

**ECONOMIC POLICY IN STORMY WATERS:
FINANCIAL VULNERABILITY IN EMERGING
ECONOMIES***

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I. Introduction

The science of economics is still very inexact, but it is nevertheless an

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important pillar of peace and democracy. Without it, it would be difficult for the government to have a constructive dialogue with its citizens. Economic policy would be subject to no intellectual discipline. At the end of the day, only violence and dictatorship would remain to unravel such matters. This has always been the practical reason for my interest in this discipline. This distinguished award gives me the opportunity to pass this message on to future generations.

II. Time Inconsistency

I will now refer to the first of the topics mentioned when the prize was awarded, namely time inconsistency. I do so because it is a matter that has very clear practical connotations, and will allow me later to discuss matters of economic policy of great significance for Latin America, such as dollarization and monetary union.

Time consistency sounds like one of the Commandments. A feature of the just that should be emulated by all. The problem is that this commandment might very well not be observed by the just: doing the right thing all the time might mean not being time consistent, leading paradoxically to do the wrong thing (Calvo, 1978). It is as if there were such a sin as being “too good”. What is this about?

I will begin illustrating this phenomenon using an example from everyday life. Take the case of a father who wants the best for his son, but runs into the problem that the son does not study and spends his life playing football with his friends. Threats get the father nowhere. Frustrated, the father tries incentives, promising that if –and only if– school grades are good, he will take his son to see the World Cup. The kid is delighted with the proposal, but, quickly, analyzes the situation as follows: “Dad loves me a lot, and will continue to do so whether I study or not. He knows I’m crazy about soccer, so he will take me to the World Cup regardless of how I do in school. He is trying to make me believe that he will take me only if I study hard, but

tomorrow, by-gones will be by-gones, whatever I did is done, and since he wants to make me happy, he will take me to see the World Cup no matter what.” Result: the boy does not study and the father –wishing to do good at all times– still takes him to the World Cup. He breaks his promise, and the system clearly breaks down. It will be noted that if the father were to have had a reputation for toughness and were not to try to maximize the welfare of his son at every turn, the system would have worked. One possible solution would have been for the father in the story to have established an institutional agreement, whereby the decision to take his son to the soccer championship would take effect automatically, i.e. it would not be susceptible to review ex post. Let us now move on to the field of economics, where this type of solution becomes of interest.

I will say that a person, or government, is time consistent if the promises made today are met tomorrow (unlike the father in our story). Let us consider the case of a government that promises today that, from one day to the next, the rate of inflation is going to become low. This is a good announcement to make, because as a result the public will use domestic currency for transactions, instead of resorting to inefficient barter mechanisms. However, when tomorrow comes, what happened today is history. Whether people believed it or not, the announcement on inflation no longer matters. Therefore, tomorrow the government will be able to set the new daily rate of inflation without worrying about the inefficiency of barter that it would generate today, since “today” will already be yesterday. This provides governments with incentives to set a rate of inflation different from that which it is optimal to announce today. In reality, one can expect that the rate of inflation to be set tomorrow will be *higher* than that announced today, because the printing of money –which drives inflation– can be used to lower taxes –which are always distortive–. As a result, a government concerned about social welfare may be led to behave in an inconsistent manner over time. It should be noted that such a government has no intention of tricking the public. It does at each moment what is best for the public (just like the father in the story). First it announces low inflation so

the public does not resort to barter. Then it generates high inflation to be able to lower taxes.

The problem with time inconsistency is that sooner or later individuals are going to learn that they cannot rely on the announcements the government makes, generating *lack of credibility*. The public will then expect high inflation, not low as announced by the government. As a result, at each moment in time there will be an excessive use of barter. The economy will have converged to a situation that could be very far from maximizing social welfare. In other words, in questions of economic policy doing good things at all times leads to a bad result. It's a sin.

These observations have significant economic implications. In the first place, they make it possible to understand why certain countries are prone to inflation, even though their governments do the right thing. Before this literature was developed, it was thought that inflation was symptomatic of corruption or ineptitude of policy makers.

Second, these observations show that freedom from the scourge of inflation may require "tying ones hands", depriving the government of certain degrees of freedom. An example is the abandonment of monetary policy, as Argentina has done with its Convertibility Plan –by which the rate of exchange of the peso against the dollar has been set at one-to-one and the monetary base is firmly linked to the international reserves of the Central Bank–, or, to a certain extent, the adoption of the euro. One important feature of this type of drastic solution is that although it prevents economies from falling into crisis, the authorities lose the ability to manage monetary policy, even when, under ideal conditions, it would have been convenient to do so. It is for this reason that once such solutions are adopted, critics complain that governments have become excessively hand-tied, especially when the economy passes through periods of recession. Argentina is an example of this. The Convertibility Plan implemented in 1991 was able to reduce inflation to international levels for the first time in 50 years. Before the plan was introduced the country was on the verge of hyperinflation. However, now that inflation has been beaten, but

unemployment is for circumstantial reasons above 15%, there are voices calling for the system to be either abandoned or modified. Some of these voices consider, for example, that a devaluation would help to pull out of the recession.

It is not my intention here to review Argentine monetary policy or that of any other country, but this example, and the previous considerations regarding the fact that “better is the enemy of good” show that it is very difficult for economic policy to be exempt from credibility problems. This may be because the authorities have *many* degrees of freedom and can change their policies in mid-stream, or because they have *few* degrees of freedom and there is a threat that dissatisfied sectors will take power and eliminate the restrictions imposed on economic policy.

III. The Origins of Financial Crises

The above analysis shows fundamental reasons why the economic authorities are constantly being challenged by the private sector and must find a middle point where they can set a credible course for the economy. This problem is especially serious in countries where the economies are what we today call emerging. These countries cover a large part of the globe, and according to the International Monetary Fund include basically all countries except those that are highly industrialized (which I will call Advanced or Developed). The countries of this grouping that have been most prominent recently have been Russia, the countries of Latin America, South-East Asia (South Korea, Thailand, Indonesia, Philippines, etc.) and Eastern Europe (Hungary, Poland, Czech Republic, etc.). Emerging economies have been at the epicenter of financial crises since December 1994 (when the Mexican crisis known as the Tequila was unleashed). This vulnerability has been translated into significant political changes. Aged institutions have fallen, and now the phoenix arising from the ashes is encountering even greater credibility problems because it has no track record. Questions arise such as: Will it be able to bear the next financial crisis? or, Will it abandon pro-market

policies if there is another speculative assault on its currency? Further on I will comment on these questions and will suggest some solutions. Before that, however, it might be useful to make some comments on the origin and nature of these crises.

The year 1989 marked a key moment in the history of capital flows towards emerging economies. Flows began to increase at a rate never seen since the end of the Second World War. According to the IMF, the flow of capital in 1995 was 12 times greater than in 1989. For purely accounting reasons these flows are reflected as a greater accumulation of reserves and current account deficit for emerging countries. The current account deficit measures the total new net debt incurred by the country. In order to increase indebtedness it is necessary to increase spending, so this phenomenon of capital inflow into emerging economies led to increased spending and higher international reserves. During this stage these countries were in heaven. The problem was how to stop the increase in spending and monetary aggregates from leading to greater inflation. In other words, the problem was how to handle the boom.

The first interpretation of this phenomenon was that it reflected the success of the Brady Plan, designed to resolve the debt crisis in the eighties, and the pro-market reforms that had been recommended by multilateral institutions. Viewed in this light, capital flows were likely to continue for a good while longer, and were never going to be a source of problems. All that countries had to do was continue with the same conduct and success was assured.

At the beginning of the nineties I was working in the Research Department at the IMF, thanks to which I had the privilege of traveling all over the world, and particularly around Latin America. After an extensive tour in mid-1992, I began to realize that many of these countries were receiving international funds regardless of the reforms they had carried out or the monetary policy they were implementing. This led me to think, together with my colleagues Leonardo Leiderman and Carmen Reinhart, that what was happening must have its origins *outside* the emerging countries. This we confirmed in a study that argued that capital flows in Latin America have much to do with what

happens in the US (Calvo et al., 1993). For example, an important factor in determining these flows has been the short-term interest rate in the US. When interest rates in the U.S. drop, flows to Latin America increase and vice-versa. Interestingly, the period 1989-1994 –which as I indicated previously was a time when there was a massive increase in capital flows towards emerging countries– coincided with a period of low interest rates in the United States. Interest rates began to recover during 1994, and at the end of the year the Mexican crisis took place. Therefore, in spite of the considerable lack of precision in our estimates, our calculations had a certain predictive power. However, the most important implication was that emerging countries could be at the mercy of events beyond their frontiers. It is not enough to reduce deficits, it is also necessary to strengthen the structure of the house to protect it from the hurricanes that blow in from the rest of the world.

The Russian crisis provides the clearest and most interesting example of how it is that external factors can have a significant impact on emerging economies. Russia accounts for less than one per cent of world output, and it is neither a trading nor a financial power. Its trade with emerging economies is insignificant. However, the default on its domestic debt in August 1998 had an enormous negative effect on the prices of bonds of all emerging economies, resulting in these countries suddenly having to face skyrocketing interest rates.

This is known as a *contagion effect*, because unlike the case of the U.S. interest rate, there is no evident structural reason why emerging countries should have been hard hit by default on debt in a small corner of the economic world such as Russia. It is not that there is no explanation for this, just that such explanations as exist are outside the bounds of traditional economic theory. One explanation for which there is a certain degree of consensus is that the Russian default created serious liquidity problems in world capital markets, obliging important operators to liquidate their positions in other emerging economies, or leading them not to participate in the issue of new bonds by such economies (Calvo, 1999). This left the market almost exclusively in the hands of small investors, but the latter follow the lead set

by the major operators (the so-called specialists), creating a perverse situation in which they all attempt to dispose of their emerging country paper, resulting in the observed outcome. In short, if this explanation is correct, emerging markets can be made to suffer as a result of a mere error in perception. A Tragedy of Errors?

Let us now return to the subject of credibility we were considering previously. The credibility of a government is threatened by the phenomenon of time inconsistency. These problems are magnified when an economy suffers sharp adverse impacts. Furthermore, after the recent crisis there was considerable confusion, as it was not expected that the capital flows of the early nineties would be interrupted in the way they were. The confusion was even greater after the Russian crisis, because of the subtlety of the transmission channels. As a result it was -and still is- perceived that there is an increased probability that authorities will change their course, becoming inconsistent, as they now have the excuse that “the world has changed”, “the previous analysis was wrong”. This has left most emerging countries –as well as the multilateral agencies– with a level of credibility and confidence much lower than they could count on prior to 1998. As a result, the flow of funds has fallen considerably, particularly in the case of the so-called portfolio capital (that is to say the capital that is directed at stock market and fixed income accounts, rather than to take control of a company). Adjustments that previously served to re-establish credibility are now less effective. This poses a very serious dilemma for politicians attempting to restore their credibility, because they may well be forced to take measures that apparently go against those that have voted for them, but are essential to calm investors and avoid being choked off financially.

I have argued that external factors are important, but why have they resulted in such spectacular falls in output and employment? This is the heart of the matter. Nobody would have paid much attention to these crises if they were only to have cost the heads of a few bankers. These crises are worrying however, and threaten the credibility of the authorities, because they result in

a general impoverishment, and in some cases, such as Indonesia, countries have faced serious problems of government rule.

IV. The Nature of Financial Crises

One key aspect of recent financial crises affecting emerging economies is that they have been accompanied by a major cutback in capital inflows. In Thailand, for example, these flows were cut by an amount equivalent to 26 per cent of its gross domestic product during 1997. To adjust to these interruptions, countries have been forced to liquidate their international reserves and reduce their current account deficit. It is this last step that causes the most harm to the economy, as to do so these countries must lower aggregate demand, that is to say their total spending. In practice the amounts involved have been substantial and have consequently resulted in sharp falls in output and employment. This phenomenon, known as the Sudden Stop, is not experienced by developed countries, where the crises have been much less severe, and in many cases have been accompanied by an *expansion* of credit, rather than a strong contraction as in the case of the emerging economies (Calvo and Reinhart, 2000a).

There is still no consensus as to the reasons for this spectacular fall in credit, but the leading suspects are the financial sector and the short-term bonds issued by emerging countries. The latter in particular have played a prominent role in all recent crises. The Tequila crisis, for example, was unleashed because of the inability of the Mexican government to refinance its Tesobonos, relatively short-term bonds tied to the dollar. In South Korea and Thailand the crisis developed when banks found themselves in a similar problem. In Indonesia the private sector had borrowed in this manner and ran into refinancing difficulties, and lastly in Russia the government defaulted on part of its short-term domestic debt. Nevertheless, the financial sector—and the banking sector in particular—has also had a role to play in these crises.

Part of the inflow of capital was reflected in significant increases in bank

deposits. The increase in Latin America was dramatic, causing serious problems in the area of banking supervision, and bank portfolios were weakened. The most notable examples in this regard were South Korea, Thailand, Argentina and Mexico. Such weakness is not evident as long as capital inflows persist, but when the process slows down there start to be problems with liquidity and solvency. In addition, the severity of problems within the financial sector increases during crises, because as a result of the sudden stop, productive sectors are faced by a reduction in the demand for their products, which makes it hard for them to service their bank debt on a regular basis.¹ To avoid the collapse of the financial system and its implications for the system, central banks will typically increase credit availability, encouraging an even greater loss of reserves under fixed exchange rates, or an inflationary explosion under floating exchange rates. In practice, both of these happened. At the outset reserves were massively lost because the government did not wish to free the exchange rate (Calvo and Reinhart, 2000b), but after reserves had been exhausted it became necessary to let the rate float, causing major devaluations and higher inflation.

In the light of these comments, it is possible to view the effects of a sudden stop as follows. Sudden stops that are not corrected immediately are unlikely to be rectified in the medium term, since they generate financial problems that change the output conditions of the economy (Calvo, 1999). It is therefore possible that a sudden stop will lead to an economic imbalance which it will struggle to correct, thus justifying the pessimistic expectations of investors and lenders who provoked the sudden stop in the first place (a case of self-fulfilling prophesies or “multiple equilibrium”). It could also lead to a modest reduction in credit being multiplied because of the domestic financial difficulties it generates.

Why are emerging economies more vulnerable than advanced economies? The answer to this lies in the nature of the financial system, including not

¹ For a discussion of this phenomenon in the context of the crisis during the 1930s, see the classic work by Fisher (1933).

only the degree of development of the sector but also other aspects such as legal guarantees, stability and institutional transparency, and the credibility of economic policy. For reasons I do not have time to list or discuss, emerging countries tend to be well behind advanced countries in all these respects. However, it should not be forgotten that such crises have occurred *after* a significant capital inflow. As I have indicated, this seriously compromises the credibility of economic policies. There is a far greater potential for *capital outflow*, financial intermediation may have worsened, etc. This means that although other conditions may have been the same for both advanced and emerging countries, the fact that the latter received large and unprecedented inflows of capital makes them more vulnerable.

V. Emerging Bond Markets

What was it that led emerging countries to borrow so heavily from 1989 on? I have already mentioned that US interest rates declined in the early nineties, but this does not seem a sufficient explanation for the amounts we are talking about.²

To my mind, the Brady Plan has been a key factor. As I recalled earlier, this plan was launched to resolve the debt problems that began in 1982 with the Mexican crisis and persisted for much of the remainder of the decade. This debt had arisen from the syndicated bank loans granted to these countries as from the second half of the seventies. A significant proportion of these funds were provided by the recycling of so-called *petro-dollars* accumulated by oil producers as a result of the exorbitant oil prices that existed in the seventies. The point I want to emphasize however is that these loans were kept on the books of international banks, and there was no effective secondary

² According to the IMF, capital flows to emerging countries in 1989 totaled US\$ 18 billion, rising to US\$ 227 billion in 1995, the highest level for the decade; in 1999 the total was US\$ 80 billion, slightly more than one third of the maximum amount reached during the decade

market for them, partly due to the fact that whether they were paid or not depended very much on who the creditor was. Scattered among many small creditors, this debt would possibly have remained unpaid. In the hands of a few banks with access to the political power of the G7 group of countries, the story was different.

The Brady plan was a mechanism whereby these accounting entries on bankbooks were transformed into bonds. To increase the attraction of these bonds, they were supplemented with collateral in the form of US Treasury Bonds. With these enhancements, a secondary market began to be developed. The market value of these bonds totaled around US\$ 20 billion in 1990, rising to more than US\$ 100 billion in 1997. They were a great success, and today can be found in the portfolios of innumerable investors.

Nevertheless, what I would like to emphasize is that the Brady bonds established the basis for the development of an emerging economy bond market, in particular for those economies suffering from debt overhang (including many Latin American countries). The reason is that the bond market –and the stock market too, for that matter– is highly dependent on the information available on each debtor. Once this information has been obtained, it is easier for a debtor to issue bonds. In the case of the Brady bonds, these provided incentives for investors to obtain information on the sovereign governments issuing them, their macroeconomic conditions, fiscal and monetary policies, political stability and other institutional characteristics. However, this information is also useful when it comes to evaluating projects in the private sectors of these same countries. This is because repayment capacity depends not only on how good the investment projects financed by these bonds are, but also on the fiscal and monetary policy being followed by the country. For example, an excellent debtor might be unable to pay its debts if the government confiscates its business or imposes a prohibitive tax rate. Even more significantly, a company could fail if it borrows in foreign currency and then faces a strong devaluation of the currency.

The problem with such an expansion of credit based on the bond market

is that emerging countries do not have a *lender of last resort* if the price of bonds collapses. Most of these bonds are denominated in foreign currencies, so that the central banks of emerging countries can not do much to help. On the other hand, if a similar situation were to be faced by bonds or shares on the US market, the Federal Reserve would have the capacity to respond, as it did in October 1987. The international institutions at our disposal are not designed to handle such issues. Until recently, if emerging bond market prices collapsed and interest rates rose to the heavens, the one thing that the IMF could do was to send a mission to the country and, only after some time had passed, make a financing offer. Currently there is a new, more automatic line, the *Contingent Credit Line*, CCL, for this purpose, which could improve matters, but so far no country has wanted to call on it and the Fund itself has been obliged to change the way it would operate. It should be noted however that although the CCL would act as a source of liquidity during financial crises, this manner of resolving crises is very different from that which is normally adopted *within* the countries themselves. In the latter, central banks do not come to the defense of *borrowers*, as does the Fund, but assist the market, creditors and holders of bonds, providing them with liquidity so that the bottom does not fall out of prices, causing damage to the system.

From the foregoing, I conclude that the vulnerability of emerging countries is also related to the fact that we have unintentionally developed an emerging country bond market, without building at the same time the safeguards needed to avoid the phenomenon of a widespread collapse of emerging markets, as happened at the time of the Russian crisis. It is true that at the end of the day the G7 countries lowered interest rates and helped in the recovery, but this took place only after the collapse of the LTCM (*Long Term Capital Market*, the famous hedge fund managed by Wall Street gurus and two Nobel Prize-winners in Economics) threatened to cause a systemic crisis in the developed countries. The ambulance arrived, but it was too late. Brazil fell shortly afterwards, dragging Argentina down with it.

VI. National Economic Policy Proposals

We have already covered the two main topics I wanted deal with in my speech: consistency and inconsistency in economic policy, on the one hand, and the marvelous range of events, dilemmas and enigmas that has arisen as a result of the financial crises we have been suffering since 1994. The first matter could be dealt with in a logical and almost aseptic context. The second is made up of evolving forms that are sometimes better comprehended by the senses than by intellect. However, these two subjects show how difficult it is to carry out effective economic policy in an emerging country.

What can be done? The vulnerability of emerging economy bond markets, for example, suggests the need for new international financial architecture that includes the restructuring of institutions such as the IMF. This is a major topic that I do not intend to discuss during my talk. Instead, I would like to analyze what it is that emerging countries can do themselves in these situations. I will refer briefly to fiscal policy, debt maturity and monetary and exchange policy.

I will begin with the first two: fiscal policy and debt maturity, concentrating first on the fiscal deficit. As we have already seen, bonds have played an important role in the unleashing of financial crises. However, bonds are the result of past deficits, and in the case of government bonds, fiscal deficits. Therefore, this gives us even greater reason to recommend that emerging countries narrow their fiscal deficits. This is of course easier said than done. Fiscal deficits are not eliminated by showing better conventional deficit figures. Often emerging countries accumulate public debt without even realizing it. A common example is when banks, counting on the government to assist them if they run into problems, make high-risk loans. If there is no crisis, there is no debt. In a crisis, the government must make good bad bank debts, which in most cases increases public debt by more than 10 per cent of gross domestic product (see, for instance, Calvo and Reinhart, 2000c). One lesson is that emerging countries must reinforce banking supervision, and even more

significantly, must make it work as far as possible independent from political pressures.

Debt maturity (that is to say the maturity profile) is an important aspect. Short-term debt is especially dangerous because unlike the fiscal deficit it is a stock, not a flow. It can cause a balance of payments crisis (that is to say, a massive loss of reserves) although it may not be very large in proportion to output. For example, the Mexican *Tesobonos* had a value of around US\$30 billion, equivalent to less than 10 per cent of Mexican gross domestic product and not therefore a very considerable amount. However, in December 1994, at the time of the crisis, this figure represented around six times gross international reserves. As a result, when it became evident that it was going to be very difficult to refinance the *Tesobonos*, the authorities had to abandon their defense of the peso, freeing the exchange rate and watching the peso devalue against the dollar by around 100 per cent.

As I have already said, such speculative attacks on bonds were a phenomenon that was repeated in the case of other crises. For this reason it has become popular to consider that countries should tend to avoid holding short-term liabilities in excess of their liquid reserves if refinancing is not available. The Greenspan-Guidotti proposal, for example, suggests that at each moment in time emerging countries should hold sufficient liquid reserves for the government to be able to face its financial obligations falling due over the course of the following twelve months. This is certainly a reasonable proposal. However, as I have said, we do not have a proper explanation for short-term behavior. As a result, when trying to extend the maturity of the debt, harm might be caused to some other area of the economy. It should be noted however that both Argentina and Mexico have actively pursued this policy of extending the duration of debt since the Tequila crisis, which has shown to be highly effective in reinforcing the financial system.

I will now deal with exchange rate and monetary policy. To begin with, it should be made clear that there is no such thing as a totally flexible exchange rate. Governments all intervene in one way or another to reduce the volatility

of their exchange rates. In a recent study with Carmen Reinhart, we demonstrated that emerging country exchange rates are as a general rule more stable than the dollar/yen rate or the dollar/DM rate (Calvo and Reinhart, 2000b). The apparent reason for this fear of floating is that in international trade most prices are fixed in foreign currency, as is foreign debt. In addition, many emerging economies use foreign currencies (principally the US dollar) as a means of exchange and the proportion of deposits in foreign currency in local banking systems is high in a large number of emerging countries (see Baliño et al., 1999). Normally banking regulations require that banks should not assume exchange risks. As a result, the dollarization of deposits implies that banks must lend in foreign currency. This means that a significant proportion of domestic loans may also end up being denominated in foreign currency.

In these conditions, a devaluation could cause considerable damage in the non-tradable goods sector since it provokes an increase in the cost of international inputs and foreign-currency denominated debt. This can lead to a strong surge in bankruptcies, loss of output and employment in the non-tradable goods sector (typically the added value of the non-tradable goods sector exceeds 50 per cent of gross domestic product). Strong gains in value are also a problem, as they damage tradable goods (although these sectors are less vulnerable to the dollarizing of their liabilities). As a result, rarely is an emerging economy willing to let its exchange rate float entirely freely. It is interesting to note that traditional theory in this field (e.g., De Grauwe, 1994) does not focus at all on the above-mentioned matters, something that, wrongly, tends to tilt the scale in favor of flexible exchange rates.

Experience also indicates that economies not committing to a *credible* exchange rate are exposed to high volatility in their interest rates. In Calvo and Reinhart (2000b) it is shown that this type of volatility is far greater in emerging countries than in developed countries, arguing that an important factor behind this phenomenon is the relative lack of credibility faced by emerging economies.

VII. International Economic Policy Proposals

We are back again to the subject of credibility. In this context, a proposal has arisen for *dollarization* or *monetary union*. This implies the abandoning of a country's own currency for that of another (dollarization) or for a shared currency administered by a group of countries (monetary union) such as the euro. In Latin America the proposal for dollarization was launched in 1999 by then president Menem and generated considerable interest, both regionally and in the USA. Seminars are held on a regular basis to analyze the matter. Although this is not the appropriate moment to present a detailed analysis of this topic, there are two aspects on which I would like to offer a couple of thoughts. One relates to the widespread criticism levied against such systems on the grounds that their adoption implies losing the services of a *lender of last resort*. Another element of this proposal is that countries will lose the ability to set monetary policy, so that during a recession prices and wages will decline, which will be more costly than a devaluation.

A. Absence of a Lender of Last Resort

The role of lender of last resort is usually exercised by the central bank. Such a role consists of lending to the financial system when it is unable to obtain funds from other sources and is running the risk of a massive collapse. How does the central bank do this? One way is through borrowing, which is what the developed nations do as a general rule. Sometimes they print money initially, but they very quickly recover it through the issue of government securities. In these conditions it is not really necessary to count on the possibility of issuing money. What is important is to be able to borrow. Alternatively, a lender of last resort would be able to liquidate assets—such as international reserves— or such a role could be contracted in advance. This is the idea behind a new facility being offered by the IMF, the CCL. Another way to cover this function is that adopted by Argentina and Mexico, whereby

such a facility is contracted from private banks. None of these options require the ability to be able to issue currency.

So what happens if all this fails to work? In that case, all that remains to be done is to print money, which would not be possible if the country were to be dollarized. In such circumstances the financial system will have to bear the loss and depositors, for example, would suffer a discount. The main concern here is that there could be an interruption in the payments chain, leading to a collapse in production. That is the worst case scenario. How does this situation compare to one in which the central bank is able to issue its own money? As I have indicated, the cost of a bank crisis will quickly exceed 10 per cent of product. This means that in order to rescue the financial system, monetary supply (measured by the monetary base) would have to more than double in a very short time, which would generate soaring inflation and possibly hyperinflation.

The consequences of having a lender of last resort that can only print money are even worse. Let us take one step backwards and imagine what happens *before* a banking crisis develops. Individuals know that if a crisis of this kind develops, there is going to be a burst of inflation. As a result, every time an event of this nature is anticipated, interest rates will soar. However, until the crisis actually takes place, *nominally* high interest rates will be translated into high *real* interest rates. This has become known as the *peso problem*. The most worrying implication of all this is simply that the expectation that the banking system is in trouble will create the conditions that validate these expectations, another example of a self-fulfilling prophecy. The recent case of Ecuador is a clear example of this. The country switched to the dollar in February 2000, but the public had been able to perceive that banks had already been in serious difficulties more than a year before. As a result, interest rates remained high, and when dollarization took place the banking system was substantially worse off than it would have been if the dollarization had taken place sooner.

B. Abandoning an Independent Monetary Policy

Dollarization and monetary union both eliminate a country's capacity to manage its monetary policy independently. In the experience of emerging countries, however, monetary policy has been basically pro-cyclical. That is to say that it becomes tighter during recessions and loosens during periods of expansion. There are many reasons for this, one of which is the fear of a loss of credibility during recessions. This became obvious after the Brazilian crisis in 1999. Chile, for example, which had an exchange rate band with a rate that was well short of the maximum limit, instead of letting the rate depreciate, narrowed the band and raised its interest rates (Calvo and Reinhart, 2000a). In other words it is not obvious that emerging countries will lose much by surrendering their monetary policy powers.

However, there is one case where having one's own currency can be attractive, namely when the economy enters a deep recession, in particular if it results in a severe drop in prices and wages. This has a high cost, especially if prices and wages in the public sector are inflexible in the face of any downward pressure. In these circumstances, private sector price and wage deflation implies lower tax revenues, and as fiscal spending is inflexible, the fiscal deficit increases. The deficit becomes greater than it would otherwise have been (that is to say with flexible public sector wages), as under these conditions public sector wages would be rising *in real terms*. In addition, if this takes place in the midst of sudden stop, the government will find itself forced to raise taxes, thus further depressing the private sector. This is undoubtedly a serious problem, but fortunately the solution is close at hand. For example, public sector wages could be linked to those in the private sector, which would have the advantage of de-politicizing the matter and generating the desired flexibility.

Another related difficulty is what Irving Fisher has called *Debt Deflation* (Fisher, 1933). Let's assume that prices and wages are flexible downwards and that all the difficulties we have just mentioned do not exist. Then let us

consider the most common case, where loans are granted at a fixed nominal interest rate. In these circumstances, deflation implies *higher real interest rates*, contributing to a further aggravation of the recession. Irving Fisher argued in 1933 that this effect could help to explain the Great Depressions such as that experienced in the 1930s.

The resolution of this problem requires the development of more sophisticated financial instruments that, for example, establish the cost of the debt service as a function of the relative prices of the sector taking it. Banks as a general rule do not provide these services. In some sectors it is possible to ensure the price of products through the use of futures markets. However, this applies mainly to commodities and it is difficult to agree contracts for periods in excess of one year. The only realistic alternative is for companies to reach agreements with multinationals that share in the risk. It should be mentioned that this is happening with increasing frequency since the Russian crisis (which cooled the bond markets for emerging countries). Today in Latin America most capital flows fall into the category of Foreign Direct Investment (FDI). It is interesting to note that this is happening regardless of the exchange system adopted.

Is Fisher's Debt-Deflation a strong argument against dollarization or monetary union? As always in economics, to answer this question one must study alternatives. If companies are borrowing in foreign currency, the exchange regime makes no difference. The difference exists in so far as loans are denominated in local currency (lets say, pesos). There can be no doubt that as a general rule it is going to be possible to lend and borrow in pesos, but at what rates? If the lender knows that the government is going to use the degrees of freedom provided by a flexible exchange rate to help local borrowers, the rate of interest in pesos is going to be high, so high that it could induce the borrower to take loans in dollars. I cannot elaborate further here, but the fact that FDI is prevailing all over Latin America makes me think that for investors see no difference, from that point of view, between Argentina, which has adopted a strong commitment to a one-to-one rate with the dollar, and Mexico, which has let its currency float.

VIII. Alternative Monetary Rules

To conclude, I would like to refer briefly to the current situation and future prospects. In Latin America, the big news is that countries have dropped fixed rate exchange systems in favor of more fluctuating systems. Countries such as Chile, Brazil and Mexico have announced adoption of an Inflation Targeting system. Nevertheless, in practice their exchange rates have remained fairly stable. This applies especially to Brazil, which after its major devaluation in early 1999 has maintained the *real* within a very narrow band against the dollar. Asian countries have also announced an increased floating of their currencies, but once again recent experience shows them accumulating large amounts of international reserves and interfering with the volatility of their exchange rates (McKinnon, 2000). This suggests that fear of floating has not yet disappeared and we could be converging on systems that will turn out not to be very different from those that existed prior to the Tequila crisis. However, the fact that countries do not make a firm commitment to exchange rate stability may imply that devaluations will be less traumatic.

Given its popularity, Inflation Targeting (IT) requires brief comment. Is IT very different from a fixed or predetermined exchange rate? The answer is no. With a fixed exchange rate the target is the exchange rate. Under IT, on the other hand, the target is a certain price level. That is to say, the “rate of exchange” of a basket of goods. If the foreign currency were the only component of this basket, the two systems would be identical. In practice, of course, they are not, and for this reason the exchange rate fluctuates under IT. But this system is very different from text-book free floating. Under the latter, the monetary anchor is the *quantity* of money. The rate of exchange is set wherever it pleases and the authorities do not worry about its inflationary implications. As a result, in so far as we move towards IT, it is somewhat misleading to say that we are heading towards increased floatation. In my opinion, the best way to define this is that we have changed the exchange rate that we want to fix. Seen in this light, it can be immediately understood why

it is possible under IT for the currency to suffer sharp variations in its real rate of exchange (as has happened in Mexico and is beginning to happen in Brazil) or that there should be credibility problems. These are the same problems that are suffered by fixed exchange rates.

One advantage of IT –which has been underlined in relation to developed countries, see Bernanke et al. (1999)– is that it provides absolute freedom to the monetary authority to fight against deflation in prices and wages. As I have mentioned, deflation represents a more serious problem in fixed exchange regimes, and therefore this positive aspect of IT cannot be ignored. However, IT does not necessarily resolve Fisher's problem of *Debt Deflation* when an important part of the debt is denominated in foreign currency (*Liability Dollarization*). To avoid the problem, monetary policy should ensure that there is no drop in the relative price of non-tradable goods (that is to say that there should not be any real depreciation of the currency during a recession). This is not achieved, as a general rule, by setting monetary policy to reach a predetermined rate of inflation. Experience indicates that to achieve this effect on relative prices it might be necessary to adopt an even more restrictive monetary policy, a remedy that will not find many supporters in the depths of a recession.³

Nevertheless, IT dominates fixed exchange rates if public spending is not susceptible to decline in nominal terms because of the existence of prices and wages fixed in pesos which cannot be lowered for political reasons, for example. However, as I have just indicated, this is not an intractable problem, as it can be remedied by indexing to prices and wages in the private sector.

Another phenomenon being noted since the end of the Russian crisis has been the growing importance of FDI. In Latin America, for example, most capital flows take this form. One possible interpretation of this is that countries have gained credibility and investors are prepared to take a longer-term position. An alternative view is that the Russian crisis has evidenced the

³ For a view on the relationship between monetary policy and the real rate of exchange in the context of emerging countries, see Calvo and Végh (1999).

fragility of the collateral offered by emerging countries. As a result, portfolio investments have been directed towards the developed countries, enabling the multinationals in those countries to buy up companies in emerging countries at very low prices. The purchase of YPF by Repsol is an example of this.

One interesting implication of this new structure of capital flows towards emerging countries is that in order to attract it these countries are offering very favorable conditions, based on subsidies and other concessions. Some of these incentives have the ingredients of Time Inconsistency, such as when new capital is exempted from tax. Such practices are distorting, as they could result in a subsidy war and interfere with free trade treaties such as the Mercosur.

The good news regarding FDI is that it cannot pull out of a country as quickly as short-term loans. The owner of the firm can at best sell it, but it is not so easy to "untie" it as it is to remove short-term capital. However, even this is questionable, as multinationals find it easier than local companies to gain access to local bank loans, and thus provoke a run on the peso. This is the mechanism that was observed during the process that unleashed the Brazilian crisis in January 1999.

IX. Conclusions

To sum up, the world of finance has experienced significant changes since 1989. The crises have been profound, but along the road we have learnt much about their nature. Emerging countries are far more aware of the importance of liquidity and are taking steps in this regard. In addition, G7 countries are designing new instruments such as the CCL to be able to head off crises on time. These are all promising signs, although the danger has not yet disappeared. The capital that has flown in since 1989 could well be scared away again by bad economic policies, so that establishing and maintaining credibility has become one of the basic foundations for any economy. It is not sufficient to be sound, it is also necessary to be seen as being sound.

Institutional agreements with developed nations represents one possible strategy, and it is here that dollarization and monetary union will have a role to play.

None of this is easy, but for the same reason it exerts an intellectual fascination. The science of economics plays a key role in clarifying these matters, but it is also essential that people should participate effectively. This is the only way that sound economic systems will gain strength and be credible. To do so it will be necessary to do as Domingo Faustino Sarmiento proclaimed in the 19th Century: “Educate the Sovereign”, i.e. educate the people. Good schools of economics are an indispensable vehicle for this purpose, but we must go further. This knowledge should be imparted at the earliest stages of education, not just with lists of names and remedies, but with options, educating the sovereign people to be able to make rational choices between options. This has become of considerable importance today, given the significance and subtlety of external shocks. People should have all the tools necessary to understand why rising interest rates in the U.S., or the Russian crisis, should have an effect on their daily lives. Why it is that closing the fiscal deficit through higher taxation can be a good step in the medium term, although it might take place during a recession. In the absence of such knowledge, people will eventually be the victims of lies and deceit. Democracy becomes a mirage without substance, in which a sovereign people cannot or is unable to exercise its will.

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