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**EXCHANGE RATE REGIMES AND CRISES:
ARE FIXED EXCHANGE RATES REALLY TO BLAME?**

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Abstract :

This paper aims at critically analyse the reasons generally put forward to substantiate the claim that fixed exchange rates are more vulnerable to crises than other exchange rate regimes. First, we analyse the main vulnerabilities of fixed exchange rate systems, that are often pinpointed in the economic literature : i) the interventions needed to stabilise exchange rates may cause the depletion of forex reserves, which triggers speculative attacks; ii) also, if the currency approaches the limits of its authorised fluctuation bands, speculators may read this as a sign of weakness; iii) fixed exchange rates might cause the currency to appreciate, making the country less competitive. These standard arguments seem relevant, although there are also weaknesses of floating exchange rate regimes in emerging countries, which are much less advertised.

Second, we examine two other common arguments: i) that fixed exchange rates may cause currency mismatch by fostering borrowing in dollars, which generates negative balance-sheets in case of devaluation; and ii) that fixed exchange rates increase the risk of a banking crisis by weakening the lender-of-last-resort function. We show that these arguments are not convincing, for currency mismatch and banking crises appear to be at least as frequent in floating exchange rates regimes.

Résumé :

Ce texte vise à analyser de manière critique les principaux arguments généralement utilisés pour démontrer que les taux de change fixes seraient plus vulnérables aux crises que les autres régimes de change. Premièrement, les principales vulnérabilités mises en avant dans la littérature économique sont analysées : i) les interventions nécessaires à stabiliser la monnaie peuvent engendrer un épuisement des réserves de change, ce qui déclenche la spéculation et sonne généralement le glas de l'ancrage ; ii) la spéculation peut aussi être déclenchée lorsque la monnaie s'approche de la marge la plus faible de sa bande de fluctuations autorisée ; iii) les parités fixes peuvent engendrer une appréciation du taux de change réel, qui dégrade la compétitivité du pays. Ces arguments traditionnels apparaissent effectivement assez incontournables, même si on peut regretter que la recherche économique ne se soit pas penchée avec la même ardeur sur les vulnérabilités engendrées dans les pays émergents par les taux de change flottants.

Deuxièmement, deux autres arguments sont examinés : i) que les taux de change fixes produisent des déséquilibres des bilans en devises (« currency-mismatch »), en favorisant l'endettement en dollars, ce qui aurait des effets négatifs en cas de dévaluation ; ii) que les changes flottants accroissent le risque de crise bancaire, notamment en empêchant la banque centrale de jouer un rôle de prêteur en dernier ressort. Ces deux arguments apparaissent peu convaincants, dans la mesure où les « currency-mismatch » et les probabilités de crises bancaires sont aussi fortes dans les régimes de changes flottants.

1. Introduction

The most devastating currency crises of the last decade occurred in contexts where fixed exchange rates, using the term in its broadest sense, were in place. This was true of the 1992-1993 crisis in the European Exchange Rate Mechanism, of Mexico in 1994-95, South-East Asia in 1997, Russia in 1998, Brazil in 1999 and Turkey in 2001. As a result, at the end of the 1990s the International Monetary Fund (IMF) recommended replacing traditional fixed arrangements, which were deemed to be too vulnerable, with “corner” solutions, i.e. floating exchange rates or “hard” pegs like currency boards. However, the collapse of Argentina’s currency board in early 2002 did much to discredit that kind of regime, forcing the IMF to adjust its stance. Now, the Fund is warning emerging economies off any type of fixed system, urging them instead to float their currencies and adopt an inflation target.

In all the examples cited above, the fact that the exchange rate was fixed (or insufficiently depreciated in the case of a crawling peg) caused the country’s real exchange rate to appreciate in the years leading up to the crisis, thereby eroding the current account balance. Investors became suspicious that the currency might be overvalued, which triggered speculative capital flight and, *in fine*, a fully-fledged crisis on the currency market.

There are various ways to explain the linkage between crises and fixed exchange rates. Some economists follow Obstfeld and Rogoff (1995) in arguing that fixed exchange rates are inherently fragile and recommend switching to a float. Certainly, there are reasons to believe that fixed exchange rates have a greater tendency to be accompanied by crises. It is surely no accident that most of the theoretical models of crises are placed in a context of fixed exchange rates, from Krugman (1979), to Flood and Garber (1984), and Eichengreen, Rose and Wyplosz (1995). In these models, the

central bank is unable to defend its fixed exchange rate either because it lacks the capacity or because the cost is prohibitive. Financial crisis models, like that of Chang and Velasco (1998), also caution against the dangers of fixed exchange rates.

In theory, as Calvo and Mishkin (2003) remind us, flexible exchange rates are better able to shield economies against real shocks, while fixed rates are more effective against nominal shocks. If there is a nominal shock to the money supply, for example, a fixed exchange rate plays a stabilising role by imposing monetary discipline, whereas floating rates tend to pass the shock along to the real economy, increasing volatility. By contrast, in the case of a real shock to productivity or the terms of trade, floating rates are more effective at bringing conditions back to an even keel. Emerging countries with open economies and mobile capital are, a priori, exposed to many external real shocks, affecting such areas as commodity prices or world interest rates. Floating rates may help them adjust to these events. In a recent paper, Edwards and Levy-Yeyati (2003) find that floating exchange rates are effective in limiting shocks to the terms of trade. However, this is an isolated result contradicted by a body of evidence demonstrating that floating exchange rates have failed to play their intended roles as stabilisers.

There is a wealth of empirical research to show that floating exchange rates not only fail to cushion emerging economies from shocks but even tend to amplify them (see Hausmann et alii, 1999, Dornbusch, 2001, Calvo and Reinhart, 2000, 2002). This paradox can be traced back to several characteristics of these economies, and notably to the “original sin” concept. Coined by Eichengreen and Hausmann (1999), this term refers to the inability of emerging countries to borrow in their own currency, no matter how strict their economic policy. Another problem is the “debt intolerance” of international investors (Reinhart, Rogoff and Savastano, 2003), who are suspicious of debt levels in emerging economies that would be acceptable in advanced countries. Other factors preventing floating exchange rates from functioning effectively in emerging countries include the monetary authorities’ lack of credibility, and the rapid transmission from exchange rates to prices, which tends to cancel out the real effects of depreciations.

So, despite what the theory says, floating exchange rates do not protect economies from external shocks, and especially from changes in US interest rates, as shown by

Frankel, Schmukler and Serven (2002). In fact, in Latin America, a hike in US interest rates appears to have a greater impact in countries with floating exchange rates than in countries with fixed exchange rates (Hausmann and alii, 1999). In reality, for all these reasons, very few emerging countries actually allow their currency to float, a fact revealed by Calvo and Reinhart (2002). As a result, if almost all emerging countries are operating de facto fixed exchange rates, it should come as no surprise if the countries with fixed rates are also the ones experiencing crises. The situation may merely reflect a sample bias. There is no guarantee that there would be fewer crises if countries allowed their currencies to float freely.

The arguments concerning banking crises are even less clear-cut. While banking crises may be partly caused by “twin crises” associated with a sudden devaluation of the currency, which is more likely to take place under a fixed exchange rate regime, they may also result in part from the banking system’s internal fragility. In such cases, fixed rates might be better suited to provide macroeconomic stability and could prove less dangerous for the country.

This paper sets out to critically analyse the reasons generally put forward to substantiate the claim that fixed exchange rates are more vulnerable to crises. Section 2 gives the definitions for fixed and floating exchange rate regimes according to the current classification systems and summarises the economic performances of the different regimes. Section 3 analyses the ways in which fixed exchange rate systems are vulnerable: i) the interventions needed to stabilise exchange rates may deplete the international reserves and provoke a crisis; ii) if the currency approaches the limits of its authorised fluctuation bands, speculators might read this as a sign of weakness; iii) fixed exchange rates might cause the currency to appreciate, making the country less competitive. Section 4 examines two other common arguments: that fixed exchange rates may cause agents to underestimate currency risk and hence take on foreign-currency debt; and that fixed exchange rates increase the risk of a banking crisis by weakening the lender-of-last-resort function.

2. Exchange rate regimes and fear of floating

One of the first questions that we must ask ourselves is what exactly is meant by a fixed (or pegged) exchange rate. In the strictest sense, this is a system where the

exchange rate is maintained within fluctuation bands around a pre-announced central parity. However, when discussing the risks of crisis, it is more pertinent to use a broader definition that encompasses two other categories. First, there are “crawling pegs”, in which the exchange rate is pegged to a reference rate that is devalued regularly according to a pre-announced schedule. Mexico and Turkey had crawling pegs in place in the years leading up to their crises in 1994 and 2000 respectively. Second, there are de facto fixed exchange rates that are reported as floating rates. Brought to light by Calvo and Reinhart (2000 and 2002), this category is widespread among the emerging economies. Most of the Asian countries, including Thailand, South Korea, Indonesia and the Philippines, were using systems like this prior to the 1997 meltdown, as shown by Bénassy-Quéré and Coeuré (2002) and Coudert and Dubert (2003), among others.

2.1. Defining exchange rate regimes

Given the existence of “disguised” fixed exchange rate regimes, the category itself becomes somewhat blurred. As a result, before assessing the impact of different exchange rate arrangements, one of the first tasks must be to identify what kind of system is being used. Several methods exist for ascertaining the de facto regime adopted by a country, as compared with the de jure regime reported to the IMF by member states. These techniques are based on an examination of the policies implemented and their results. Until 1999, countries completed a form in which they told the IMF what kind of regime they were using. The Fund then used these reports to publish a de jure classification. However, the many divergences between the de jure classification and actual exchange rate movements prompted the IMF to revise its method. Now, the Fund adjusts country reports to take into account statistical information on currency-market movements.

Calvo and Reinhart (2002), in particular, show how many countries that reported floating their currency in fact intervened regularly on the market to contain the parity. The authors see this as evidence of a widespread “fear of floating” among emerging economies, which can be ascribed to the inability of floating exchange rate regimes to guarantee independent monetary policies and to stabilise economic shocks. Calvo and Reinhart (2002) combine several criteria in order to identify de facto exchange rate arrangements, including the variance of exchange rates, interest rates and official

reserves. Floating rates feature high variance in the exchange rate and low variance in official reserves. Fixed exchange rates naturally display low variance in the exchange rate, but high variance in reserves or interest rates, depending on whether the monetary authorities are defending the peg by buying and selling currencies or by manipulating interest rates.

The Levy-Yeyati and Sturzenegger (2000, 2003) or “LYS” classification is similarly based on an exhaustive statistical analysis of the systems used worldwide. It often appears in papers on the effects of exchange rate regimes because Levy-Yeyati and Sturzenegger have posted their classification on the internet. Their approach is based on three variables: the average of the absolute monthly percentage changes in the exchange rate, the standard deviation of the monthly percentage changes in the exchange rate and the average of the monthly percentage changes in official reserves.

Other studies have sought to ameliorate the criteria used in classification. Bénassy and Coeuré (2002) propose a method aimed at estimating anchor determination more accurately. In particular, they seek to take better account of de facto pegs to currency baskets, an area often overlooked in earlier classifications. With their new “Natural” classification, Reinhart and Rogoff (2002) improve on existing methods in two ways: first, they use exchange rates on parallel markets for countries where a dual currency market is in effect; second, they employ a monthly classification, which solves problems related to regime modifications during the year. Reinhart and Rogoff also introduce a new category of “freely falling” currencies, which are seen in countries with high inflation (over 40% a year). Previously, these currencies were wrongly grouped with floating exchange rates, which helped to overestimate the inflationary bias of floating rates.

The de facto classifications reveal that many countries say they have adopted floats but in fact employ fixed or intermediate exchange rate policies, thus betraying their “fear of floating” according to Calvo and Reinhart’s analysis (2002). For example, in Reinhart and Rogoff’s Natural classification (2002), just 20% of the countries reporting a pure float actually used such a system.

2.2. A comparison of macroeconomic performance

Weak macroeconomic fundamentals constitute a basic factor of vulnerability to crises: low growth, by fuelling unemployment, impairs the country's ability to respond to speculative attack; interest rates can hardly be raised to repel speculation; high inflation thus sets up the conditions for devaluation, in the case of a pegged system. Banking crises are also more likely in an unstable macroeconomic environment. So the first question we must ask is whether different systems yield different macroeconomic results.

Studies on this issue (Gosh et alii, 1997, Levy-Yeyati and Sturzenegger, 2001, Rogoff et alii, 2003) obtain broadly similar findings. These are gathered together by Rogoff et alii (2003), who use the three main classifications: IMF de jure, LYS and Reinhart and Rogoff (2003). They come to two main conclusions. First, the different systems show little difference in terms of GDP growth. Second, fixed exchange rates are associated with significantly lower inflation than other regimes. This last result was obtained from a large sample of countries and has been verified for developing and emerging countries, but is not significant among advanced countries. The decline in inflation in developing countries with pegged rates can be mainly attributed to the enhanced credibility resulting from the announcement of the peg, and not to better "discipline", which is defined as slower growth in the money supply. Thus, having a de facto fixed exchange rate in place, with no advance announcement, does not have a significant effect on inflation.

3. In what ways are fixed exchange rates more vulnerable?

There are several channels of transmission through which fixed exchange rates may trigger a currency crisis.

3.1. Depletion of official reserves

The depletion of official reserves is a decisive factor in the onset of a crisis. To defend the exchange rate against downside pressures on the domestic currency, the central bank buys its currency on the forex market, while selling its foreign currency reserves. But central bank reserves are small compared with the size of the currency

market, if capital flows are unrestricted. After a few days or even weeks of speculative attack, the central bank will usually have used up its foreign currency reserves. The strategy has reached its limit, and the rapid loss of official reserves typically indicates that devaluation is imminent.

This fundamental causal relationship, in which crises are linked to fixed exchange rates via the depletion of official reserves, lies at the heart of the so-called first-generation models (Krugman, 1979), and second-generation models (Eichengreen, Rose and Wyplosz, 1995). It is confirmed by most of the empirical research on crises, including by Kaminsky, Lizondo and Reinhart (1998), and Burkart and Coudert (2000). Crises are frequently preceded by a decline in the official reserves. On average, reserves ratios, such as reserves as a percentage of the money supply and as a percentage of total debt, decrease several quarters before crises.

Of course, a country with fixed exchange rates also has the option of raising interest rates to defend its currency. But this strategy too has its limits, because rate hikes cannot be kept up for long enough without choking the economy. A country with floating exchange rates by definition does not intervene on the market to maintain its exchange rate and is naturally not faced with these problems.

3.2. Speculation as the exchange rate approaches the limits of its fluctuation bands

In pegged regimes suffering from a lack of credibility, if the exchange rate nears the upper ceiling of its fluctuation band, speculation may be triggered by the prospect of imminent devaluation. Indeed, if the exchange rate is being managed on a day-to-day basis within an announced range, the market tends to see rather too clearly when difficulties are encountered. When the rate of greatest depreciation is reached, at the upper limit of the fluctuation range, the authorities have a duty to intervene to stabilise the exchange rate. Two things may happen at this juncture. If the central parity is a credible one, there is no speculation about devaluation and the central bank's interventions rein the exchange rate back within the fluctuation bands by causing the currency to appreciate. If the regime lacks credibility, however, speculators believe devaluation is on the way and sell the currency, forcing the authorities to take the exchange rate out of its authorised range.

For this reason, a looser system of exchange rate management is reckoned to offer better protection against speculation. Williamson (2000) recommends using a system of crawling fluctuation bands with soft margins linked to a basket of currencies. This system is similar to a crawling peg, except that the exchange rate is intended to remain inside the bands only on a moving average over a given period and not all the time, as with crawling pegs or traditional arrangements. Instead of central banks having to mount a daily defence of a fixed exchange rate, it would doubtless be preferable if they had the option of allowing the exchange rate to come out of the fluctuation bands at times when market pressures are high. Thus they could avoid the pointless waste of reserves and the abrupt collapse of the peg brought on by devaluation, while retaining the option of returning to more desirable parities when the market is more clement. In general, managed floats enjoy similar flexibility in terms of intervention. They also have the added advantage that the monetary authorities do not state the reference rate they are going to defend or stipulate fluctuation bands, and so can choose to intervene at the most useful times.

3.3. The risks of an overvalued real exchange rate

The possibility that the real exchange rate could become overvalued is another source of vulnerability for fixed exchange rates, which generally cause the real exchange rate to appreciate. By definition, this happens when inflation is higher than in the country issuing the anchor currency. Such situations occur regularly, because fixed exchange rates are often introduced as a means of combating high inflation. But because inflation falls gradually after the peg has been created, the currency appreciates in real terms. The ensuing loss of competitiveness may create a current account deficit, thereby leading to financing difficulties or a speculative attack. Rogoff (1995) sees fixed exchange rates as inherently fragile and necessarily finite, with a lifespan of around four or five years². Once this fixed period is over, the country often has to devalue suddenly, triggering a crisis. Goldfajn and Valdés (1996) also show that real exchange rates appreciate more frequently under fixed exchange rate regimes.

² Rogoff and Reinhart (2002) estimate a much longer lifespan for fixed exchange rates – 12 years – but that is because they consider that exchange rates remain fixed if, after the peg has broken down, a fixed rate system is reinstated.

A host of empirical studies have emphasised the role of overvaluation in the onset of crises. Sachs, Tornell and Velasco (1996) highlight the link between the overvaluation of the Mexican peso and the 1994-95 crisis. Research on the leading indicators of crises also shows that the real exchange rate tends to appreciate before a crisis (Kaminsky, Lizondo and Reinhart, 1998; Cartapanis et alii, 1998;). This situation is illustrated in Burkart and Coudert (2000) for example, which tracks the growing overvaluation during the year preceding the crises, followed by a sharp depreciation when the crisis actually hits. As in most of the papers on this question, overvaluation in terms of purchasing power parity (PPP), by estimating the appreciation of the real exchange rate over its long-term average. In the strictest analysis, overvaluation ought to be estimated not against PPP but in comparison with an equilibrium exchange rate that reflects the economic fundamentals. This is the approach taken in Coudert (1999), where the findings again point to overvaluation in the periods preceding the crises in Mexico in 1994 and in South-East Asia in 1997.

Bouts of real exchange rate appreciation do not occur only under hard pegs, like Argentina's currency board, or soft pegs, like the de facto anchors of the Asian countries. They also affect the intermediate regimes, particularly crawling pegs, as evidenced by Turkey's experiences in 2001. Although Turkey introduced a crawling peg in early 2000, the country's expansionary fiscal policy prevented the regime from sufficiently curbing inflation. As a result, the real exchange rate appreciated strongly – by 16% in 2000 in terms of the effective exchange rate – and this, combined with expansive demand, caused the trade deficit to balloon to 12% of GNP. This sudden deterioration in foreign trade was one of the factors that precipitated the crisis of February 2001.

Besides a vulnerability to crises generated by real appreciation, Gosh et alii (1997) identify a possible link between exchange rate regimes and the long-term behaviour of the real exchange rate. In the long run, the currencies of all emerging and developing economies have tended to depreciate in real terms. But this trend is far more pronounced in countries with floating exchange rates. Fixed exchange rates prevent countries from raising their competitiveness through nominal depreciations, other than when the peg collapses. Even if in theory the nominal variables are neutral in the long run, empirically we see different behaviour patterns in the real exchange rate: countries with fixed exchange rates depreciate less in real terms than others.

4. Foreign-currency debt and vulnerability to banking crises

There appears to be less evidence to support two other common arguments, namely that fixed exchange rates encourage a build-up of unhedged foreign-currency debt, and that they make banking systems more vulnerable to crises.

4.1 Unhedged foreign-currency debt

Another alleged effect of fixed exchange rates is that they encourage agents to borrow in foreign currencies (Obstfeld, 1998). If the monetary authorities insist credibly that they are committed to maintaining the peg, agents may take them at their word and unwittingly incur excessive currency risk, notably by taking out foreign-currency loans without setting up a hedge. Agents in countries where rates float shy away from such imprudent behaviour because of the continual volatility of their currency.

If fixed exchange rates tend to act as an incentive for agents to take on debt in foreign currencies, it is because such arrangements often come with implicit government guarantees. This point is raised by Burnside et alii (2001). If the governments of emerging countries guarantee investors that they will be reimbursed in the event of devaluation or default, the banks no longer have any incentive to hedge their currency risk, i.e. by purchasing currency forwards to offset their debt. Either the currency is not devalued, and the hedge is costly and makes no gain, or the currency is devalued and the bank loses the profit from its forward contract, which goes to repay the creditor, when it could have waited to be bailed out by the government. Under such circumstances, the optimal strategy for banks is to take open positions that maximise the gains in the event of non-devaluation and minimise the assets that generate profits during devaluations. These implicit guarantees and excessive foreign-currency liabilities were implicated in the 1997 Asian meltdown (Cartapanis, 2002).

In the short term, it is true that foreign-currency borrowings tend to strengthen the local currency because the foreign currencies borrowed by residents is usually converted on the forex market, thereby fuelling demand for the domestic currency. In the medium term, though, these capital inflows may cause an artificial appreciation of the exchange rate, which is worked out through a sharp devaluation. However, the single most important factor is that foreign-currency borrowings considerably raise

the cost of crises because the amounts required to repay loans go up if the currency is devalued (Bordo et alii, 2001).

In the strictest analysis, we should be considering not unhedged foreign currency debt, but the currency mismatch on balance sheets, i.e. in the proportion of assets and liabilities denominated in foreign currencies and the domestic currency. Many economists believe that these mismatches are exacerbated by fixed exchange rates, which encourage a build-up of unhedged foreign-currency debt. Another way to understand the source of this mismatch is to return to the “original sin” hypothesis, whereby emerging economies are prevented from borrowing in their own currencies. Eichengreen, Hausmann and Panizza (2003), for instance, measure the correlation between an “original sin” indicator³ and different exchange rate regimes. Their findings show that the more a country suffers from “original sin”, the more likely it is to adopt a fixed exchange rate.

However merely ensuring that the currencies match up on the balance sheet is not enough to eliminate the risk for banks. Even if banks’ assets and liabilities are balanced in terms of currencies, their foreign-currency liabilities, which have to be repaid, will increase in the event of devaluation. Further, a large proportion of their foreign-currency assets, in the shape of unhedged loans to domestic businesses, will have to be written off as bad debts. A surge in bad debts can trigger a chain-reaction of failures, as in the 1997-98 Asian crisis. In addition, these two risks – the default risk and the currency risk – tend to move in opposite directions. If the banks do not have a currency mismatch on their balance sheets, they lower their exposure to currency risk but increase their default risk. If their assets are denominated in the national currency and liabilities in foreign currencies, the risk of default goes down but the currency risk increases.

Another factor that makes the debate more complex than it first appears – and that rules out any hasty conclusions – is that fixed exchange rates are not the only ones that can generate currency mismatches. Floats also have a tendency to produce them, but with the opposite effect. Under flexible exchange rates, agents tend to protect themselves against the depreciation and volatility of their domestic currency by

³ “Original sin” index of country $i = \text{Max} [1 - (\text{securities in currency } i / \text{securities issued by country } i), 0]$.

making deposits in dollars, while taking on foreign-currency debt is discouraged. This then leads to a mismatch on bank balance sheets. Arteta (2003) shows this in his empirical study of a large sample of emerging countries: under floating rates, deposits and loans in dollars are significantly mismatched, with deposits being higher than loans. This situation does not occur under fixed exchange rates.

4.2 Banking crises and the lender of last resort

One strand of the economic literature has concentrated on proving the vulnerability of fixed exchange rates to banking crises. The crux of the argument is centred on the excessive capital inflows that such regimes may engender. If exchange rates are flexible, investors are better able to measure their risk and avoid overinvesting.

Another common argument concerns the absence of a lender of last resort. Under fixed arrangements, central banks are constrained in their money creation by the need to maintain the exchange rate. This prevents them from supplying the liquidity needed by banks during crises and hence from combating systemic risk. The problem is particularly acute in the case of currency boards, where it is utterly impossible to create money. This factor came to light with the banking crises in Argentina in 1995. The absence of a lender of last resort may also create problems of self-fulfilling expectations of the type referred to by Diamond and Dybvig (1983), which set off a run on deposits. However, this argument can also be turned around, i.e. the fact that the lender-of-last-resort function is constrained by the fixed exchange rate may have a beneficial effect by limiting moral hazard and strengthening prudential oversight. By contrast, in floating exchange rate regimes, the presence of a lender of last resort creates a moral hazard that may give banks an incentive to take on excessive risks, counting on the government to bail them out in the event of a crisis. Indeed, risk-taking as part of the quest for high returns is a key factor in triggering banking crises, as shown by the empirical work done by Miotti and Plihon (2001).

Chang and Velasco (1998) develop a variation on this type of argument by introducing the notion of currency risk. They suggest that in countries with fixed exchange rates, a run on the banks is more likely because of the effects of self-fulfilling expectations. If agents doubt the ability of banks to reimburse their deposits, they will always tend to want to withdraw their money. Under fixed exchange rates,

the first agents to withdraw their deposits (in the domestic currency) can convert them into foreign exchange at the rate maintained by the central bank, while the last to arrive are exposed to devaluation. In such circumstances, it is better not to wait but to be first in line. This situation causes expectations to become self-fulfilling. Floating rates introduce an uncertainty that prevents this kind of thinking. The first people to withdraw their deposits are exposed to depreciation, while more patient agents may not suffer any loss if they wait until the currency has risen in value again.

However, there are also those who support the opposite view, including Eichengreen and Rose (1998). In their opinion, fixed exchange rates are less likely to produce banking crises because the economic policy in such countries is more rigorous and stabilising than in countries with flexible rates. The danger of devaluation promotes “discipline”, by “tying the hands” of the monetary authorities, to borrow Giavazzi and Pagano’s (1988) famous phrase. The resulting macroeconomic stability, they argue, is favourable to a stable banking sector. Notably, it reduces the chronic increase in credit and monetary creation that often triggers subsequent crises.

The empirical work of Eichengreen and Rose (1998) demonstrates that there is no significant link between the onset of a banking crisis and fixed exchange rate regimes. On the contrary, the probability of a crisis occurring is lower on average under fixed regimes than under intermediate or floating arrangements. This finding is borne out by the study by Domaç and Soledad Martinez Peria (2003), which tests whether the probability of a banking crisis is affected by the exchange rate regime, using the de facto classification developed by Levy-Yeyati and Sturzenegger (2000). It is only when a fixed exchange rate regime is combined with the presence of unhedged foreign-currency liabilities that a higher likelihood of crisis is obtained. Otherwise, fixed exchange rates tend to reduce the probability of a crisis occurring. In other words, fixed exchange rate regimes do not seem a priori to be any more vulnerable than other systems. They become so only if large amounts of unhedged debt are present. However, the uncertainty surrounding this last finding should be pointed out: in the study, the variable standing for the mismatch on bank balance sheets is merely a proxy for the real situation, because it measures only assets and liabilities relative to non-residents, without taking into account the fact that assets and liabilities may be denominated in foreign currencies, and does not include residents’ deposits and loans in foreign currencies. Regressions on the cost and duration of crises reveal that

exchange rate regimes have an insignificant effect. In all, the only robust result appears to be the lower probability of crisis in countries with fixed exchange rates, when control variables are introduced.

5. Conclusion

Theoretical and empirical work in the recent economic literature suggests that fixed exchange rate regimes may be more vulnerable to speculative attack than other systems. In the light of these considerations, the IMF recently advised abandoning such regimes in favour of flexible arrangements. However, it must be said that the vulnerability of floating rates to crisis has been the subject of less study up to now. This may reflect a sample bias, since most emerging and developing countries tend to manage their exchange rates.

Having reviewed the various arguments and held them up against existing research, we find that the suspicions about fixed exchange rates are not sufficiently supported. True, the three well-known arguments are hard to contest: first, that defending the exchange rate is limited by the size of central bank reserves, and when these run out, speculation tends to follow; second, that if regimes operating fluctuation bands have a credibility problem and the exchange rate approaches the upper ceiling, a self-fulfilling speculative attack may again be unleashed; third, that fixed exchange rates often tend to cause the real exchange rate to appreciate, with this movement being reabsorbed violently through nominal devaluations. However, two other common arguments do not seem to stand up to the empirical evidence. Fixed exchange rates may indeed encourage the build-up of unhedged foreign-currency debt and currency mismatches on bank balance sheets. But floating exchange rates tend to have the opposite effect, by leading to an excess of foreign-currency deposits over loans, which is equally dangerous to banks in the event of a sudden depreciation. Further, although the function of lender of last resort is constrained in fixed regimes, the likelihood of a banking crisis tends to fall as a result of enhanced macroeconomic stability.

Crises in emerging countries are often linked to a sudden turnaround in capital flows. A loss of investor confidence, either for objective reasons linked to the fundamentals or because of contagion, prompts a withdrawal, asset prices fall and the exchange rate

depreciates. Empirical studies show that such reversals occur as often under fixed exchange rates as under floating arrangements. Similarly, the intolerance to emerging market debt displayed by international investors as well as the “original sin” of these countries, which are unable to borrow abroad in their own currency, are factors of fragility that persist regardless of the exchange rate regime in place.

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