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Inertia, Coordination and Corporatism

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1. Introduction

Inflationary inertia, loosely defined as the process by which the economic system transforms past inflation into current inflation, is not usually considered a problem on its own right. Yet one of the most important insights developed in connection with the recent Latin American inflations is notion that inertia is not necessarily associated with the basic determinants of inflation: it might be related with a number of institutional factors and rigidities that are unrelated with the "fundamentals" of the process. On the other hand, inertia is often assumed to be generated either by "less than rational" inflationary expectations or by "rigidities" such as backwards looking indexation. This paper argues differently; it suggests that the inertia phenomena should not be seen as an *ad-hoc* rigidity vitiating the market mechanism but as quite an organic feature of large capitalist economies.

The paper develops the notion that inertia is an expression of a problem of coordination of wage and price setting decisions. The problem of stabilization, at least as far as the inertia problem is concerned, is but loosely related to the determination of market clearing real wages or the relevant distributive shares; it involves only the "height" of the "vicious spiral" or of the Phillips' curve. The problem is essentially one of engineering coordinated restraint, though it may or may not involve changes in relative prices/incomes. This paper's approach is to consider the inertia problem, namely the problem of coordinating restraint, in isolation of the "fundamentals" of inflation. That obviously does not imply either that inflation is always purely inertial or that coordination devices are all we need for stabilization policies. Our point is merely that even when "fundamentals" are not a problem, the inertia issue is a very difficult one to address.

The key to the paper is the idea that stopping the spiral involves a "free rider" problem: "small agents would always be strongly compelled to withhold their contribution to the collective stabilization effort so long as the impact of their individual decisions over the outcome of the plan seems negligible when seen in isolation. The core of the paper is a very basic model in which this idea is formalized in very simple terms. The purpose is merely the one of illustrating the underlying mechanisms in an elegant way, though we are aware that care should be exercised on every step of the way especially as far as interpretation is concerned.

The model's more important conclusion is the association between inflationary inertia and the broadly defined degree of corporatism or "organization" of economic interests. Some work has been produced along these lines addressing the contrasting stabilization performances of the OECD economies during the I970s[2]. We comment on this work in section 6 and we also suggest ways to apply these ideas in the Latin American context. The paper is very simply organized: section 2 defines

[2] For example, in C. Crouch (1985), J. McCallum (1983) and M. Bruno/J. Sachs (1984).

the issues in detail, sections 3 through 5 lay down the model, while section 6 discusses applications and extensions. The last section merely recollects the main conclusions.

2. Price Stability as a Public Good

The influence of strategic behaviour over stabilization policy is a growing area of research; yet strategic behaviour has been considered only in a framework where the stabilization problem is treated as a policy game between the central bank and an entity termed "the public"[3]. That actually means that one of the most important parts of the problem, the interaction among agents, is very simply wiped under the rug; usually the assumptions assuring the existence of a *representative agent*, turn out to be treated as if they implied a *single agent* economy. Of course, there is nothing implicitly illegitimate about working with a Robinson Crusoe economy so long as fundamental aspects of the problem at hand are not assumed away. This turns out to be the case for even in an economy formed with identical individuals – in case of which a representative individual certainly exists – strategic interactions would not be ruled out. In a Robinson Crusoe economy, problems of coordination are senseless by construction, and in this sense a single agent economy hides some of the most interesting aspects of the inflation stabilization problem.

This paper's point of departure is that the economy should be thought as composed of a collection of rational decision-makers that are aware of their interdependence and the importance of their interaction as long as the social outcomes are concerned. When confronted with a stabilization initiative, for instance, agents will govern their behaviour according to their assessment of the merits of the plan and also according to their idea of what other agents would do. It is not merely a question of credible government actions but how individuals willing to explore every single chance to profit will react to the plan. It will be argued that there is a "structural" compulsion to dissent or to be "pessimistic" as regards inflationary expectations, for "small" agents can enjoy the stabilization without bearing the sacrifices. On assessing the "public's" responses to a stabilization initiative, in a context of multiple interacting rational agents, an agent who feels that his decision has a negligible impact on the overall outcome of the plan, will have a very strong incentive to "err" his inflation forecast on the pessimistic side for any "overestimation" of actual inflation would result in gains for those making the "mistake"[4]. This compulsion of marginal actors to dissent from the norm, provided

[3] See, for example, E. Phelps (1979), J. Driffill (1984) and D. Backus/J. Driffill (1985) and references therein.

[4] Whether such gains are permanent is a matter of debate. It could be argued that if the stabilization effort is starting from an equilibrium position, such "mistakes" would result in some agents charging prices above equilibrium levels and in this sense such "gains" would eventually be taken away "by the market". But this is not necessarily so. A partial equilibrium justification is that in the absence of perfect competition price increases might not be self-defeating, and quite on the contrary, such defensive increases provoked by "free-riding" might act as a mechanism to enhance oligopolistic coordination. In a general equilibrium context, the outcome is even less clear for such "mistakes" would actually bring about a whole new equilibrium vector of relative prices/distributive shares which could certainly imply a movement along

they can still enjoy the outcome of the collective effort, characterizes very clearly a *free rider problem*. As a matter of fact, the problem of stabilization can very easily and very usefully be thought as a problem of the provision of a public good[5]. Price stability satisfies "jointness of supply" and also "non-excludability" properties at least as far as insignificantly small agents, whose non-compliance to the collective stabilization effort would not even be perceived, are concerned. For "large", or more "visible" actors, however, such as large unions and corporations, there could be some "exclusion" to the extent that the government could "punish" their "pessimism" or their negative contribution to the collective effort.

The classic public finance problem of charging each agent for his consumption of the public good finds an interesting correspondence in this context: it is difficult to devise mechanisms to allocate the "costs" of the public good. In fact, the problem is less one of financing but one of coordination, and in large decentralized economies with millions of heterogeneous decision makers governed by self-interest, this problem has gigantic proportions. As in the pure public good case, the allocation of burdens, or the coordination device does not involve a market process: there is no market for "price stability", whose "price signals" would coordinate "producers" and "consumers" decisions[6]. Mechanisms of coordination in this context should have to be engineered on an *ad-hoc* basis. Clearly enough there is no "invisible hand" guiding capitalist economies to price stability, the same way no automatic mechanisms exist – as it is well known today – to assure full employment.

A number of results and insights developed within the framework of the theoretical literature on public goods can perhaps bring some light into the issue. One very significant result, originally due to Mancur Olson (1965), is that the underprovision of the public good, as caused by free-riding behaviour, would increase with the size of the community. This would mean that, other things equal, a large decentralized economy would be more prone to inflationary inertia or to "pessimistic" responses to stabilization attempts that a more centralized and corporatist society with "fewer" and "larger" agents. Another interesting result is the notion that the Nash equilibrium, as regards the provision of the public good, is not Pareto optimum. In our case this would mean that the non-cooperative behaviour would tend to produce a degree of inflationary inertia greater than under cooperation; this could be interpreted as meaning that inertia should be stronger in societies with less "social consensus". A third relevant result is the symmetry of equilibrium configurations to be found

a Pareto frontier to a position more favourable to those "pessimistic" agents.

[5] See, for example, D. C. Collander/K. J. Koford (1985) and M. Wallace (1983- 84).

[6] It has been argued that, "like money economic stability has no unique market of its own, but trades in all markets. Except for governments, no private individual intentionally "purchases" economic stability. It would be irrational for a single individual to attempt to "purchase" stability. Attempts by an individual to increase spending, make new loans, or heavily invest in new project "to turn the economy around" in a time of economic downturn would have no perceptible effect on the economy and would subject the individual to great risk. Nor does it make any sense for an individual purposely to "purchase" less stability during times of prosperity by cutting back on profitable investments or reducing utility maximizing consumption plans.", cf. M. Wallace (1983-84), p. 298. See also D. C. Collander/K. J. Koford (1985).

within the framework of identical agents. A certain level of provision of the public good would be compatible with several equilibrium positions that would differ only as regards the distribution of endowments, or as regards who effectively paid for the public good. In our case this would mean that an inflationary equilibrium would be compatible with several possible income distribution configurations depending on who is free riding[7]. These ideas can be very simply formalized – as done in the next three sections – so as to highlight the mechanisms involved.

3. The Model with an Individual Agent/Coalition

We are going to consider an economy experiencing a "purely monetary" inflation, or alternatively a "purely inertial" inflation, in the sense that relative prices/distributive shares do not need to be changed for the economy to pass from the inflationary to the stable prices steady State. That means basically that we are assuming away "fundamentals" so as to identify the determination of inflation with the outcome of the inertia process. This simplifies the formal presentation of our results, but implies that we should be very careful with the interpretation of our results.

Let us consider this economy as having one fully employed factor, labour, and that producers price their goods according to a fixed mark-up rule. Assume further that money creation is entirely passive or fully accommodative in the sense of the Central Bank following a "real bills" rule at some "normal" or "natural" real interest rate. Workers-consumers are assumed utility maximizes in a conventional sense and their utility functions are assumed to imply a unit income elasticity in consumption. For each worker we will write a utility index which will have the character of a conventional indirect utility function. This utility index will include as arguments, the change in real income – measured by the difference between nominal wage growth and inflation – and the level of inflation, thus assumed to represent an inconvenience as such[8]:

$$V^i = V^i(\widehat{w}_i - \Pi_t, \Pi_t), \;\; V_1 > 0, V_2 > 0 \tag{1}$$

It is readily observable that if equation (1) refers to individual workers who exercise no

[7] Other possible analogues with public finance results that might be relevant to our problem could be, for example, the issue of the impossibility of private provision of the public good, the issue of "pricing" of the public good, and the possibility of constructing incentive compatible mechanisms to resolve the underlying free rider problem.

[8] This formulation is at variance with the recent work on the strategic aspects of stabilization policy games, which, in general, considers a setting in which unions fix the wage a profit maximizing firms choose the level of employment, for example D. Backus/J. Driffill (1985) and J. Driffill (1984). The inclusion of this feature in our model could certainly bring about a number of relevant issues, but it would make less clear the results this chapter wishes to emphasize. We choose then to omit considerations as the level of capacity utilization of firms, and it does not seem that this assumption results binding or crucial for our results. In this connection our model could be though as a model for a very short term period within which firms are unable to change their levels of employment.

influence over the inflation rate, then equation (1) represents no more than an ordinary indirect utility function monotonically increasing in income[9]. The interesting feature of (1) is that it might as well describe the behaviour of a union or of a coalition of workers for which the rate of inflation is not a given *datum*. In this connection it is convenient to define inflation as a weighted average of all price (wage) increases in the economy:

$$\Pi_t = \sum \beta_i P_i = \sum \beta_i \hat{w}_i \,, \sum \beta_1 = 1 \tag{2}$$

The βs can be interpreted as the share of consumers' expenditure allotted to specific products, which is actually an indication of the "size" of a determinate sector at least as far as the inflation rate is concerned. Under certain conditions, namely concavity of $V(.)$, maximizing (1) subject to (2) yields an optimal rate of growth of the nominal wage. The rationale for the existence of this solution is that increases in the nominal wage generate some utility but also some inflation, so that a point would be eventually reached in which the marginal disutility of inflation is so large that it cancels the increases in utility generated by increasing nominal wages. This can be made explicit by establishing a specific functional form for (1):

$$V^i = V^i(\hat{w}_i - \Pi_t, \Pi_t) = \hat{w}_i a. \Pi_t - b \quad a, b > 0 \text{ and } b > a \tag{3}$$

Expression (3) can be thought as describing the utility index of workers of industry i. The assumption that $b > a$ assures concavity in $\hat{w}$ or that a maximum exist for any $\beta \neq 0$; the exact location of this maximum would depend on the "size" parameter β. In order to make this more clear it will be useful to assume that the "rest of economy", a coalition of size $1 - \beta$, is bound by indexed contracts assuring wage increases equal to past inflation. In these conditions, the expression for the inflation rate can be rewritten as[10]:

$$\Pi_t = \beta \hat{w}_t + (1 - \beta)\Pi_{t-1} \tag{4}$$

Equation (4) States that current inflation is simply a weighted average of the wage (price) increases in the specific industry under consideration and the increases determined in the other industries, assumed to be equal to Π_{t-1}. A couple of alternative interpretations could be given to

[9] We are actually considering the change in income, as the argument for $V(.)$.
[10] We, are from now on, omitting the subscript i as in this section we are dealing with the behavior of an individual or individual union.

equation (4) and to the parameter β. We could identify Π_{t-1} with international inflation or with exchange rate depreciation caused by an external imbalance; in this case β would be the "size" of the non-tradable sector and $1-\beta$ a measure of the degree of openness. Alternatively, if we think of an economy with overlapping wage contracts, then Π_{t-1} could be though as current inflation and β as related to the proportion of contracts currently open for renegotiation. By maximizing (3) subject to (4), we obtain:

$$\widehat{w} = \left[\frac{1-\beta}{\beta}\right].\left[\frac{a}{b-a}\right]\Pi_{t-1} \tag{5}$$

From (5) and (4) we obtain a relation between current and past inflation as function of the size of the indexed sector and the optimizing behaviour of the individual agent:

$$\Pi_t = (1-\beta).\left[\frac{b}{b-a}\right]\Pi_{t-1} \tag{6}$$

Equation (6) should be interpreted with great care. it should not be seen as a theory of inflation, but a description of the way the economy translates past inflation into current inflation. This is only a theory for the "inertial" component of current inflation; whatever created inflation in the past might still be operative in the current period, in case of which this influence will be superimposed over the inherited inflation.

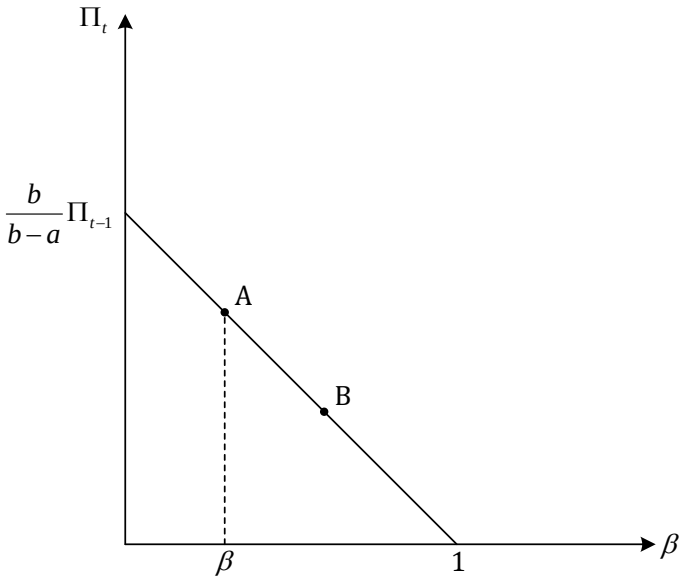
The role played by the parameter β in equation (5) and (6) is very important. Note that for the case of insignificantly small agents, i.e., $\beta \to 0$ the coefficient in equation (5) tends to infinity, expressing the fact that a "marginal" agent will set this wage increase as high as possible. The current rate of inflation will not be infinite, actually, though the inertia coefficient in equation (6) will be greater than one, indicating that inflation would be accelerating. On the other extreme, for $\beta = 1$, i.e. the economy is actually a single agent economy, both coefficients in equations (5) and (6) are null. In this case, the increases in nominal wage are fully transformed into inflation, as equation (4) becomes simply $\Pi_t = \widehat{w}_t$. In this case a rational Robinson Crusoe easily perceives that it is senseless to try to run ahead of inflation that he is actually creating and will naturally see no reason to continue with a procedure that results to be a nuisance. The existence of inflation in a Robinson Crusoe economy is entirely senseless; it is not surprising that inflation can be easily wiped off in single-agent-economy models where "the public" is rational. For values of β between 0 and 1 the behaviour of the inertia coefficient in equation (6) is depicted in Graph 1.

Again one should be careful with the interpretation of equation (6). While the parameter 13 could be

seen as the size of the coalition that expresses in its collective action a concern about the level of inflation, yet equation (6) could simply be seen as relating the degree of inflationary inertia with the size of the indexed sector or the proportion of contracts currently open to negotiation. It turns out that the latter interpretations are of special relevance only in this single agent/coalition framework. With more than one agent/coalition, the size of the indexed sector ceases to be the main source of inflationary inertia to become an "anchor" or a baseline inflation which is "multiplied" by agents' strategic behaviour.

Graph 1

Inertial Inflation and the Size Parameter



4. The Model with More Than One Agent/Coalition

Let us consider then an economy with two agents/coalitions, that we will term β and α, and an indexed sector. The expression for the inflation rate can be rewritten as:

$$\Pi_t = \beta.\widehat{w}_\beta + \alpha.\widehat{w}_\alpha + r.\Pi_{t-1} \qquad (7)$$

where $r = 1 - \beta - \alpha$ is the size of the indexed sector. We will assume that the two agents/coalitions have identical utility indexes and that they differ only insofar $\beta \neq \alpha$. The next step is to maximize individual utility functions as given in (3), subject to equation (7), from which we obtain the following reaction functions:

$$-(b-a).\beta.\widehat{w}_\beta - a.\alpha.\widehat{w}_\alpha = a.r.\Pi_{t-1} \qquad (8)$$

$$-a.\beta.\hat{w}_\beta + (b-a)\alpha.\hat{w}_\alpha = a.r.\Pi_{t-1} \tag{9}$$

from which we obtain a Nash equilibrium solution given by:

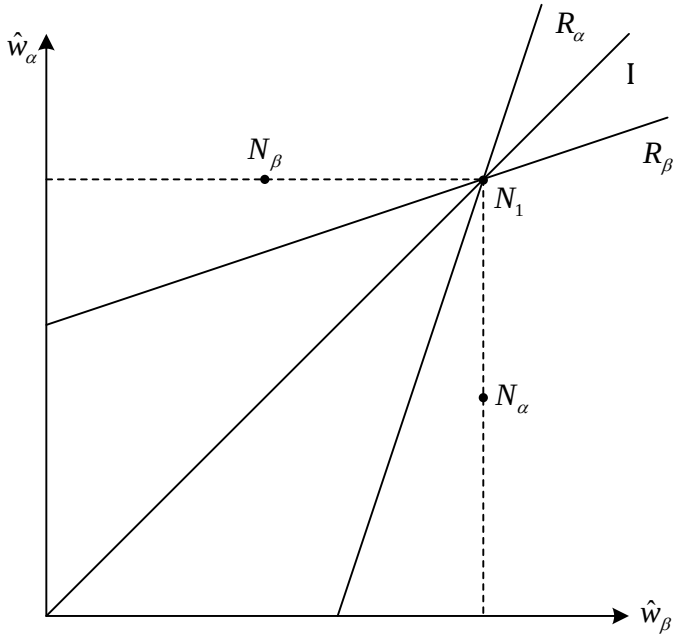
$$\hat{w}_\beta = \left[\frac{a.r}{b.\beta}\right].\Pi_{t-1} \tag{10}$$

$$\hat{w}_\alpha = \left[\frac{a.r}{b.\alpha}\right].\Pi_{t-1} \tag{11}$$

These relations are depicted in Graph 2 that shows several Nash equilibria for several configurations. Graph 2 displays the reaction functions (8) and (9) as curves R_α and R_β respectively, and the Nash equilibrium N_1 characterized by equations (10) and (11). Note that along the 45° ray we have the equilibrium configurations for coalitions of the same size, i.e., $\beta = \alpha$. A movement from N_1 towards I is the result of both coalitions being reduced in size and the indexed sector increased, like a movement from B to A in Graph 1. The reverse movement, from N_1 to the origin means that both coalitions are increased at the expense of the indexed sector, as a consequence of which the degree of inertia is reduced.

Graph 2

Nash Equilibria for Two coalitions:



Points like N_α and N_β show Nash equilibrium positions for coalitions of different size, but for an unchanged size of the indexed sector. For an enlarged β-coalition at the expense of the α-coalition

a point like N_α would obtain. It is interesting to note that the larger coalition would have a *lower* increase in nominal wage, a result which we will comment at some detail later.

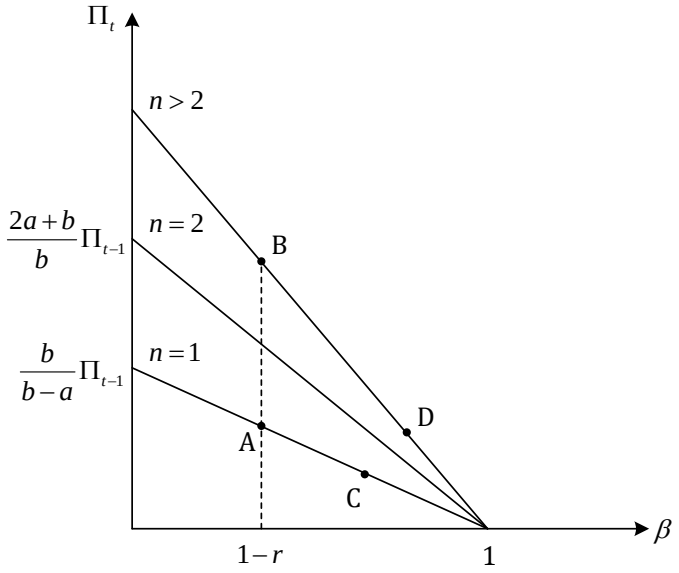
To clarify the effects of the introduction of a second agent/coalition, we use equations (10) and (11) to write the relation between current and past inflation as given by (7):

$$\Pi_t = (1 - r)\left[\frac{2a + b}{b}\right]\Pi_{t-1} \tag{12}$$

It is interesting to compare (6) and (12) with the help of Graph 3:

Graph 3

Inertial Inflation: size parameter and number of coalitions



The graph shows very clearly that as the number of agents/coalitions increase, for a given size of the indexed sector, or for a given proportion of contracts open to negotiation, we observe a higher degree of inflationary inertia, as expressed by the vertical movement from A to B in Graph 3. The more "splitting" or the less "organized" the economy becomes, the stronger the mechanism by which past inflation becomes current inflation. On the other hand, as the economy becomes more "centralized" or "corporatist" for a given set of unions/coalitions, or there is an increase in unionization or in the propensity to organize – as expressed in Graph 2 by a movement from B to A – the weaker inflationary inertia becomes. The horizontal movement from A to C and from B to D imply reductions in the indexed sector. This could be though as a *reduced* propensity to adopt indexation, as we would expect if inflation is, for some reason, made less unpredictable. it could be also determined by an increased synchronization of contracts; if, for instance, the average contract

length is being reduced, then an increasing proportion of contracts becomes open for negotiation at every point in time. It is important to note that the size of the indexed sector, or the degree of desynchronization is no longer the only source of inertia. Note, for example, that in Graph 2 points A and D characterize the same level of inertia for two different sizes of the indexed sector.

The "classic" public finance results mentioned a few paragraphs back find a very clear illustration in Graph 3. That the Nash equilibrium in the provision of the "public good" is inferior to the cooperative solution is easily verified by the fact that inertia at A is lower than at B; this means that with the "merging" of several coalitions the economy approaches the cooperative equilibrium, and the enlarged collective concern about the consequences of inflation lead to less ambitious wage demands, and consequently less inflation, leaving all better off. The notion that the under provision of the public good decreases as the economy become "smaller" can be seen in Graph 3 in the vertical movements from B to A. It is also easily seen that as individuals are identical the membership in α or β coalitions is actually irideterminate. Since coalitions of different size enforce different wage adjustment rules the membership assignment is important as regards income distribution, so that each equilibrium point would be compatible with many possible membership configurations.

5. The Membership Issue

These considerations have been essentially descriptive, in the sense we did not discuss the incentives involved in coalition membership[11]. The decisions involved are basically the one by the individual worker of whether or not to join a coalition, and by the coalition of whether or not to extend its membership. Let us consider the coalition decision first. At a point of cooperative equilibrium, like point A in Graph 3, it is easily verifiable that the level of utility of the β-coalition is:

$$V^c = \bigcup(\beta, \Pi_{t-1}) = a \log \frac{a(1-\beta)\Pi_{t-1}}{(b-a)\beta} - b \log \frac{b(1-\beta)\Pi_{t-1}}{b-a} \tag{13}$$

Maximizing V^c with respect to β, one finds that the optimal coalition size is $\beta = 1$, so that in a cooperative equilibrium the β-coalition would always be interested in increasing membership. In a Nash equilibrium position, however, the picture is somewhat different. The optimal level of utility is given by:

$$V^N = \bigcup(\beta, \Pi_{t-1}) = a \log \left[\frac{ar\Pi_{t-1}}{b\beta}\right] - b \log \left[\frac{(2a+b)(1-r)\Pi_{t-1}}{b}\right] \tag{14}$$

[11] Stretching our group of public finance analogies further, this is a typical problem of club theory.

Differentiating equation (14) with respect to changes in β and in r we would get:

$$\Delta V^N = \left[-\frac{a}{\beta}\right]\Delta\beta + \left[\frac{a}{r} + \frac{b}{1-r}\right]\Delta r \tag{15}$$

from equation (15) it can be observed that if the size of the β-coalition is increased at the expense of the indexed sector, i.e. $\Delta\beta = \Delta r$, we would get:

$$\Delta\frac{V^N}{\Delta\beta} = \frac{br\beta + a(1-r)(\beta - r)}{r(1-r)\beta} \tag{16}$$

A sufficiently small indexed sector would assure that extended membership would increase utility provided that other coalitions retain the same size. This is basically what we had for the cooperative case: increased size increases utility if new members come from the indexed sector. In contrast, if we take as constant the size of the indexed sector, then equation (15) indicates that:

$$\Delta\frac{V^N}{\Delta\beta} = -\frac{a}{\beta} \tag{17}$$

This meaning that coalitions would not be interested in new members coming from other coalitions, or the merging of two coalitions would *not* result beneficial to either one. This is basically due to the fact that as coalitions merge their influence over the rate of inflation is increased and so is their propensity to exercise wage restraint. Smaller coalitions would actually enforce *larger* wage increases, as we saw in connection with Graph 2, so that individuals would rather belong to smaller unions and these would rather not grow. This is very clearly seen as regards the individual work decision on whether or not to join a coalition is straightforward. Since his decision has no impact over the rate of inflation all he needs to observe is whether the coalition wage increase rule, as given by equation (10), would be better than the utility maximizing rule when he free-rides, i.e., when he forms a coalition of size zero, as given by equation (11). It is easily seen that individuals of negligible size will have no incentive to join a coalition as there would be no wage restraint in free-riding[12]. Similarly, those already in coalitions will have a clear incentive to quit as well as the members of the coalition would prefer to have their coalition reduced in size.

[12] As a practical matter there would be limits imposed by each specific market configuration in which agents find themselves into. The notion that there is no restraint is related to the restraint as far as the collective interest is concerned; specific market games might impose very strict ceilings on such "free-riding".

As regards the problem of stabilization these results mean that individual agents would feel a strong tendency to withhold their contribution, i.e., moderation in wage demands, to the stabilization effort so long as they see themselves as having a negligible impact on the outcome. The straightforward conclusion is that, within the very abstract framework of our model, the more decentralized, or the more characteristically atomistic an economy is, the stronger inflationary inertia will be for a given propensity to adopt indexation or a given degree of contract desynchronization. It is very clear that financial policies have no bearing on the mechanism generating inertia so that stabilization initiatives centred on such policies will be of very little effectiveness, unless specific policies are implemented to address the issues of coordination and strategic interaction involved in the process by which the economy continuously recreates past inflation.

These results are sympathetic with Olson's conclusions about group formation, namely that individuals will hardly feel inclined to join groups designed to provide for the common good, so long as non-excludability is present. General Solutions for this problem are not really illuminating, at least as long as our problem is concerned. Olson emphasizes the role of coercion to accomplish, in our terminology, an extended coalition membership[13]. In the case of the inflation stabilization problem coercion may take the form of extensive price-wage Controls or guidelines. Recent experiences with price freezes – as illustrated by the recent stabilization plans in Argentina, Peru, Brazil and Israel – seem to imply that coercion in this sense might indeed provide an acceptable solution for the inertia problem. Free-riding behaviour is very clearly observed in sectors where the freeze is ineffective: very significant price increases has been observed in such sectors, especially during the first moments of the respective plans. Other forms of coercion might be useful in such cases; the tax system in principle could be used to punish free-riders or to stimulate compliance. In any event, since "capitalism has produced no values of its own to foster restraint"[14], coordination devices have to be supported by a system of incentives and penalties compatible with actions driven by self-interest. This might be a very difficult thing to accomplish in practice, for it might involve inconveniently high levels of "coercion" or unattainable degrees of "social consensus".

6. Corporatism and Inflationary Inertia

The results of our model were obtained in a very abstract setting and by force of some quite restrictive assumptions; any effort of interpretation should consider explicitly these limitations. The most obvious objection to our results is that, in general, the organization of economic interests, rather than enhancing social awareness of inflation, may very well increase the scope for conflict and thus

[13] Especially regards trade union membership, cf. M. Olson (1965), pp. 66-76.
[14] C. Crouch (1978) p. 227.

intensify the "incompatibilities" or "competing claims" conductive to inflation. Our model actually assumed a "purely monetary" or "purely inertial" inflation, which was meant to rule out the problem of identifying the "fundamentals" or the origins of inflation. This is certainly restrictive in the sense what is usually observed is the continuing influence of renewed inflationary shocks superimposed upon the inertia mechanism. The problem of "fundamentals" is certainly essential to a successful stabilization, but in the absence of new shocks the inflationary "memory" remains and very often this represents by far the most important component of the observed inflation rates. By ruling out the "fundamentals" of the problem this paper is only building an analytical separation between two important parts of the problem.

Perhaps the key assumption to our model was that "large" agents would have a "social" concern about inflation. This could be documented, for instance, by reference to the fact that large unions and big labour federations seem to show a concern about the macroeconomic consequences of their acts[15]. But this is also dangerous as a general proposition; the behaviour of these large bodies might be governed by all sorts of considerations and can very easily be markedly "selfish". In fact, it is quite common to see tests of the *positive* association between union size or militancy and inflation[16]. In view of this, we could rephrase our results into a weaker form as the more "corporatist" an economy is, other things equal, the easier to enforce stabilization initiatives involving coordinated wage-price restraint, consequently the more likely are administered "shifts" in the Phillips' curve. Notice, however, that we assumed that all movements in wages would be fully reflected into prices, which might be somewhat unrealistic especially on a downwards direction. In fact, only when "*social pacts*" are engineered and/or within the framework of "*incomes policies*", that explicitly establish that prices must follow wage restraint, that the mechanisms studied in this chapter could be made operative.

Empirical illustrations of this paper's results are difficult in view of the very abstract nature of our model, and also in view of the difficulty in measuring inflationary inertia. On account of the "vertical" dimension inflationary inertia, or the location of the economy within the AB segment in Graph 3, there is a vast array of factors to be mentioned. As regard the organization of labour into unions, for instance, it matters the degree of unionization and also some more "structural" factors directly related to union's strength such as, for example, the presence of a large informal sector or of an overcrowded backwards agricultural sector[17]. The average union size might be important to the extent that the scattering of unions, sometimes within the same industry, might be conductive to tensions and rivalries related to the structure of relative wages that would be less likely in the presence of large or multi-industry unions. The shop floor presence of unions is relevant for unions

[15] See, for example, A. Romanis (1967), p. 112 and (1975) p. 2, C. Crouch (1985) p. 107, M. Olson (1982), p. 48 and L. Calmfors (1985), p. 329.
[16] As, for example, in R. Ward/G. Zis (1974).
[17] A. Romanis (1967), p. 173.

macroeconomic concerns are likely to be diminished if the involvement of the rank and file in wage negotiation is high[18], in voting to ratify contracts, for example.

The countervailing degree of organization of business interests is equally important. At the level of market arrangements it matters how "stable" are oligopolies in the sense of "informal" cartelization rules have been tacitly agreed[19]. in this connection the levels of industrial concentration are obviously important, and at a formal level the existence of industry wide or economy wide employer's federations, as well as unions, is also very important for coordination purposes. The role of the State in the conduction of industrial relations, and consequently in the engineering of coordinated restraint, is usually essential. The State is often the one to define the institutional arenas where the action takes place: it provides for mechanisms of arbitration, collective bargaining, enforcement of contracts etc. The state is also participant: it is often a large employer and supposedly the repository of the national priorities but usually and *ad-hoc* manager of the distributive tensions; its "size" and clientelistic character are obviously relevant for its action as regards the coordination of agents' economic behaviour. The overall stability of the political system, or of the political process, and the prevalence of social democracy are indispensable complements of that picture; it is often an overwhelming problem for some of the Latin American attempts at stabilization[20].

On account of the "horizontal" dimension of inertia, the location within AC on Graph 3, it obviously matters the degree of indexation formal and Informal. It matters the degree of synchronization of wage contract renegotiations and the average contract length. The economy's openness is also relevant: for a given international inflation and for a given propensity in the non-tradable sector to "multiply" this level of inflation, inertia depends on openness[21].

It is certainly difficult, and possibly hopeless to provide empirical expressions for all these factors, at least in an organized fashion. There has been some empirical work on related hypothesis, however, and the results obtained have been remarkably encouraging. Colin Crouch (1985), John McCallum (1983) and Michael Bruno/Jeffrey Sachs (1984) all investigated International differences in inflation performance in the OECD area during the 1970s. Crouch associated indicators of the degrees of corporatism and inflation rates and the latter attributed differences in the inflationary response to the shocks of the 1970s to differing degrees of "social consensus". He ranked countries according to their degree of corporatism – based on indexes of "organizational centralization" and "associational monopoly", on the character of the wage bargaining institutions and on union membership – and showed that the more corporatist countries very clearly experienced less industrial

[18] An account of developments in this respect is to be found in A. Romanis-Braun (1975), pp. 12-13.
[19] A. Romanis (1967), p. 175.
[20] A discussion of the relation between political instability and inflation is provided by M. Paldam (1984). For an empirically oriented discussion at the characterization of the degree of corporatism, see C. Crouch (1985).
[21] A. Romanis (1967), p. 179.

conflict – as measured by the incidence of strikes – and less inflation. McCallum's work was of estimating a model in which the sluggishness of wage adjustments in response to shocks depended on the degree of "social consensus" proxied by the average long-run strike activity. His evidence is, according to the author, "rather dramatically consistent with the hypothesis that the degree of social consensus... was the key factor accounting for inter-country differences in inflation in the seventies"[22]. Crouch reconciled these findings with his work by suggesting that "where there is social consensus (which might be secured by corporatist institutions) there will be a relatively rapid adaptation of real wages to economic developments, and therefore less inflation[23].

Bruno and Sachs suggested that an important part of the explanation for differing economic performances in the OECD are since 1973 would be related to two sorts of "structural" characteristics of labour markets, namely the degree of corporatism and what they called nominal wage responsiveness. These two sets of factors correspond very closely to our two "dimensions" of inflationary inertia. In their framework, however, these issues are relevant for the extent to which wages are kept closer to market clearing levels, and thus not exactly as conditions conductive or favourable to coordination initiatives as this chapter sought to characterize. Bruno and Sachs provided quantitative indicators of overall economic performance in the OECD countries during the 1970s and significant correlations were found between these and those for corporatism and nominal wage responsiveness[24].

One should be careful, however, not to oversell the association between corporatism and inflation performance, as there are many factors involved in international differences in inflation rates. These authors studied a rather homogeneous sample of industrial countries; the inclusion of a country like Argentina, for instance, to which we could assign an "European" degree of corporatism, a very high degree of synchronization of wage contracts, low degrees of indexation and an inflation rate much higher than the OECD average could do damage on the conclusions and would remind us once again of the dangers of cross country comparisons[25]. It is interesting, however, to compare Argentina with "similar" chronically inflationary Latin American countries and see whether our hypothesis finds some support in this context. Table 1 reports two tentative measures of inflationary inertia and a few indicators of the degree of "organization" of the economy. One way to measure inflationary inertia could be to use the variability of inflation; but since the latter is heavily influenced by the level of inflation we reported on the table a "normalized" measure of dispersion in the form of the coefficient of variation of inflation in the period 1948-1979[26]. In addition to that, the table reports

[22] J. McCallum (1985), p. 802.
[23] C. Crouch (1985), p. 125.
[24] M. Bruno/J. D. Sachs (1985), Chapter 11.
[25] Mc Callum ran cross section regressions for 1971-72, when his sample averaged a 10% inflation rate. During these years, Argentine inflation averaged nearly 47%.
[26] This would not be strictly necessary since the average inflation did not differ much between the countries in the sample,

a second measure of inertia in the form of the correlation coefficient between current and one period lagged inflation. For the first measure, inertia would be greater for the lower coefficient of variation, while for the second the largest inertia should correspond to the largest coefficients. The two measures unambiguously point Argentina as the country with the lowest degree of inertia and Brazil as highest. The position of Chile and Uruguay is intermediary, but the relation between these two is somewhat ambiguous: Chilean inflation is highly autoregressive, suggesting a large degree of inertia, but also shows a large variability.

Table 1

Measures of Inertia and of "Organization": Latin American High Inflation Countries

	Argentina	Brazil	Chile	Uruguay
Inertia-1[a]	163.8	67.8	156.0	89.9
Inertia-2[b]	0.57	0.85	0.80	0.68
Unionization[c]	31.7	10.6	32.0	17.7
Agric. Employment[d]	14.8[e]	36.2[f]	15.9[g]	15.6[h]
Poverty index[i]	8.0	49.0	17.0	10.03
Openness[k]	8.6	6.1	10.9	9.7

Sources and observations: (a) Coefficient of variation for inflation rates of the period 1948-1979 as reported in J. W. Wilkie (1983), pp. 340- 348. (b) Slope coefficients of regressions: $\Pi_t = a + b\Pi_{t-1} + U_t$. (c) Percentage of organized workers in economically active population in 1960 as reported in F. Zapata (1970). (d) Percentage of economically active population employed in agriculture, from J. W. Wilkie (1983) p. 175. (e) 1970. (f) 1976. (g) 1980. (h) 1975. (i) Percentage of total households below the poverty level in 1970, *ibid*., p. 187. (j) Only urban population. (k) Exports over GDP in 1971, *ibid*., pp. 307-313.

The indicators of the degree of "organization" include the extent of union membership and a proxy for the size of the informal sector. It is readily seen that Argentina and Chile are by far the more unionized economies, though the degree of centralization and federalization, as well as the degree of contract synchronization, in Argentina is much higher. Uruguay is fairly unionized but, like in Chile, there is marked splitting between unions with different political tendencies. Union membership is low in Brazil but there is a great degree of State control over the unions[27]. Apart from the sharply different histories of each individual labour movement, the strength of the unions is "structurally" related to the size of the informal sector; a position of "unlimited supply of labour" is certainly not conductive to cohesive and strong unions. In this respect, the table reports agricultural employment as a percentage of the total and the extent of poverty in each country. Argentina scores the lowest while Brazil the highest in both accounts, and Chile appears unambiguously more

especially if we consider the period 1948-1973, for which the average inflation was 28.7%, 28.0%, 31.7% and 32.8% respectively for Argentina, Brazi1, Chile and Uruguay. The inclusion of the more recent years, however, introduces marked differences in the averages. especially for Chile and Argentina.

[27] On the general characteristics of the labour movements in the region, cf. R. J. Alexander (1965).

agricultural and poorer than Uruguay. In addition to that the table reports degrees of openness, showing no important differences between these countries.

The indicators seem to match very well, especially for the extremes of the spectrum. Argentina is surely the more "organized" and the one with the lowest degrees of inertia, while Brazil is the least "organized" and the one with the highest inertia. The position of Chile and Uruguay is intermediary; it would appear that inertia that Chile should Show greater inertia than Uruguay, despite the differences in unionization[28], which is indeed confirmed by our autoregressive measure of inertia. The Chilean inflation, however, shows much greater variability than the Uruguayan, which is actually due to the period of exceptionally large inflation rates after 1973: computing the coefficient of variation for the Chilean inflation for the period 1948-1973 we found the value of 62.9 while for Uruguay the coefficient would be 102.0.

A more "historical" reading of these countries' experience with stabilization policies during these years seem to provide additional support to our findings. It is indeed in Argentina that one finds the most spectacular episodes of sudden and unemployment free disinflations based on coordinated wage-price restraint. In 1952-53 inflation was brought down from 38.1% to 4.3% thanks to an extensive system of wage-price Controls negotiated by Perón and labour and business leaders and in 1959-60 inflation was reduced from 113.9% to 27.1% again by virtue of wage price restraint[29]. In 1967-68 another wage-price freeze reduced inflation from 20.6% to 3.9% with financial policies playing a secondary role[30], and again in 1973-74 a "social pact" was attempted and succeeded in holding prices steady for nearly an year[31]. At this present moment we are witnessing still another coordinated wage-price freeze – this time accompanied by restrictive financial policies and by a large degree of control – which reduced an average monthly inflation rate of nearly 30% to something around 2.0%[32]. In general, we cannot say that these plans were unqualified successes, as their very frequency indicates that inflation always returned and sometimes very quickly. But the important point to be made is that while periodic "freezes" could wipe out the inflationary "memory" they could not prevent new shocks and usually did not touch the more fundamental causes of inflation. The nature of these causes is actually the object of a lasting debate but regardless of its verdicts it is a remarkable fact that Argentina could engineer such sudden reductions in inflation, and this had to do

[28] Which are actually compensated by other factors. Bitter political struggles around the control and the policies of the large unions in Chile reduced considerably the scope for "collaboration". in Uruguay, despite the marked fragmentation of unions, there has been much more "coordination" than in Chile, cf. *ibid*., pp. 61, 99 *passim.*

[29] R. D. Mallon/J. V. Sourrouille (1975) pp. 9-25 *passim.* In both episodes, monetary policy was not restrictive and there was no noticeable recession.

[30] "There was not a single measure adopted to reduce demand, and demand vas actually stimulated in various ways", cf. J. C. de Pablo (1974), p. 177 *passim.*

[31] Inflation was nearly zero from June of 1973 until March of 1974, though the January-to-December values for 1973 and 1974 were respectively 43.7% and 40.0%, cf. G. di Tella (1979) and R. L. Ayres (1976).

[32] F. L. Lopes (1985).

with the issues discussed in this chapter.

In absolute contrast, Brazil had only one wholehearted stabilization plan during the years covered by Table 1, by means of which a newly installed authoritarian government accomplished a reduction of inflation from 87.11 in 1964 to 29.61 in 1967 at great cost. The plan implemented very restrictive financial policies and generated a very severe recession; the government also banned all union activity and introduced a system of centralized wage setting. A program of voluntary price control was implemented but it could not prevent a very drastic reduction in real wages[33]. Wage "restraint" was only very slowly passed into prices, a phenomena we also observed in the Chilean stabilization starting in 1974[34]. More recently, the governments capacity to influence wage fixing would play a fundamental role in the stabilization experiment initiated in February of 1986 with the introduction of the Cruzado. This time the government would be able to enforce extensive price controls and a complex mechanism of wage deindexation simultaneously. The recent Peruvian effort, the Inti Plan, marks yet another remarkable episode of abrupt disinflation in which a wage-price freeze played a fundamental role in addressing the inertia problem[35]. Other episodes of apparent "jumps" of the Phillips trade off in a downwards direction are the Chilean plan of 1959-60, and the Uruguayan plans of 1953-54 and 1968-69; all of them involved negotiated wage-price restraint[36]. Incidentally, the contrast in performance between these non-conventional plans (or conventional plans with "heterodox" treatment of the inertia problem) and those exclusively relying on financial policies, generally "inspired" by the IMF, is extraordinary[37].

7. Conclusions

This paper was intended to Show that inflationary inertia is a problem that should be considered on its own right, and in this connection the very basic policy implication of our analysis is that a stabilization program (especially for countries where movements along a Phillips' curve are not relevant) could only be successful if the inertia problem is specifically addressed. The paper associated the inertia problem with a familiar instance of problems of collective decision making, namely a free-rider problem. It was argued that, in this context, the stabilization problem is essentially a coordination problem or a problem of devising some mechanism to enforce coordinated wage-price restraint. It was suggested that policies such as "incomes policies" or coordinated price-wage freezes

[33] See A. Lara-Rezende (1983). A system of price Controls was actually implemented but it was not binding: firms could adhere to it in exchange for credits at subsidized rates and other favours.
[34] J. R. Ramos (1980).
[35] A. Espejo (1986).
[36] M. H. J. Finch (1979), F. Pazos (1972) and R. Ffrench-Davis (1973).
[37] For a review of orthodox plans, see E. Eshag/R. Thorp (1965), S. Lichtensztejn (1978). For more recent accounts, see C. Diaz-Alejandro (1981) and A. Foxley (1983). The official view of the IMF, notwithstanding, is that most cases of orthodox plans under stand-by agreements were successful, T. M. Reichmann/R. T. Stillson (1978).

would be the most common examples of such mechanisms. Some very brief comments were made as regards the experience with such policies in Latin America and in the OECD area; these accounts were primarily illustrative, and they seem to suggest that the hypothesis deserves careful work.

The most important message is very clear, namely stabilization does not merely involve the disposition to use demand management instruments in the "unpopular" contractionary direction. Once the inertia problem is considered, the design and implementation of a stabilization plan becomes a very complex matter. Coordination devices involve the political and institutional setting of economic interests in a very essential way; as put in a recent interdisciplinary effort to understand inflations in the 1970s: "the key to stanching inflation may be to experiment with political controls that induce a "concern for the common interest" among organized interests and state authorities and encourage them to act on the interests they share with society at large, incomes policies, social contracts, tripartite bargaining structures, corporatist industrial relations systems, arrangements for direct representation of organized interests within the state, and institutions of indicative planning can all be seen as implicit or explicit groupings for political control"[38].

Policies to address the inertia issue face problems of implementation mostly because they should be compatible with individuals acting selfishly. This could be especially difficult in the presence of external imbalances or other distributive or political tensions which establish losses to be shared. The record of incomes policies during the post-war period is a matter of debate and a judgement of the most recent experiences with price freezes in Latin America is still premature. Yet the advancement of corporatism in Europe and the redemocratization seem to suggest that the establishment of institutional arenas for the solution of conflicts does reduce the scope for the latter. In this sense it may help to eliminate perhaps the most common expression of conflict in organized capitalist societies: inflation.

[38] L. Lindberg (1985), p. 30.

References

Alexander, Robert J. (1965) "*Organized labour in Latin America*", The Free Press, New York.

Arida, Pérsio (1984) "Economic Stabilization in Brazil" Departamento de Economia, Pontifícia Universidade Católica do Rio de Janeiro, *Texto para Discussão*, nº 84, December.

Arida, Pérsio and Lara-Rezende, André (1953) "Inertial inflation and monetary reform: Brazil" in J. Williamson (ed.) "*Inflation and Indexation: Argentina, Brazil and Israel*" Institute for International Economics, Washington.

Ayres, Robert L. (1976) "The Social Pact as Anti-Inflationary Policy: The Argentine Experience Since 1973", *World Politics*, XXVIII (4), July.

Backus, David/Driffil, John (1985) "Rational Expectations and Policy Credibility Following a Change in Regime", *Review of Economic Studies*, LII.

Berholz, Peter (1985) "*Advanced Inflation in Latin America and Currency Reform: Economic and Political Problems*", Centre Européen de Diffusion Scientifique, France.

Booth, Allison L. (1985) "The Free Rider Problem and a Social Custom Model of Trade Union Membership", *Quarterly Journal of Economics*, 100(1), February.

Bruno, Michael/Jeffrey D. Sachs (1985) "*Economics of Worldwide Stagflation*", Harvard University Press, Cambridge.

Calmfords, Lars (1985) "The Roles of Stabilization Policies and Wage Setting for Macroeconomic Stabilization – The Experience of Economies with Centralized Bargaining", *Kyklos*, 38(5).

Church, Colin (1985) "Conditions for Trade Union Restraint", in L. N. Lindberg & C. S. Maier (eds.), "*The Politics of Inflation and Economic Stagnation, Theoretical Approaches and International Case Studies*", The Brookings Institution, Washington.

Church, Colin (1978) "Inflation and the Political Organization of Economic Interests", in F. Hirsch & J. H. Goldthorpe (eds.), "*The Political Economy of Inflation*", Harvard University Press, Cambridge.

Collander, David C./Koford, Keneth G. (1985) "Externalities and Macroeconomic Policy", in S. Maital/I. Litnowski (eds.) "*Macroeconomic Conflict and Social Institutions*", Ballinger, Cambridge.

De Pablo/Juan Carlos (1974) "Relative Prices, Income Distribution and Stabilization Plans: The Argentine Experience, 1967-1970", *Journal of Development Economics*.

Diaz-Alejandro, Carlos (1981) "Southern Cone Stabilization Plans", in W. R. Cline & S. Weintraub", "*Economic Stabilization in Developing Countries*", Brookings Institution, Washington.

Di Tella, Guido (1979) "The Economic Policies of Argentina's Labour-based Government (1973-6)", in R. Thorp & L. Whitehead (eds.) "*Inflation and Stabilization in Latin America*", Holmes & Meier, New York.

Driffill, E. J. (1985) "Macroeconomic Stabilization Policy and Trade Union Behaviour as a Repeated Game", Institute of International Economic Studies, University of Stockholm, *Seminar Paper* nº 301.

Eshag, Eprime/Thorp, Rosemary (1965) "Economic and Social Consequences of Orthodox Economic Policies in Argentina in the Post-War Years", *Bulletin of the Oxford Institute of Economics and Statistics*, 27(1) February.

Espejo, Alberto (1986) "*La Experiencia Heterodoxa en el Perú*" (mimeo).

Ffrench-Davis, Ricardo (1975) "*Políticas Económicas en Chile 1952-70*", Nueva Universidad, Santi8go.

Finch, M. H. J. (1979) "Stabilization Policy in Uruguay Since the 1950s", in R. Thorp & L. Whitehead (eds.) "*Inflation and Stabilization in Latin America*", Holmes & Meier, New York.

Fischer, Stanley (1984) "Contracts, Credibility and Disinflation", *NBER Working Paper* nº 1339, April.

Foxley, Alexandro (1983) "*Latin-American Experiments in Neoconservative Economics*", University of California Press, Berkeley.

Lara-Rezende, André (1983) "A Política Brasileira de Estabilização, 1963/68", *Política e Planejamento Econômico*, 12(3), December.

Lichtensztejn, Samuel (1978) "Sobre el Enfoque y el Papel de las Politicas de Estabilización en America Latina", *Economia de America Latina* CIDE nº 1, September.

Lindberg, Leon N. (1985) "Models of Inflation-Disinflation Process" in L. N. Lindberg & C. S. Maier (eds.) "*The Politics of Inflation and Economic Stagnation. Theoretical Approaches and International Case Studies*", The Brookings Institution, Washington.

Lopes, Francisco L. (1985) "O Novo Austral na Argentina", Departamento de Economia, Pontifícia Universidade Católica do Rio de Janeiro, *Texto para Discussão* nº 104, July.

Mallon, R.D./Sourrouille, J. V. (1975) "*Economic Policymaking in a Conflict Society: The Argentine Case*", Harvard University Press, Cambridge.

McCallum, Bennet T. (1984) "Credibility and Monetary Policy", *NBER Working Paper* nº 1490, November.

McCallum, John (1983) "Inflation and Social Consensus in the Seventies", *Economic Journal*, 93 (4), December.

Olson, Mancur (1982) "*The Rise and Decline of Nations: Economic Growth, Stagflation and Social Rigidities*", Yale University Press, New Haven.

Olson, Mancur (1965) "*The Logic of Collective Action, Public Goods and the Theory of Groups*", Harvard University Press, Cambridge.

Paldam, Martin (1984) "*Inflation and Political Instability in eight Latin-American Countries 1946-83*", Institute of Economics, University of Aarhus, Denmark.

Pazos, Felipe (1972) "*Chronic Inflation in Latin America*", Praeger, New York.

Phelps, Edmund (1979) "Obstacles to Curtailing Inflation", in J. H. Gapinski and C. H. Rockwood (eds.) "*Essays in Post Keynesian Inflation*", Ballinger, Cambridge.

Ramos, Joseph R. (1980) "The Economics of Hyper Stagflation Stabilization Policy in Post-1973 Chile", *Journal of Development Economics*, nº 7.

Reichmann, Thomas M./Stillson, Richard T. (1978) "Experience with Programs of Balance of Payments Adjustment: Stand-By Arrangements in the Higher Tranches, 1963-72", *IMF Staff Papers*, XXV (2), June.

Romanis Braun, Anne (1967) "Cost Inflation and Incomes Policy in Industrial Countries", *IMF Staff Papers*,14(1), March.

Romanis Braun, Anne (1975) "The Role of Incomes Policies in Industrial Countries Since the Second World War", *IMF Staff Papers*, 22(1), March.

Thorp, Rosemary/Whitehead, Lawrence (eds.) (1979) "*Inflation and Stabilization in Latin*

America", Holmes & Meier, New York.

Wallace, Myles S. (1983-84) "Economic Stabilization as a Public Good: What Does It Means" *Journal of Post Keynesian Economics*, 6(2), Winter.

Walter, Norbert (1976) "The Role of Index Clauses in Anti-Inflationary Strategy", in H. Frisch (ed.), "*Inflation in Small Countries*", Springer Verlag, Berlin.

Ward, R./Zis, G. (1974) "Trade Union Militancy as an Explanation of Inflation: An International Comparison", *Manchester School of Economic and Social Studies*, 42, March.

Wilkie, James W. (ed.) (1983) "*Statistical Abstract of Latin America*", vol. 22 UCLA, Latin American Center.

Zapata/Francisco (1970) "Mexico", in A. A. Blum (ed.) "*International Handbook of Industrial Relations*, Mexico.