assumption. Typically, however, the goals of an anti-inflationary programme are known; what is less certain is whether they will be achieved. If there is symmetrical uncertainty about the achievement of the goal, as in the case of upward activism,¹⁸ i.e., if it is equally probable

¹⁷According to Lucas, this lesser trade-off stems from information problems; for the neo-Keynesians, greater variations in demand result in reductions in price-setting intervals.

¹⁸In the case of upward activism, there is no foreknowledge of the precise unemployment reduction target, nor of the nominal increase in aggregate demand and how long it will last. It must be assumed, then, that there is a symmetrical distribution of expectations about the real unemployment reduction target being pursued.

that effective inflation will be 10 points higher or lower than the target, there will be no systematic errors or resultant systematic reductions in output and employment. In the case of downward activism, however, it seems reasonable to assume that the uncertainty will point in only one direction, i.e., failures will occur only in the direction of an inflation which is higher than the projected rate. Accordingly, each company will tend to assume that the others will readjust their prices at an equal or greater rate than the target, making it virtually certain that overall inflation will exceed the target, thus bringing on a recession. This approach has been studied in depth in the South (Simonsen, 1988) in an attempt to explain price inertia caused by the strategic interdependence between economic agents and the consequent recessive tendency of anti-inflationary programmes.

The problem may be illustrated by an analysis of the dependency of a company's pricing policy on the assumed behaviour of its suppliers. Each firm must decide whether to adjust its price at the same rate as the government's target inflation, or at a higher rate. Its decision will largely depend on what it believes its suppliers will do, since its gains or losses will vary depending on its price relative to that of its suppliers. There will be four possibilities, then, as illustrated in figure 3. If both the firm and its suppliers adjust

their prices at a higher rate than the targeted inflation, the firm will retain its market share, although it will experience some losses (since there will be some recessive effect, on account of the generally overblown price level). It will come out ahead if it adjusts prices above the targeted inflation, while its suppliers remain within this limit. If it adjusts its prices according to the targeted inflation, it will neither gain nor lose so long as its suppliers do the same, but it will lose a great deal if the latter raise their prices above target inflation. Thus the firm will both minimize losses as well as maximize gains if it raises its prices above targeted inflation.

Moreover, since all other firms are apt to reason along the same lines, they too can be expected to set prices above targeted inflation, whereby we may conclude that this is the optimal price policy for the firm. Unfortunately, such asymmetry in expectations implies that all firms will set prices above the targeted inflation, bringing on a recession, since the error of each generates an externality on aggregate demand (a negative income effect, owing to the generally overblown level of prices). The challenge, then, is to create incentives so that each firm will adopt the socially optimal solution ($P = \text{target}$, P), for unless each firm can be reasonably certain that all others will also adhere to target inflation (especially its suppliers, including its labour force), it would be reckless for the company to set its prices according to the targeted inflation of the stabilization programme.

These are four hypotheses (among others) concerning rigidities in the goods market which help explain why companies tend to adjust to equilibrium from "above" (that is with prices above those compatible with the macroeconomic programme), and consequently why anti-inflationary programmes tend to be recessive.

To the extent that these explanations of price rigidity are valid, they suggest the usefulness of temporary intervention in the goods market during stabilization programmes in order to avoid a recession. The idea would be to maintain relative prices, but at lower absolute levels. For firms are able to keep their relative prices constant but run into difficulties if they need do so at the lower absolute price level compatible with aggregate demand. The co-ordination of price setting among firms

Figure 3

TABLE OF GAINS AND LOSSES OF A TYPICAL FIRM
(According to prices set by the firm and its suppliers)

		Firms supplying inputs	
		$P = \text{target } \rho$	$P > \text{target } \rho$
Firms producing final goods	$P = \text{target } \rho$	0	-
	$P > \text{target } \rho$	+	0

would justify policy intervention and require the use of an additional instrument (price controls) as long as the problem lasts.¹⁹

The purpose of price guidelines or controls would not be to repress inflation but to speed the adjustment of prices to a level compatible with aggregate demand policy. The essential objective would be to assure each economic agent, as far as possible, that its decision to adjust its price in accordance with the targeted inflation would not lead to a systematic relative loss, since all other economic agents would likewise be adjusting their prices according to the same target. This would mean co-ordinating expectations with each other and harmonizing them with the targeted inflation implicit in the monetary and fiscal policy.²⁰ The price and incomes policy is therefore not a substitute for, but a complement to, an aggregate demand policy aimed at lowering inflation without generating a recession.

3. Rigidities in the credit market

The basic assumption is that economic cycles are due to investment fluctuations; and the latter are associated not so much with the ups and downs of the real interest rate—which fluctuates relatively little, at least in developed countries— as with changes in the availability of credit.²¹

It is suggested that the main defect—intrinsic to capital markets—, arises from the asymmetry of information between lenders and borrowers concerning the feasibility or profita-

bility of the investment project in question. This creates two types of problems, which prevent rationing exclusively on the basis of interest rates; for a rise in this rate leads to an adverse selection of borrowers, since the more responsible potential debtors withdraw from the market, thereby increasing the probability that an unreliable borrower will be selected. Moreover, a perverse incentive (moral hazard) is created, since a higher interest rate leads to a preference for projects with greater variance, although their average profitability might even be less, since if they fail the loss to the debtors is the same, but if they succeed there is more to be gained.

Since a higher interest rate is likely to lower the quality of the average loan, the rationing of credit solely through interest rate becomes inefficient. Indeed, above a certain level, the effective profitability of a higher interest rate (taking into account the greater risk of the loan) may begin to decline. Accordingly, around this level, the supply of credit will tend to be relatively insensitive to the interest rate and credit will have to be rationed, no longer just by price, but by quantity as well. Variations in the demand for credit around this point will be met by greater or lesser rationing of this resource, whereas the interest rate will fluctuate but mildly.

Although the supply of credit will not be very sensitive to the interest rate, it will respond to the degree of uncertainty (or exogenous shocks). The presence of greater uncertainty will lead banks to contract the availability of credit. This is why recessions—which raise the risk of bankruptcy—are characterized by considerable reductions in credit, rather than interest rate increments. Conversely, in prosperous economies, where there is less uncertainty, credit availability will be greater at each level of interest rate.

The demand for credit will move inversely. Recessions (or prosperity) will diminish (or augment) the availability of funds, thus increasing (or reducing) the need for credit. During a recession, then, the demand and supply of credit will move in opposite directions, generating a shortage of this resource, or "credit crunch". Credit thus has a procyclical character, which cannot be offset by contrary movements in interest rates.

¹⁹The literature on this subject clearly suggests the existence of a price rigidity and co-ordination problem. Price controls may then turn out to be justifiable, although against this potential benefit should be weighed the administrative difficulties these entail and the abuses to which bureaucratic discretion lends itself. Their use should therefore be reserved for especially serious situations, in accordance with appropriate aggregate demand policies, and for brief periods.

²⁰This co-ordination problem is automatically resolved in a context of hyperinflation, since indexation and price-setting in such an economic setting are increasingly based on the free exchange rate, the only parameter whose value varies continually, is quickly and automatically known and has a wide-ranging impact on costs. Consequently, if the (free) exchange rate can be stabilized, all the other prices will fall into line automatically and synchronically, and thus—during hyperinflation—additional price controls will become redundant. For an analysis of this phenomenon in the Bolivian case, see Morales (1988).

²¹For a summary of the bibliography on this type of rigidity, see Gertler (1987) and Greenwald, Weiss and Stiglitz (1984).

The uncertainty attributable to asymmetry in information may be minimized through credit guarantees. However, this expedient also raises problems. In times of crisis, the value of the guarantees declines, bringing on a credit squeeze, even though the profitability of the projects may not have deteriorated. This favours established firms over newer or smaller firms.

The literature on this subject emphasizes the role of financial crises as well as monetary factors in explaining the depth and persistence of the Great Depression of the 1930s (Bernanke, 1983). Its relevance to the external debt crisis in the early 1980s in Latin America is obvious: variations in the risk of lending to the various countries was reflected not in differences in interest rates charged (on the contrary, these were fairly uniform among countries) but in a rationing of the amounts of credit provided. Thus, the crisis arose not so much from increases in international interest rates (1980-1981) as from the collapse of the flow of new credits (1982-1983).

Such an approach, however, requires considerable adaptation before it can be used to explain the recent crisis in domestic financial markets.²² For one thing, contrary to hypothesis, domestic interest rates did not remain stable. Nevertheless, even though interest rates did vary enormously, credit was rationed by other means as well: to wit, by discriminating between firms with and without adequate guarantees. The latter had limited access to credit i.e., it was rationed by quantity, while in the privileged segment, credit was rationed almost exclusively through the interest rate (with the exception of firms belonging to the same economic group as the banking system).

On the other hand, owing to the substantial availability of external credits and to high debt/equity ratios, firms found it more attractive to obtain loans than to worry about using them efficiently. Potential earnings were greater the more one borrowed, whereas losses were limited to one's own equity (much lower). Moreover, borrowing at high interest rates was not consi-

dered unduly risky, since interest rates were soon expected to decline. Similarly, owing to the low capitalization of most banks and the likely government guarantee on deposits which most felt existed should the need arise, few banks felt the need to operate cautiously, since they were essentially risking only outside funds. This explains the inability of the real interest rate, no matter how high, to contract (ration) the demand for credit.

The persistence of these rates, which were much higher than both the growth rate of the economy and firms' capacity to repay, forced the banking system to renew its loans, at any interest rate, to keep borrowers from going bankrupt. Once the crisis erupted, since banks could no longer ration by quantity and were forced to supply all the credit demanded by their borrowers, the banks' own solvency became increasingly determined by the deteriorating quality of their borrowers' investments. Instead of fulfilling a rationing function, high interest rates came to reflect serious imbalances in the overall economy (exchange lag, external overindebtedness), which led to an artificially high demand for credit. Thus the accrued interest rate would be extremely high (although it would never actually be paid).

These models also serve to explain the phenomenon of financial bubbles, arising from generalized optimistic expectations, fed and sustained through credit. When credit is procyclical, the positive expectations feed on themselves, giving rise to even more favourable expectations. The bubble swells on the basis of expectations and procyclical credit—even in the absence of real economic factors—, until it bursts as a result of some exogenous shock. What happened in the Argentine and Chilean stock markets (among others) up to 1980 is a case in point.²³ An unsophisticated, unregulated or poorly regulated financial system permitted the unfounded optimism of many to be transformed into collective euphoria, as long as this optimism could be fed by enormous flows of external credit.

²²Massad and Zahler (1987) examine the analytical consequences brought on by overindebtedness and the crisis in the domestic financial systems of the region since 1981. Massad and Zahler (1988) offer case studies for Argentina, Brazil, Colombia, Chile and Peru.

²³The real average value of a share on the Argentine stock market quadrupled between 1978 and 1980; and on the Chilean market, it increased by 16 times between 1975 and 1980. In both cases, these movements far exceeded the prospects of the real economy (Ramos, 1986).

V

The private and social cost of rigidities

Why don't such socially costly rigidities automatically set in motion strong incentives so that economic agents overcome them on their own initiative? The reply, in essence, is that while the social (macroeconomic) costs of such microeconomic rigidities are severe, of the highest order of magnitude, the private costs to enterprises (or the benefits derived from correcting their errors) are low, or second order (Mankiw, 1985; Akerlof and Yellen, 1985; Blanchard and Kiyotaki, 1987). This is because the macroeconomic costs of maintaining an overblown price are directly proportionate to the difference between the price charged and the correct or equilibrium price (since the total product will fall in the same proportion). On the other hand, the microeconomic incentive to correct any price error is

equivalent to the profit foregone by charging an incorrect price. For a competitive firm, this foregone income would be enormous (even infinite); in a context of imperfect competition, however, which is closer to the real world, the fall in profits is much less marked. This is why the assumption of imperfect competition is so important in these models.

This point can be easily and rigorously demonstrated. Profits (U) are a function of both sales (Q) and price (P). Although the volume of sales falls when the price is too high, the decline in earnings, which is what most interests the firm, is much less, for sales are made at high prices.

In more technical terms, $U = f(P, Q)$. A Taylor's expansion around the optimal price, P^* , permits us to conclude:

$$U(P) = U(P^*) + \frac{dU(P^*) (P-P^*)}{dP} + \frac{1}{2} \frac{d^2U(P^*) (P-P^*)^2}{dP^2} + \dots$$

$$U(P) - U(P^*) = \frac{dU(P^*) (P-P^*)}{dP} + \frac{1}{2} \frac{d^2U(P^*)}{dP^2} (P-P^*)^2 + \dots$$

Around the optimal price, the variation in profits attributable to a change in price approximates zero, so that the first term disappears. Thus,

$$U(P) - U(P^*) = \frac{1}{2} \frac{d^2U(P^*) (P-P^*)^2}{dP^2} + \dots$$

In other words, profits lost by setting an excessively high price are proportional not to the error in price ($P-P^*$), but to the square of the error in the price. Thus, if the price is set at a level 10% higher than equilibrium, the reduction in profits will be on the order of $(10\%)^2$, or 1%. The incentives to each firm to introduce the relevant correction are, therefore, of the second order $(P-P^*)^2$. However, the cost to the economy is of the first order, since the drop in total production (and aggregate demand) will be directly proportional to the difference between the price

charged and the equilibrium price ($P-P^*$). Hence, although the macroeconomic cost of price (or wage) inertia or rigidity is high, the private cost to the firm *seems* low.

It is not that recession does not entail serious costs to the firm. The problem is that correcting its "error" in prices will improve its profits only marginally, for the expansion of demand for the firm's products depends not only on the correction of its price (an improvement of the second order) but on the simultaneous correction of their prices by all other firms (an improvement of the first order). This eventuality does not depend on the company's own behaviour (an externality in aggregate demand). To be sure, the firm will tend to correct its own prices, but since its incentive is weak, it will do so slowly.

Furthermore, it is intuitively obvious and can be shown (Akerlof and Yellen, 1985) that the greater the number of firms which maximize

(as above) slowly or incompletely (the probable situation in the South), the less costly this process will be for each of them, since they will lose little to their competitors, and thus the less severe the "penalty" they pay for being "inefficient". In other words, the fact that some firms are prepared to tolerate rigidities —for these

have but second order effects on their profits—is enough to bring about serious and prolonged macroeconomic effects, without this being sufficient to automatically speed up correction. Price inertia can coexist with economic rationality, then, without violating the principles of maximization, at least to a first approximation.

VI

By way of conclusion

1. *Convergences*

At this point there is no doubt that expectations are a basic, determining factor in the behaviour of economic agents and produce consequences of the first order for macroeconomics. Likewise it seems best to assume maximizing behaviour, on the part of all agents, both for reasons of consistency as well as to allow for some learning to take place. Although this involves modelling expectations in "rational" terms, it does not mean that all information is readily and immediately available to agents nor that these are free of perceptual errors. Nor does it mean, in the absence of sufficiently developed future markets, that the agent will be able to predict with ease the permanence of a policy, or how its competitors' expectations will be formed. Difficulties in this area may give rise to false or incomplete transactions; errors of co-ordination; or simply imbalances similar to those produced by adaptive expectations and *ad hoc* rigidities. What is new is the need to describe the error or rigidity causing the imbalance, and not just to postulate a presumed error arbitrarily or groundlessly.

The need to identify and specify the error and reconcile it with the agent's maximizing behaviour has led theoreticians to give priority to the necessity of building macroeconomics on solid microeconomic foundations. For this reason they have attached so much importance to game theory and advances in the field of industrial organization to explain, respectively, non-co-operative interactions among groups and the behaviour of firms in imperfect competition. This move towards establishing the microeco-

mic foundations of macroeconomics has shifted interest away from disequilibrium theories. Recent efforts have turned to the identification of the origin of disequilibria, rather than the explanation of its consequences, so well provided by disequilibrium theories.

2. *Critical and promising topics*

Similarly, major progress can be expected in four additional areas of crucial importance for both the South and the North.

a) *Credibility*

With credibility, even bad policies may yield good results for a time; without it, however, even the best policies will be very costly. This is why credibility is such an important asset, not to be squandered. What can be done if it is absent? This is the South's typical problem when a new stabilization programme is initiated. A prerequisite for gaining credibility is that the programme should be consistent and appropriately implemented. However, this is not enough. How can the public be convinced that the programme will last, and that it will not be set aside at the first sign of an obstacle? Since nothing and no one can guarantee that the programme will be maintained, uncertainty arises about its implementation, although in only one direction: that inflation will be higher, never lower, than the target. For this reason, expectations tend to adjust slowly, and "from above", to the targeted inflation, thus bringing on a recession.

Moreover, even if an agent is convinced of the good design, consistency and permanence of the stabilization programme, he is entitled to ask whether other economic agents, especially his competitors and suppliers, will adjust their prices instantaneously and completely according to the targeted inflation, or only partially and "from above", until they see the results (Di Tata, 1982). A vicious circle is thus created, in which the very expectations that the programme will be only partially successful lead to its failure; inflation comes down too slowly, and recessive trends are generated. The government is faced with the dilemma of either pursuing its inflationary target—at the risk of provoking a recession—or slackening in its pursuit ratifying the public's expectations (skepticism) and thereby further weakening its own credibility.

Thus, at least as regards changes of policy régime, the public's expectations may well be adaptive (i.e., the public is skeptical). Systematic modifications of policy within a given régime (e.g., management of anticyclical fine tuning) can be anticipated; but not changes in policy régimes. For the government's commitment to maintaining the new policy régime (i.e., the anti-inflationary programme) cannot readily be known nor ascertained.

Once the change of régime gains credibility, however, decelerations in aggregate demand will fall on prices alone. On the other hand, as long as there is no such firm conviction, the public's skepticism will slow price adjustments, making the stabilization programme recessive.

The challenge, then, is to convince the public that the new régime (low inflation) will be maintained, so as to avoid a severe and protracted recession. The reasoning behind the price and wage policies of the recent heterodox stabilization programmes in Argentina, Brazil, Mexico, Peru and Israel point in this direction. These policies may be interpreted as attempts not to repress inflation but to guide and harmonize the inflationary expectations of agents among themselves and with the targeted inflation implicit in economic policy, so as to avoid a recession while public uncertainty persists about the general credibility and permanence of the new policy. Obviously, if the rest of the economic programme—in particular, fiscal policy—is

inconsistent with the targeted inflation, the programme will be doomed to failure, as was the case in Argentina, Brazil and Peru (Ocampo, 1987).

b) *Multiple equilibria*

A common feature of the above-mentioned rigidities is that they admit the existence of more than one equilibrium for a given stabilization policy; one, at a lower inflation with full employment (an absolute optimum); another, of recession with excessive inflation (a local maximum, but an absolute suboptimum). This is especially likely to occur when it is believed that the first reaction of producers to a contraction of demand is to maintain their prices so that a period of quantitative restrictions on sales can be foreseen. In other words, the expectation that adjustments will be in quantity rather than in prices will tend to induce firms to behave in accordance with this assumption. Thus, at least for a time, expectations will become self-fulfilling prophecies, giving rise to various local equilibria, each of which is consistent with a different set of expectations: optimism generates prosperity; pessimism, recession; and expectations of stagnation, more stagnation.

None of these equilibria can be discarded as irrational. Moreover, since the incentive for each agent to act depends on how it believes others will act, a suboptimum could become a point of equilibrium. One justification for intervention on the part of the economic authorities could thus be to move the economy from such a suboptimal equilibrium to an optimal one.²⁴

In fact, a good part of the logic of intervention—especially of heterodox stabilization programmes—against "inertial inflation" may be understood as an attempt to move the economy from a high inflation equilibrium to one with low inflation, for a given "inflation tax". The latter is nothing else than the product of the inflation rate times the monetary base. Since the real monetary base contracts as inflation increases, beyond a certain point the reduction in the base exceeds the rise in the inflation rate, and

²⁴In order to determine whether this provides enough justification, it would be necessary to assess the possible costs of each intervention.

thus it may happen that, with two substantially different rates, the same inflation tax is paid. Lowering inflation from a high equilibrium rate to a low equilibrium rate would then require a co-ordinated move of prices (a price and incomes policy) rather than a reduction of the deficit.²⁵

Just as important as admitting that rigidities may make the system come to rest at a local but suboptimal maximum is the recognition that the possible equilibria are not indifferent to the path chosen to reach them. In other words, the economic system is not necessarily reversible; what represented an optimal equilibrium before a recession might no longer be viable after the recession, especially after a prolonged one. Brief downturns (with respect to trends) in employment and investment levels may well be recoverable in the expansive phase of the cycle, and the system would then return to its optimal equilibrium. The same is not true, however, for shocks of longer duration (Arida, 1985). Long-run growth may return to its historical rate, but the availability of capital and therefore the *level* of production will be lower, since the optimal level of equilibrium is sensitive to the transition process and its duration (*hysteresis*).

The long-run Phillips curve will in any event be vertical, although at two different levels of "full employment". In this context, monetary and fiscal policies will be important not so much to restore cyclical deviations from one of the full employment equilibria, but more basically to ensure that the long-run equilibrium consistent with a more productive full employment is reached.

c) *Automatic adjustments and the "corridor" of credibility*

If various possible equilibria exist—depending on the state of expectations—, to which of them will the market spontaneously lead? Since the free interplay of supply and demand is a good adjustment mechanism for small variations (marginalism) around equilibrium in a given market, presumably marginal deviations from equilibrium will be corrected automatically by market forces inducing a con-

vergence to optimal equilibrium. But when the deviations are large, when they affect more than one factor and, especially, when they require considerable co-ordination between agents and markets, the spontaneous operation of the market will probably be seriously flawed. This is what led Leijonhufvud (1981) to formulate the hypothesis that within a certain corridor (moderate deviations), market forces are stabilizing. Outside this corridor, the trends toward convergence are considerably weakened, since co-ordination difficulties are exacerbated and ultimately give rise to false and incomplete transactions and an overall failure of market signals.

There are two situations in which this hypothesis is especially important for the South. One is the case of a severe and prolonged recession, in which the market's co-ordinating role (which leads to optimal equilibrium) has broken down. For example, a decline in wages will minimize unemployment due to imbalances in the labour market alone. However, such a decline could be counterproductive if unemployment originates in a disequilibrium in the goods market due, for example, to the prevalence of inflated prices which make it impossible to sell all that can be produced. In this case, according to disequilibrium models, and contrary to the spontaneous reaction of the market, it is prices which must fall, and at a greater rate than wages, in order to recover normal levels of sales, production and employment. In other words, as long as price and wage adjustments in the goods and labour markets are not synchronized and co-ordinated, the recession will go on.

The second situation occurs when policy régimes change. It is what happens at the inception of a strong anti-inflationary programme, whose target cannot be fully anticipated or believed by the market, and in which it is likely that the agents will approach equilibrium asymmetrically, "from above", with prices rising at a rate higher than targeted inflation. Both situations—which are clearly located outside the corridor in which the market is truly efficient—will give rise to a recession or the persistence of one, if there is no clear and definite intervention by the authorities to co-ordinate expectations and harmonize the behaviour of agents with the targeted inflation implicit in macroeconomic policy.

²⁵To be sure, lowering inflation to zero would require reducing the deficit, since the inflation tax at zero inflation also falls to zero.

d) *Institutions*

If many macroeconomic problems stem from insufficient information about the behaviour of other economic agents, and, especially, if different sets of expectations can give rise to very different equilibria, questions may be raised about the feasibility of reducing information needs or of anchoring expectations in order to attenuate the degree of uncertainty with respect to equilibrium.

The answer to both questions may be to establish behavioural norms that could be agreed on beforehand, although defining these is no easy matter.²⁶

From this point of view, many economic institutions (contracts, indexation schemes, bankruptcy laws, guarantees on deposits, labour legislation) are aimed at lessening uncertainty about others' behaviour, especially when this involves trading off a future promise for a current commitment. Far from being imperfections, these are mechanisms that try to reduce the degree of instability and risk stemming from a situation in which any agent may do anything. By narrowing (by agreement) the range of unpredictability, these institutions generate a more stable and less risky behaviour. Moreover, by lowering the cost of transactions between future and present commitments, they facilitate trade and help raise the standard of living.

On the other hand, however, in analogy with the debate on rules and discretionality, such norms and institutions limit the flexibility and speed of response to unexpected situations. Although rules are modifiable, it is very costly to change them. Thus, unless the changes are well grounded and are intended to be long-lasting, the choice will probably be to extend the current norms and institutions, although they may no

longer be very appropriate to the new circumstances. For example, the rules for wage indexing are suitable for persistent inflation, since they reduce the likelihood of random redistributions in income; however, they may become disadvantageous if the aim is to lower inflation, since they tend to slow price adjustments, thereby bringing on recession. The most appropriate institutionality will depend, then, on the probable economic context: in this case, indexing if there is persistent inflation; no indexing if there is little or no inflation.

On the other hand, unforeseen economic circumstances, especially those which exceed expectations, require vigorous compensatory action, which must certainly include the immediate modification of norms and institutions, all the more so if these are inducing behaviour which is unsuitable in the new circumstances.

To be sure it is always possible to renegotiate the rules individually. However, unless the costs of not renegotiating are very high for both parties (or a repetition of the "game" is expected, where winners and losers might trade places), the obstacles will probably prevent such a renegotiation, despite its high net social benefits. This divergence between social and private benefits is an argument in favour of government intervention. Arguments against it include, on the one hand, the risk of the wrong kind of intervention and, on the other, the cost of the greater uncertainty arising from the very changing of the rules. This provides just one more argument in favour of limiting changes in institutions and norms to cases of abnormally wide deviations, i.e., for especially acute and prolonged recessions or very high inflation rates: in other words, within the normal cycle, stable rules (whether or not contingent); outside this corridor, activism.

²⁶For example, some feel that norms should be defined with respect to instruments managed by the authorities (such as the monetary base), which would maximize simplicity and control; others, however, prefer norms with respect to results (such as price stability), especially when the relationship between the instrument and the results is slow, uncertain or equivocal. Likewise, rules may be devised for different contingencies (e.g., depending on whether

there is higher or lower inflation, unemployment or external imbalance). Unfortunately, the greater the number of contingencies, the less predictable and more discretionary their application. A rule may be defined, on the contrary, that is to be followed regardless of contingencies (e.g., a fixed expansion in the money supply), but although this expedient is simpler, it entails the risk of disaster if unforeseen economic situations occur (Blinder, 1987).

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