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# Stability and structure: *interactions in* economic growth

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The recent economic development of the region confirms that stability has not yet been firmly consolidated in it. There are still some structural factors of macroeconomic instability, various sequels of the debt crisis have not yet been overcome, and fresh macroeconomic tensions of various origins have made their appearance. The challenge currently facing economic policy is to implement reform and growth policies while maintaining the recent achievements in terms of stability. A prior requisite for this is a proper understanding of the way macroeconomic and microeconomic factors interact: the mutual influence of constraints in terms of macroeconomic consistency, on the one hand, and the imbalances generated in the reform process and the consequent changes in the production base, on the other. This article therefore seeks to analyse why "the macroeconomic problem" has an identity of its own and the ways in which it affects the microeconomic structure (both real and financial) and is in turn affected by it. It goes on to try to identify the most important micro-macro transmission channels and finally sets out some reflections on the way in which micro-macro interactions help to determine the growth potential of an economy.

# I

## Introduction

During the 1980s, the debt crisis gave rise to an unprecedented level of macroeconomic instability. In this context, stabilization became an absolute priority and the question of growth was relegated to the background. In the last few years, however, problems relating to growth and the development of production have been gaining ground in the Latin American economic policy agenda, and this undoubtedly represents a considerable advance.

The fundamental factor which has made possible this change in the relative levels of priority assigned to stability and growth has been the change which has occurred in the international capital market: in these first few years of the 1990s there has been a sharp fall in external interest rates and the rationing of credit from which the countries of the region had been suffering has appreciably eased. Thus, the two basic factors which had served to generate the debt crisis have been deactivated. Under these new circumstances, governments have had greater freedom to carry out successful stabilization policies and there has consequently been a general improvement in the key aggregate variables of the countries of the region, with the very important exception of Brazil (Damill, Fanelli, Frenkel and Rozenwurcel, 1993). Once stabilization ceased to be such a pressing need, there was a chance to start thinking about growth. As a general rule, efforts have been made to reactivate the sources of growth through structural reforms aimed at heightening the role of the market and increasing the efficiency of the structure of production.

It must be borne in mind, however, that stability is far from having been consolidated. Some structural factors of macroeconomic instability are still intact, the debt crisis has left sequels which have not yet

been overcome, and fresh macroeconomic tensions have appeared as a by-product of the faster implementation of structural reforms.

We have expressed the view that this new situation represents an advance. If we take into account the potential factors of imbalance that still remain, however, we must add that it also represents a challenge: basically that of making intelligent use of the greater leeway available in order to set in motion policies for reform and growth, while maintaining the recent achievements in terms of stability. One necessary condition for facing this challenge is to understand –if only roughly– the way the macroeconomic and microeconomic factors interact: i.e., to understand how the constraints regarding macroeconomic consistency (both short and long term) condition the imbalances generated during the reform process by the consequent changes in the production base, yet at the same time are themselves conditioned by them.

This article analyses the factors that affect the relation between consistency of the aggregates and development of production. In order to deal with this problem it is essential to use analytical results drawn not only from macroeconomics and microeconomics but also from growth theory, financial theory, public finances, industrial organization, international trade and the dynamics of technological change. In order to be fruitful, an interdisciplinary approach must necessarily be taken, and this is precisely one of the most difficult obstacles to overcome. There is very little systematic interaction at the analytical level between macroeconomists and specialists belonging to each of the branches in question –especially those dealing with the analysis of industrial organization, innovation and technological change. For this reason (and, among other things, the macroeconomic slant in the authors' background) this article can only be of an exploratory nature. Our greatest desire in writing it is that it may prove to be of some use for future interdisciplinary studies on the relation between “micro” aspects (that is to say, factors relating to the structure of production) and “macro” considerations (i.e., consistency of the aggregates). This desire stems from the firm belief that many of the secrets of growth are hidden in the complex web of “micro-macro” relations.

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If the most important forms of "macro-micro" interactions could be identified, then it would be possible to analyse the way in which different macroeconomic scenarios, characterized by different configurations of aggregate variables, have a positive or negative effect on the conduct of the economic agents, the morphology of institutions, and, ultimately, the efficiency and growth path of the economic structure. It would also be possible to assess whether structural reforms designed

to change the characteristics of the context in which microeconomic decisions are taken help or hinder the consolidation of stability. Naturally, in view of our objectives, our analysis will be aimed primarily at determining the particular features of these mechanisms in the present Latin American context, which is marked by a state of stability which has not yet been consolidated and the more rapid adoption of structural reforms designed to heighten the role of the market.

## II

### Some further details of the problem to be analysed

It would be desirable at this point to make some clarifications which will help both to avoid certain possible points of confusion and to delineate the subject of our analysis more clearly. Let us begin with a semantic clarification. We are using the terms "micro" and "macro" for reasons of convenience and brevity, and without much respect for the traditional division of labour in our discipline. In this study, the "macro problem" covers the short-term questions which are traditionally dealt with by macroeconomics, but it also covers other matters connected with the long-term consistency between saving and investment which are usually analysed under growth theory. Our use of the term "micro", on the other hand, covers a range of characteristics of economic structure which is in one sense broader but in another sense narrower than that usually studied in microeconomics. It is broader because we include in the "micro problem" questions normally dealt with in institutional approaches and in the literature on innovation and industrial organization, but it is narrower because, for example, we do not refer to questions connected with consumer theory.

Normally, the micro-macro relation is analysed in literature on the micro-bases of macroeconomics. The purpose of this literature is to study how the individual forms of conduct determined by a given micro structure (resources, technology, consumer preferences and market structure) may serve as the basis for the broader proposals of macroeconomics, so as to arrive at a unified theory. In the final analysis, the aim is to dilute the macroeconomic problem by

converting it into an epiphenomenon of microeconomic forms of behaviour, ultimately explainable in terms of a general theory based only on principles of conduct for each individual agent. In spite of all the efforts made, however, it has not been possible to arrive at results which enjoy a minimum of consensus among the specialists. The discussion set forth in the following pages is only tangentially related with this problem, however, and we should like to make it clear right away that we have no intention of trying to reinvent the wheel.

Unlike the micro-bases approach, which seeks to solve a theoretical problem, the approach used here is based on our experience of case studies in Latin America. Because of the lack of an integrated theoretical structure, in the economic analysis of specific cases the problems of microeconomic structure and the macroeconomic problems are studied separately. In line with the foregoing, we take it as a methodological assumption in this study that the macroeconomic problems have an identity of their own and that the same is true of the microeconomic problems relating to the structure of production. Hence –and basing our work on the actual facts identified through the study of specific cases– we seek to identify the interaction between the two types of problems: how do given micro structures affect macroeconomic stability, and how do different macroeconomic imbalances help to shape a particular micro structure? This approach does not assume that the micro structure is of a given type and is invariable in the presence of macroeconomic imbalances.

An example could serve to illustrate this. In the traditional literature it is assumed that inflation occurs as a result of a lack of coordination whereby aggregate demand exceeds supply. Let us assume that this is due to an excess supply of money. In order for the imbalance to disappear, all that would be necessary would be for the monetary authorities to apply a contractionary monetary policy that would lead to a real amount of money exactly equal to the demand resulting from the sum of the demand of each of the individual agents. The assumption is that the microeconomic structure is invariable in the presence of macroeconomic imbalances and that there is one, and one only, demand for money compatible with each level of inflation. However, this is not always in keeping with the observed facts in Latin America.

Let us suppose that there is a given rate of inflation which rises because of an increase in the rate of money issue, leading to a decline in the demand for money. Let us further suppose that, through stabilization policies, the authorities manage to bring the rates of inflation and money issue back to their previous levels. In a context like this, we have often observed in Latin America that the demand for money does not in fact return to its original level and –a very important point– there are financial markets which simply disappear (typically, the longest-term markets). In other words, for a certain given rate of inflation there could be (although this is not necessarily so) two different levels of demand for money and two different structures of financial markets. If this is so, it means that eliminating the macroeconomic imbalance does not necessarily mean returning to the “same” economy as before. The macro imbalance produces a mutation in the micro structure. This type of phenomenon is not confined to the monetary field, since it also takes place on the real side of the economy. This happens, for example, when variations in the rate of inflation lead to permanent changes in the average length of contracts or to the outright disappearance of some types of contracts. In both cases, the structure of production may suffer changes because there are production activities which cease to be viable if certain forms of contracts are no longer available.<sup>1</sup>

The argument we are putting forward is not that every macro imbalance always gives rise to micro changes, but that it is possible to identify certain configurations of macro imbalances which do indeed

produce structural changes. Obviously, whatever the type of imbalance, the macroeconomic aspect is important in itself, because it has enough causal properties to condition the decisions of individual agents, regardless of whether the microeconomic framework is considered invariable or not. But when those decisions lead to changes in technology or in the propensity to innovate, to destruction of wealth, to variations in the capital/product ratio or to changes in institutions (changes in the type of contracts, disappearance of markets, etc.) it cannot be assumed that the micro framework within which individual decisions are taken has remained invariable.

The importance of this question is clear when we look at the long-term evolution of the micro structure. There are features in the economic structure which cannot be explained solely in micro terms, without reference to the macro context in which that evolution took place. It then becomes necessary to explain what are the characteristics which, when assumed by some specific types of macro imbalances, mean that the occurrence of the latter leads to permanent changes in the micro structure. In this respect, the aim is not to take the place of the traditional short-term macroeconomic approach which assumes a given micro framework, but to complement it by including in the analysis the long-term effects that cases of inconsistency of the aggregates may have on that framework.

In this article, we argue that in order to bring about such an extension of traditional macro analysis it is necessary to include not only cases of stable imbalance but also those of unstable imbalance. In other words, it is necessary to include macroeconomic scenarios marked not only by explosive situations of instability (such as hyperinflation), but also –and above all– those involving prolonged periods of instability which do not become explosive (e.g., lengthy periods of three-digit inflation) or those which display a systematic propensity to generate pronounced and recurrent imbalances, so that this becomes an inherent feature of the macroeconomic context. In our view, it is precisely the perception by economic agents that they are living in an economy marked by macroeconomic instability which leads them to adopt forms of conduct that end up by causing structural changes in the micro environment.

Indeed, the importance of this question is already implicitly recognized in the language used to discuss macroeconomic phenomena in Latin America. When the literature refers to macroeconomic problems in the developed countries, it talks about macroeconomic imbalances. When it refers to macro-

<sup>1</sup> For more details of the relation between inflation and contracts, see Frenkel, 1990.

economic matters in the case of Latin America, however, it changes without more ado from the word "balance" to the term "stability" and proceeds to talk about the problem of macroeconomic stabilization and stabilization policies. In the first case, it is implicitly assumed that the economy is stable and that the problem faced by macroeconomic policy is how to speed up the return to equilibrium of an inherently stable economy. In the second case, however, it is not assumed—in our opinion, quite rightly—that the economy is stable, and the perceived problem is not how to hasten the return to a predefined state of balance but how to find policies for making an unstable economy stable. It is a question of defining a new equilibrium configuration and new forms of dynamic adjustment in a state of imbalance.

This is precisely why stabilization policies usually include structural reform elements and it is so difficult to separate the two components. This is also an important reason why it is necessary to take a macroeconomic approach which includes matters normally dealt with in growth theory. If the economy has features of instability, then it is necessary to change the parameters that define it in order to make it stable. In other words, it is necessary to reform part of its structure. Moreover, if the stabilization efforts are successful, the stabilized economy will not really be the same economy that gave rise to the macroeconomic imbalances which led to the application of the stabilization policy. Inherently stable economies are not stabilized: they merely return to a state of equilibrium. It is unstable economies that have to be stabilized: i.e., that must be structurally changed so

as to put them on stable paths towards balance so that they finally can become balanced economies.

The close relation between stabilization and structural reform that is highlighted by instability phenomena gives rise in turn to other problems. When designing the structural change policies which must accompany stabilization: What are the structural parameters that must be changed? What are the features of the micro structure that give rise to the propensity to instability, and how do the necessary changes affect the growth capacity of the economy? All this makes it essential to analyse the effects of micro elements on macro ones.

In short, in the approach adopted in this study the relation between micro and macro elements is seen as a two-way street, so that we have two tasks before us. The first is to analyse why there is a macroeconomic "problem" which has features and an identity of its own and warrants (analytically) separate treatment from the other questions concerning the evolution of production activities. In particular, it is essential to have a clear idea of why macroeconomic imbalances and, very often, the appearance of cases of instability, have so keenly affected the growth rate and morphology of the production structure of Latin America. The second task is to see how the imbalances which exist in the production structure, as well as the greater development and sophistication of that structure, could help to deactivate the structural factors that lie at the root of the propensity of the economies of the region to generate heavy and recurrent macroeconomic imbalances which often take on the nature of downright instability.

### III

#### From macro to micro: the special features of the macroeconomic problem and structural changes

The reason for the appearance of the literature on micro-bases is that it is not possible, on the basis of purely microeconomic principles, to deduce a theorem from the actual facts observed at the macroeconomic level, such as unemployment or the importance of nominal variables in determining the level of ag-

gregate activity. Because of the impossibility of solving this question, it was decided, as a working hypothesis, to view the macroeconomic problem as an entity of its own, independent of individual forms of conduct. In order to define such an entity, macroeconomic analysis identifies a group of fundamental

variables which determine the evolution of the economy at the aggregate level. These variables are those associated with the evolution of the external sector, the fiscal accounts, and the balance between global saving and investment.<sup>2</sup> When pronounced unforeseen changes take place in these fundamental variables, cases of lack of coordination among individual plans occur and imbalances arise in the macroeconomic entity.

The nub of the macroeconomic problem is the existence of these flaws of coordination. When they occur, this means that not all the economic agents are in a position to trade *ex post* on the markets the amounts which they had planned to trade *ex ante*. There is a macroeconomic imbalance because there is a lack of coordination at the aggregate level.

The main distortion generated by a situation of imbalance is that the agents may be obliged to carry out transactions which may be greater or smaller than they wish, and this affects them in terms of budgetary constraints or their wealth position.<sup>3</sup> As a result, they are obliged to make unforeseen adjustments in order to bring their balance-sheet back into balance, and these adjustments may affect both the real side (reallocation of factors) and the financial side (portfolio decisions), and both flows (decisions within a given period) and stocks (reallocations of resources between time-periods). These problems arise in any

<sup>2</sup> In the discussion on stabilization and growth in Latin America, the crucial role of these three factors led to the development of the literature based on "three gaps" models: the fiscal gap, the external gap and the internal (saving/investment) gap. See, for example, Fanelli, Frenkel and Taylor, 1992.

<sup>3</sup> The traditional literature on imbalances (Leijonhufvud, 1968; Benassy, 1982) places emphasis on the transactions which are not carried out because of flaws of coordination. In another study, however, we have argued that this emphasis is not justified (Fanelli, 1988). This is particularly so at the financial level, where, in situations of imbalance, over-indebted agents typically have the possibility of delaying their payments, thus forcing their creditors to lend them more than they were *ex ante* willing to do. This type of situation was very common during the debt crisis, when a number of Latin American countries applied payments moratoria. When emphasis is placed on the transactions which are not carried out, the system of rationing used in the situation of imbalance is that "the short arm of the market calls the tune" (for example, if there is an excess of supply, the amounts determined by demand are traded). When more transactions than desired are allowed to take place, the rationing system may be based on the domination of the "long arm of the market" or on a linear combination of the amounts determined by the short and the long arms. In the first case, all the transactions are voluntary, but in the second case there may be forced or involuntary transactions.

situation of imbalance, but when they are due to flaws of coordination at the aggregate level the key point is that there will be a macroeconomically substantial number of agents carrying out transactions in a state of imbalance and hence adjusting their balance-sheets.

In turn, the effects of these adjustments on the balance-sheets of other agents—who were perhaps initially not affected—cannot be ignored, because they will be of significant size. In other words, there will be spillover effects on other markets which will tend to heighten the impact of the imbalance on a given market or markets. Moreover, as transactions in a state of imbalance may affect not only flows but also stocks, the spillover effect may have substantial consequences over time. The imbalance can be "read" in each agent's balance-sheet by looking at the decisions on stocks and flows that they have to take in order to correct the imbalance, and this is precisely why flaws of coordination are of fundamental importance for understanding why macro elements affect micro ones.

The channels of transmission through which coordination flaws at the aggregate level end up affecting the decisions of the individual agents are many and varied. In view of the type of analysis with which we are concerned here, however, a general classification of the fundamental channels will be enough. The basic transmission mechanism in a market economy is naturally that which operates through the price system: i.e., through variations in the relative prices on both the real and financial sides. However, the price system does not operate optimally, because prices are not completely flexible, the supply of information is not perfect, there are factors which weaken competition, and there are rigidities and frictions in the reallocation of resources. In reality, it is because of these market flaws that there are flaws in coordination and imbalances which lead to the generation of false relative price signals. In such circumstances, the fact that the price mechanism is not optimal leads to over- or under-corrections of prices which cause variations in amounts (of supply or demand) and wrong financial decisions: that is to say, decisions which prevent the agents from being able to trade the planned amounts on real and financial markets. The phenomena of unemployment on the real side and situations of over-indebtedness or severe liquidity constraints on the financial side are the most visible signs of this type of situation.

When the agents realize that their decisions may be mistaken because the prices do not include all the



relevant information or include information which may be wrong, they seek information to supplement that provided by relative prices. As the most visible effects of the imbalance affect the real amounts traded and the variations in the agents' financial position, two new sets of signals appear which need to be taken into account in individual decisions: information on the real amounts traded on the markets and information on financial amounts provided by the financial indicators prepared on the basis of the agents' balance-sheets. It is therefore necessary to incorporate two types of transmission mechanisms as well as prices which affect microeconomic decisions and through which macroeconomic elements ultimately affect microeconomic ones. These are, on the one hand, the mechanisms operating through quantitative indicators on the real side (such as unemployment and idle capacity), and on the other, those acting through variations in the financial quantitative indicators. Among the latter are flow/flow indicators (such as that reflecting interest/sales); short-term stock/stock indicators (such as that reflecting liquid asset liquidity/short-term debt receivable) and long-term indicators of the same type (such as indebtedness/net worth), and stock/flow indicators (e.g., sales/debt).

Once the special features of the macroeconomic problem have been defined (its basis on the fundamental variables and flaws of coordination, on the one hand, and the transmission mechanisms between the aggregate imbalance and the microeconomic forms of conduct, on the other), it remains to see how the effects of the economic imbalance lead, under certain circumstances, to changes in the morphology of the micro structure and in its evolution over time. As we already noted, phenomena of instability are of fundamental importance in this. We now wish to show how this links up with the quantitative magnitude of the flaws of coordination, their duration in time, and their recurrence.

Total coordination (that is to say, the complete absence of macro problems) only occurs in a context of general equilibrium, and such a context is an ideal construct. Nevertheless, it is a useful construct because reference to such a situation makes it possible to consider different degrees of macroeconomic imbalance. Although economies are always to some extent in a state of imbalance, a limited degree of imbalance may be considered of little significance in determining how they function, and the assumption of balance may be useful when modelling such functioning. The macroeconomic problem takes on major

importance, however, when the size of the imbalances in the fundamental variables is so great that it significantly affects the functioning of the economy.

In traditional macroeconomic analysis, the aggregate imbalance is seen as a temporary phenomenon and the main emphasis is placed on the search for the best means of intervention—especially in terms of the use of fiscal, monetary and exchange rate policies—capable of solving the flaws of coordination and at the same time minimizing the length of time during which the economy will be operating in a state of imbalance. Leaving aside the recent discussions on whether such policies are necessary or not, in traditional analysis it is assumed that the imbalance is temporary, either because the economy regulates itself in a suitable manner without the need for policy intervention, or because, if this is not so, it is nevertheless possible to speed up the adjustment process by “fine tuning”. If this were indeed so, the repercussions of macroeconomic imbalances at the micro level would not be too serious.

This approach becomes too narrow, however, when analysing the macroeconomic problem as it occurs in an economy like that of a typical Latin American country. The basic reason for this is that the macroeconomic problems faced by the region usually display different characteristics from those typically encountered in developed economies. The most notable differences are in the magnitude, duration and recurrence of macroeconomic imbalances. These features are displayed in many and varied ways in each particular economy. However, there is one feature which unites in itself the variety of factors that help to determine an economy's propensity to give rise to flaws of coordination: namely, the degree of stochastic volatility and unpredictability as regards the evolution of the fundamental variables. The more volatile and hard to model the stochastic process generating the observed evolution of the fundamental variables is, the harder it will be to anticipate that evolution, the greater the uncertainty will be, and, ultimately, the greater will be the economy's propensity to generate external or fiscal imbalances or imbalances between saving and investment. In such a context, there will be repeated periods in which serious flaws of coordination will occur.

In an economy which displays these features in the evolution of its fundamental variables, there will be forms of conduct at the microeconomic level

which are not observed when this situation does not prevail. What we wish to highlight is that it is one thing to pass through a stage of imbalance, but quite another to live in an economy which has a systematic propensity to generate imbalances. In the latter case—unlike what is maintained in traditional macroeconomic analysis—since a state of macroeconomic imbalance is perceived to be a recurrent phenomenon, the agents see as profitable certain forms of micro-economic adaptation which would not be so viewed if imbalances were only sporadic and transitory phenomena. It is reasonable to assume that, in an economy which has a structural propensity to generate macroeconomic imbalances, the influence of macro elements on the micro structure will be much more permanent and visible. We have already seen that the macro-micro transmission mechanisms operate through the price system, the quantitative information available, and the financial position of the agents. It is worth dwelling briefly, then, on the special features displayed by such channels in an economy with a propensity to generate recurrent and unstable imbalances at the macroeconomic level.

Let us begin by looking at the way this works through the price system. As the main responsibility for eliminating imbalances in market economies is assigned to relative prices, an important consequence of volatility of the fundamental variables will be higher and more pronounced fluctuations in relative prices. That is to say, in the relative prices which economic analysis identifies as key elements precisely because they are associated with the fundamental variables (real exchange rate, real wages, interest rates, etc.). If the price signals received by the agents are more volatile, the degree of uncertainty surrounding the decision-making process will tend to be higher, and there will therefore be a greater probability that individuals will take wrong decisions which will later lead them into a situation of imbalance.

The evolution of the amounts traded in a situation of imbalance is not independent of the foregoing. We have already seen that because of various imperfections (rigidities, etc.) not all the adjustment will take place through prices. Consequently, the quantitative amounts too will evolve in a more volatile manner in a context where it is difficult to foresee the behaviour of relative prices. There will be abrupt and unforeseen changes in these quantitative amounts during the adjustment process, thus giving rise to rapid and recurrent recession/expansion cycles which will add still further uncertainty to the micro-economic decision-making context.

Finally, since in a monetary economy every transaction on the real side has a counterpart on the financial side, the indicators in the financial balance-sheet will also tend to show marked and unforeseen changes. In reality, unforeseen variations in prices and quantities can put the agents off balance even when the latter are taking a "wait and see" attitude at the financial level. This happens, for example, when unforeseen devaluations give rise to equally unforeseen transfers of wealth which often sharply change the financial position of the agents (for example, by turning a solid financial position into a highly speculative or Ponzi position) or when deep recessions lead to unsustainable financial positions.

It is precisely this differentiated manner in which the macro-micro transmission mechanisms operate that explain why, in an economy with a tendency to generate instability, macro imbalances produce micro changes. In reality, the changes observed are related in one way or another with the following fact: in an economy with a high degree of macroeconomic uncertainty in which it is easier to make mistakes, flexibility for changing past decisions has an economic price.<sup>4</sup> Empirically speaking, the most direct way of verifying this fact is to observe the enormous differences of perceived risk between short- and long-term levels of yield. Often, there are situations where these differences become infinite for some terms, so that long-term credit markets simply disappear.

This sort of extreme preference for flexibility has fundamental consequences for real resource assignment, the morphology of the financial system, and—through its effects on investment and innovation capacity—on growth. Later on in this article, we will make use of this result, which is one of the central conclusions of our study because it directly affects the development of production. For now, however, we wish to highlight two other points which are connected with the dynamics of adjustment in equilibrium and the restrictions that an unstable economy imposes on macroeconomic policy.

In an unstable economy, the reactions of individuals not only bring about changes in the micro structure: these changes can also generate mechanisms of adjustment in disequilibrium which lead to explosive dynamic paths of action. For example, there may be a fiscal deficit and inflation may speed up. In order to

<sup>4</sup> The way we use the concept of flexibility is inspired by Hicks, 1974.

protect themselves from the effects of this speeding up, individuals react by shortening the duration of their contracts on a generalized basis. This has the result of narrowing the time horizon for microeconomic decisions. There are investment projects which are not carried out, and financial assets which are no longer in demand. As a result, the level of activity declines and it is harder for the government and the private sector to find takers for debt, even at very short terms. The lower level of activity reduces tax revenue, the fiscal deficit increases and, in the context of the lower demand for public bonds, the only way the government can finance its outlays is by increasing the rate of money issue. This speeds up inflation, and the whole vicious circle continues. The path of adjustment in disequilibrium begins to show signs of explosiveness, and this is seen as confirming the correctness of the individuals' decision to shorten their contracts in order to adapt to an unstable economy. The adjustment in disequilibrium leads to the consolidation of the changes at the micro level.

These mechanisms of feedback of disequilibrium and consolidation of microeconomic changes also affects the effectiveness of economic policies. When there are frequent unforeseen changes in the time path of the fundamental variables, the authorities are obliged to make frequent radical changes in their policy instruments in an effort to offset the unbalancing effects. In this context, it is highly unlikely that the authorities will gain sufficient prestige to give credibility to their policies.

This has two negative consequences. First, it is hard for the economic agents to adapt their forms of conduct in a rapid and flexible manner when the government announces radical changes in policy: in a

context of uncertainty, conservative and defensive stances may be safest, since they ensure greater flexibility. Second, the government is obliged to exaggerate in choosing the quantitative goals of its policies, for its announcements must be dramatic if they are to change the conduct of conservative economic agents.

These two facts are a permanent source of instability and flaws in macroeconomic coordination in the countries of the region. If the policies seek dramatic goals, yet the economic agents' conduct does not change in the direction desired by the authorities, the consequences in terms of macroeconomic imbalances and disturbances of production may lead to severe distortions. Problems of this type have been a typical feature, for example, of the protection-liberalization-balance-of-payments crises-protection economic policy cycles observed in the past in Argentina, Chile and other countries. In order to seek credibility, the authorities launch a rapid and highly ambitious trade openness programme, in the hope that the private sector will take the openness as a permanent fact and invest in industrial conversion. As the greater openness gives rise to an explosion of imports and an unsustainable current account deficit, however, the private sector foresees that it will not be possible to maintain the system, and therefore does not invest in conversion of its activities. In such a context, exports stagnate while imports soar. When it becomes impossible to finance the resulting current account deficit, the authorities are obliged, in order to ensure a minimum of macroeconomic stability, to reimpose not only high tariffs but even outright prohibitions and import quotas. Thus, *ex post*, the defensive forms of conduct of the economic agents are endorsed as correct by the economic policy.

## IV

### From micro to macro: structural imbalance and macroeconomic stability

Not all countries display the same degree of macroeconomic instability, because in each country the volatility of the fundamental variables and the specific mechanisms of adjustment to imbalances are different. Such individual features are closely related with the structural characteristics of each economy. It is

precisely for this reason that micro factors help to determine the economy's capacity to absorb macroeconomic shocks more or less effectively.

The economic structure is made up of a production base (technology, resources, innovation capacity), individuals, markets and institutions. Consequently, the

economy's capacity to absorb shocks that are reflected in flaws of coordination may be assessed as a function of: i) the quantity and quality of the auto-regulation mechanisms (markets and institutions) which can cushion the shocks and spread them over time, and ii) the features of the production system which make it more or less flexible as regards the reallocation of factors of production in order to adapt to new situations (e.g., those arising after shocks).

As a function of the foregoing, economies can organize themselves in line with the degree of development of their markets and institutions and the diversification of their production structure. In the case of economies with a significant degree of industrial development, for example, the two criteria in question could be used to establish an order in which the developed capitalist economies are at one extreme and the former Socialist economies, now in a process of change, at the other, with the larger Latin American economies somewhere between the two.

Under criterion i), the auto-regulation capacity depends on the degree of development of markets and institutions. Both the market structure and the institutions directly or indirectly connected with economic activity are of crucial importance, because they determine the capacity to handle the uncertainty which is inherent in all economic activities and because they can significantly help to soften the unbalancing effects of volatility.

The greater the degree of development of the market structure, the smoother the process of price determination will be and, consequently, the smaller will be the likelihood that lasting imbalances and unstable processes will arise. A "full" system of markets would allow the elimination of spot imbalances to be spread over time through the operations of futures markets, while the uncertainty would be handled through the activities of the insurance markets. In this sense, the ideal reference model is the "perfect" market and information structure which has all the mechanisms needed to guarantee full coordination of plans and decisions adopted by individuals on a decentralized basis, in which the reallocation of resources in response to items of information which change the information context takes place more or less instantaneously and without involving significant costs.

No real economy has such characteristics, but the developed capitalist economies have structures which come closest to this theoretical model. Although the structure of those economies displays numerous market flaws, there are usually substitutes

which come close to the characteristics of the missing markets. For example, the absence of generalized futures markets is less serious when the capital markets for various terms are well developed, and although there may not be markets for taking out insurance against all types of risks, the insurance markets for different types of risks are nevertheless much more highly developed than in a typical Latin American economy.

The conclusion to be drawn from the foregoing is that the degree of "completeness" of microeconomic market structure is indeed relevant for macro dynamics, since there is a close correlation between flaws of macroeconomic coordination and the magnitude of market flaws. The greater the number and size of market flaws, the more serious is the weakness—or even absence—of market mechanisms that can cushion imbalances, and there is consequently a greater tendency of the economies to generate imbalances and dynamic adjustment paths which tend to reproduce or amplify the imbalances instead of correcting them.

The degree of development of the institutions connected with economic activity affects the likelihood that flaws of macroeconomic coordination may arise, for various reasons. Two of these are worthy of special mention. The first is that there are institutional arrangements which can make up for market flaws such as the absence of some key futures or insurance markets, and they are therefore important mechanisms for reducing uncertainty. These institutions are important in establishing inter-client relations in order to reduce the uncertainty of relations among firms operating in a world of spot markets; in making up for flaws in the labour market or for the externalities generated in the process of training financed by private firms; in providing substitutes for non-existent credit markets, through State banks or client/supplier/company credit relations, etc.

The second reason is that the strength and soundness of institutions reduces the volatility of the fundamental variables. The more highly developed public sector institutions (such as the tax structure) are, the less likelihood there will be of fiscal shocks which lead to macroeconomic imbalance. The more efficient bank supervision practices and the selection methods used for the assignment of credit by commercial banks are, the less likelihood there will be of a financial crisis, with all its consequent negative externalities for macroeconomic balance. Furthermore,

the proper development of institutions is also important because there is a correlation between it and the degree of stability of the legal and regulatory framework, which is in turn of decisive importance for the evolution of investment in particular and the degree of uncertainty in general. In an economy based on private property, legal security is not only a necessary condition for the very existence of markets, but also for the existence of the investments which will ensure the reproduction of the economic system.

Criterion ii) referred to earlier directly concerns the production structure. Generally speaking, the lower the degree of diversification and sophistication of production, the less capacity there will be for quickly reallocating resources to new activities when permanent shocks occur. In economies which are poorly developed at the production level, there is a larger amount of rigidities which prevent rapid conversion of the production structure. This means that the process of transition and adjustment after shocks is longer and, consequently, the length of time during which the economy is functioning in a state of imbalance will be longer too. It is important to note that—at least empirically—it has been proved that factors i) and ii) are not independent and that this fact tends to boost the mechanisms that reproduce and prolong imbalances.

Thus, we see first of all that the lack of development of production has a positive correlation with the lack of development of the financial and capital markets. The propensity to instability is stronger because the rigidity of the production structure makes the transition processes longer, and the lack of capital markets makes it very difficult to finance long processes of conversion of production. The result is that in a typical Latin American economy, for example, there are prolonged periods of shrinking production which do not necessarily lead to successful conversion of the production apparatus but rather to net losses of production capacity which had been built up in the past. Typical examples of this are the processes of shock treatment aimed at securing greater economic openness which are marked by the disappearance of substantial parts of the industrial sector, without the appearance of new forms of specialization and economies of scale in other segments of the industrial system, because of the lack of finance for conversion.

Secondly, we also observe empirically that there is a correlation between the degree of development of

production and the level of sophistication of the institutions connected with economic activity. This means that the development of institutions designed to make up for markets which do not exist because of market flaws is also delayed; thus, the capacity to handle uncertainty is directly related to the insufficient sophistication of the production system. In reality, this is hardly surprising in the light of the various studies that exist on industrial organization. These studies show that the development of institutions designed to handle uncertainty outside the market proper, such as relations among clients, suppliers and companies, tends to be greater in the more sophisticated industrial sectors, where prices play a much smaller role in resource allocation than, for example, in the commodities and raw materials markets in general.<sup>5</sup> Thus, the lower the degree of sophistication of production, the smaller will be the economic presence of these institutions and the greater the role of uncertainty and instability.

Two simple examples may serve to illustrate more clearly what we have been trying to show in this section. The first refers to multiplier effects and illustrates the role of changes in the micro structure in determining the macro adjustment dynamics.

The magnitude of the multiplier effect of expenditure is greater in an economy like that of Argentina than in the present-day United States economy. It is a well-known fact that the multiplier effect has been gradually weakening in the latter economy, to such a point that its very existence has been questioned since the early 1960s. In contrast, this effect was clearly discernible in the 1930s. This change in the dynamics of macroeconomic behaviour over the course of time may be attributed to the greater complexity of the economic structure (development of markets and institutions and accumulation of wealth). To put it in a nutshell, wage-earners are now richer, have unemployment insurance, and have greater access to credit, so that a temporary reduction in their current income affects their consumption expenditure less than it did sixty years ago. In contrast, the structure of the Argentine economy in this respect is more like that of the United States in the 1930s. A reduction in the current income of Argentine wage-earners (who are poorer than their United States opposite

<sup>5</sup> Scherer (1980) provides a whole mass of collected data on industrial organization which support this assertion.

numbers and do not enjoy generalized unemployment insurance) imposes a liquidity constraint on them which limits their consumption expenditure. When this happens, we see the repercussions of the "income effects" which determine the magnitude of the multiplier. Depending on the structure of the economy, these same mechanisms also determine various other forms of behaviour in the presence of situations of imbalance: for example, the reaction to a devaluation. The structural diversity—especially as regards the diversification of the production base—determines why a devaluation may be recessionary in Argentina but expansionary in the United States.

The second example concerns the lack of diversification of production, seen as a direct cause of the degree of macroeconomic volatility. One of the

main determinants of the variability of the current account balance in Latin America is the variability of the terms of trade. As exports display a low level of diversification, as a result of the lack of competitiveness of the most dynamic sectors of industry (Guerrieri, 1993), the trade account often suffers big changes when there are negative external shocks. The lack of diversification of production means that the volatility of the terms of trade is directly reflected in volatility of the fundamental variables that affect the external sector. The fact of depending on just a few export products makes it impossible to cushion this volatility through the diversification of risks implicit in a diversified export structure. Thus, the lack of development of production becomes a direct source of macroeconomic volatility.

## V

### The micro-macro interaction, the production structure, and growth

So far, we have seen how macro instability can bring about changes in the micro structure and how micro weaknesses—in the production structure, in markets and in institutions—can lead to flaws of coordination. The division we have made in dealing with these two questions is due solely to reasons of methodology and presentation. In order to avoid misunderstandings, we would like to make it clear that, at the empirical level, the general rule is that there are a host of interactions and feedback mechanisms between macro and micro factors which mean that in reality there is a kind of simultaneous determination of the micro and macro characteristics of a given economy. When analysing specific cases, it is very difficult to decide whether an economy displays, say, serious market flaws due to its macroeconomic instability or whether, in contrast, it is the lack of some key markets—such as a long-term capital market—which is responsible for the situation of aggregate instability.<sup>6</sup>

This obviously does not mean that, in a specific situation, the final result of the process of interaction of micro and macro factors cannot be analysed by separating the incidence of each of these two factors. In reality, the possibility of making this analytical separation of those factors is of fundamental import-

ance for understanding the growth restrictions faced by an economy in a given economic situation. Indeed, in order to round out our methodological approach we would like to dwell precisely on the implications that this has for growth.

In order to present the question of growth restrictions as succinctly as possible, we may note that in another article (Fanelli and Frenkel, 1994) we systematized them as a function of four problems which, one way or another, economies must solve in order to be in a position to grow. First, there is the Smithian problem: in order to grow in a rapid and sustainable

<sup>6</sup> Normally, there will tend to be mutual feedback between these phenomena. This is why, in periods of acute crisis—when both the instability and the lack of markets exceed a certain critical threshold—it is so hard to find a way out. Stabilization policies which are not accompanied by structural reform policies tend to fail because of the existing shortcomings in market structure, while structural reform policies not accompanied by stabilization policies fail because of the uncertainty prevailing in an unbalanced macroeconomic context. This is a further argument in favour of accompanying stabilization strategies with reform policies, and also in favour of not trying to implement reform policies which may lead to worsening of the macroeconomic imbalance (Fanelli and Frenkel, 1994).

manner, an economy must generate a rate of saving which allows it to keep up a high rate of investment financed from its own resources. Second, there is the Keynesian problem, which holds that it is not only necessary to save but also to have efficient mechanisms for intermediating between saving and investment: i.e., it is necessary to have a well-developed structure of markets and institutions capable of ensuring that the saving effort is effectively converted into productive investment. The third problem is the neo-classical one, which stresses that the available resources must be allocated efficiently in order to maximize the growth rate: it is not just the amount of investment that is important, but also the efficiency of the investment. Finally, there is the Schumpeterian problem, which emphasizes the importance of creativeness as the motor for growth and highlights the role of entrepreneurs and firms that make innovations on the technological, organizational and other levels.<sup>7</sup>

The micro-macro interrelations which we have identified are of fundamental importance for the last three growth problems mentioned above,<sup>8</sup> since they help to shape the markets and institutions for financial intermediation between saving and investment; they determine the efficiency with which the relevant economic information is processed—through the price, quantity and financial signals—, thus helping to optimize resource allocation; and they markedly affect the innovation capacity of the economy by influencing the conduct of the individual agents and the institutions which make up the national innovation system.<sup>9</sup>

Many of these effects can be examined on the basis of the micro changes which take place in contexts of high instability, because in these conditions the mechanisms in operation can be “seen” more clearly inasmuch as the effects on the variables are more marked than in situations of only slight imbalance.

When analysing the influence of macro factors on the micro structure, a central conclusion was that the micro changes brought about by macroeconomic instability have the special feature that they affect the degree of preference of the agents for flexibility. In relation to the growth problems mentioned above, changes in the degree of preference for flexibility are of fundamental importance, because they bring about variations not only in the amount but also in the efficiency of investment, as well as in innovation capacity.

In a situation of a high degree of preference for flexibility, the shortening of the time horizon means that investment projects with short lead times have an economic premium over longer-term projects, and, in turn, when the lead times are identical, the profits expected from higher-risk projects are discounted at an excessively high rate. It is also empirically observed that, in highly unstable contexts, corrections in discount rates for long-term or higher-risk projects not only very rapidly incorporate information on increases in system risk but actually tend to over-react. These over-reaction phenomena, in turn, give rise to marked errors in the allocation of resources between periods, because they skew the price and quantity signals. It follows from this that the investments made will tend to be inefficient and this will further aggravate the neo-classical problem.

Generally speaking, in a situation of high preference for liquidity, preference will be given to short-term investment projects which have the least correlation with the economic cycle and the least dispersal of yields. When the preference for liquidity increased in Latin America in the 1980s, for example, only a few investment projects were able to comply with the above conditions: hence, it is hardly surprising that there were sharp falls in the investment/product ratios in most of the countries of the region. Nor is it surprising that foreign direct investment went mainly to the acquisition of privatized public utilities, which comply with the fundamental requisite of being businesses that handle a very large amount of liquid resources, use well-tried technology, and are classified as low-risk investments.

In the lists of “beta” asset ratings<sup>10</sup> which are used on the stock exchanges of developed countries in order to measure the economic risk of investment projects, for example, companies connected with

<sup>7</sup> Nelson (1991 and 1992) analyses the role of the entrepreneur *vis-a-vis* that of the firm in the innovation process and as an agent of “creative destruction”.

<sup>8</sup> In this article we will not be dealing with the question of how they affect saving constraints.

<sup>9</sup> For details of national innovation systems, see for example Nelson (1993), Mowery (1993) and Johnson and Lundvall (1988).

<sup>10</sup> The beta rating is the sensitivity of the yield of an asset to variations in the overall yield of the assets traded on the market.

public utilities such as gas, electricity and telephones are those that have the lowest beta ratings (Brealey and Myers, 1986). This shows that these are low-risk businesses with profits that do not tend to move in line with global market trends. Businesses associated with spearhead technology and innovation—electronics, for example—, which are precisely those that could contribute most in terms of technological learning to the countries of the region, are those with the highest beta ratings. As a high beta figure implies higher risks, this means that in a context of high uncertainty characterized by over-reaction in the correction of discount rates, the degree of profitability needed in order to convince investors to carry out such projects is so high that there is very little likelihood that a project involving advanced technology will be implemented. It may also be noted that in view of the fact that foreign direct investment is one of the fundamental vehicles for the transfer of technology to a developing country (Dahlman, 1993; Dahlman and Nelson, 1993) and that privatization processes provide foreign investors with the possibility of acquiring low-risk businesses, the conclusion is that in the present context little can be expected from innovation as a source of growth. Structural reform, in a situation of instability, may be acting to some extent against greater sophistication of the production structure, if it causes the acquisition of public enterprises to push aside projects of higher risk and technological sophistication.

In fact, innovative activities—and hence the possibility of solving the Schumpeterian problem—are among those most seriously affected by the increased preference for flexibility. This takes place largely because in under-developed countries the technological learning process is intimately related to the acquisition of new production equipment, so that when investment declines the process of technological change is adversely affected too (Bradford, 1994). There is also a second reason why the innovation process is tending to stagnate. When there is great uncertainty about the price, quantity and financial information, businessmen responsible for investments usually adopt defensive strategies, and such strategies weaken aggressive competition and the will to make innovations in the production process (Katz, 1993). In a very concrete sense, it could be said that the preference for flexibility, just as it tends to undermine the efficiency with which the markets operate, thereby aggravating the neo-classical prob-

lem, also tends to break up national innovation systems by severely affecting the behaviour of the agents and institutions which help to keep them going, and this undoubtedly makes the Schumpeterian constraint on growth even more severe.

Microeconomic changes which increase the preference for flexibility also very significantly affect the financial intermediation structure. In a situation where there is a generalized preference for flexibility in microeconomic decisions, there is a generalized shift of demand for financial assets towards the short term and also often towards foreign currency holdings (as in Argentina, Uruguay, Peru or Bolivia). This means that liquid or very short-term assets increase in comparison with those of a longer term, and the ratio between the market price and value on issue of instruments denominated in local currency will tend to go down. Likewise, liquidity comes to be just as important as yield when determining the preference for a given asset. This in turn has as its correlation, as far as the generation of credit is concerned, the fact that the conditions for gaining access to long-term funds are increasingly onerous and, when the available credit is in foreign currency, companies whose activities are linked to the domestic market will be obliged to run bigger exchange risks.

To put the matter in another way, in addition to the soaring discount rates due to the economic risks involved which we mentioned above, it is also necessary to take into account the increase in such rates caused by the big rise in financial risks. Thus, two investment projects which have identical economic risks but different financial risks—because the financing structures available to their investors are different—may receive different ratings in the selection process, so that one may be carried out but the other not. It is a well-known fact that in all economies the financial risk affects the economic risk of a project. The specific feature of an economy that shows an excessive preference for flexibility is that this difference is exacerbated in that case.

Obviously, this plays a large part in determining the growth capacity, because it affects the process whereby the winners in the competition for resources are selected. The selection comes to be very strongly related to the specific financial characteristics of each branch of production, but much less to their economic characteristics. After a considerable length of time has passed in an economy where the long-term capital markets are either absent or too limited, the



firms that still survive in the process are not necessarily those with the best capacity for efficiently allocating the existing resources or innovating in terms of products or production processes, but rather those that are located in branches of production which –because of their type of industrial organization– are least affected by this market flaw.

The firms which tend to survive best in this type of financial environment are those that make intensive use of capital and have predictable income.<sup>11</sup> These types of firms can increase their coefficient of indebtedness to a relatively greater extent without producing major jumps in their financial risk indexes. Once again, the branches of production where these firms are most often to be found are those associated with privatized public services. They are followed in the scale of survival capacity by big companies which, although they also have a high capital density, have less predictable operating incomes. In this case, they have less capacity to increase their coefficient of indebtedness without significantly affecting their financial risk indexes (typical examples are firms operating in such branches as steel, cement and petrochemicals). Finally, the firms which are most vulnerable are medium-sized and small companies whose operating income is heavily dependent on the global economic cycle, such as the firms which are so numerous in broad sectors of Latin American industry (textiles, small capital goods producers, etc.). The skewing of the bases of “natural” selection in the competition for resources gives rise to forces which militate against the solution of both the neo-classical and the Schumpeterian problems.

It should also be noted that the lack of development of the financial system also affects these problems. On the one hand, the segmentation which is typical of poorly developed markets tends to severely prejudice access to credit by small and medium-sized firms, thus further strengthening the tendencies mentioned earlier which favour big firms. On the other hand, the banking system plays a substantial role in improving resource allocation, through the selection mechanisms used by loan officers when allocating loans to the private sector.<sup>12</sup> When credit does not exist, such mechanisms cease to operate and private investors lose an important source of independent appraisal of their projects.

In reality, some of the main features of the production structures generated in Latin America by a decade of instability and financial astringency seem to be related to the “ranking of financial survival potential” which we just referred to. The net result of the interaction of microeconomic and macroeconomic phenomena in the context of the debt crisis was economic stagnation and a fall in the investment rate. The latter fact, together with the marked instability which prevailed, caused a striking setback in the process of diversification of production in Latin America. The possibility of achieving integrated development of the industrial sector on the basis of the experience gained in import substitution definitively disappeared. The industrial sectors which survived the crisis best were basically those processing natural resources and a few mass production industries such as the automobile industry –which at all events is passing through a profound process of change whose outcome is uncertain in some countries. Other rather more sophisticated branches, such as the production of capital goods, have tended to disappear, and the same thing has occurred in some segments of the textile industry. The “new” dynamic sectors are associated with the privatization processes in countries such as Chile, Argentina, and to a lesser extent Mexico (Guerrieri, 1993; Katz, 1993).

To conclude with the question of growth, let us look at a last important consequence of micro changes. As we already noted, situations of preference for flexibility are usually reflected in a big increase in the demand for foreign-currency assets. In Latin America, this phenomenon has been reflected in greater dollarization of the domestic financial system, or else in capital flight. Both these phenomena further aggravate the Keynesian constraint, by making the process of intermediation between saving and investment more difficult. However, the two phenomena do not each have the same consequences. The main adverse effect of dollarization is that it induces firms to take bigger exchange risks, but it also has a positive side in that it increases the capacity of the domestic banking system to make loans (in dollars). It therefore does not mean that domestic saving cannot be channelled to investment, but that the costs of such intermediation may be higher for borrowers because they will be exposed to higher exchange risk.

<sup>11</sup> For a classification of the financial characteristics of business finance as a function of the characteristics of the corresponding branch of production, see World Bank, 1989.

<sup>12</sup> For more details of this role of the financial system, see Stiglitz, 1993.

It is precisely this element which differentiates dollarization from capital flight. In the case of the latter, the increased demand for foreign-currency assets means that part of the domestic saving will go to finance investment projects in other economies. This has very negative effects on the Keynesian constraint, because the process of intermediation between saving and investment is interrupted at the domestic level and –unless there is access to external finance, as in the 1980s– growth begins to be restricted by the availability of savings. A typical manifestation of this is the rationing of bank credit. As a result, investment projects cannot find funds to finance them, not because there is little domestic saving, but because that saving is “exported” through the portfolio decisions of the agents.

The fact is that, historically, the challenge posed by the Keynesian constraint on growth has been one of the most difficult to overcome in Latin America. The establishment of public banks for the purpose of promoting development in the region may be interpreted as an effort to correct this congenital flaw in economic organization. Generally, however, the func-

tioning of such banks has also suffered from serious flaws, which have become critical as macroeconomic instability has widened the distortions and increased the incentive for rent-seeking activities. This seems clear in many Latin American countries –Argentina, Brazil and Chile, for example– where the deterioration of the functions of channelling savings and selecting and efficiently allocating credit was associated with the rise of inflation.

Similarly, the greater relative importance of public saving and the financing of private investments with fiscal transfers in Latin America has also been a reflection of the weakness of the financial systems. The fiscal crisis and the need for stabilization have imposed strict limits on this traditional role of the public sector, however. In reality, the lack of success in developing these institutional mechanisms for making up for the market flaw represented by the absence of a long-term capital market merely goes to prove that macroeconomic instability is just as harmful to the development of markets as it is to that of institutions.

(Original: Spanish)

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