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Credibility or "Exit Speed"? Reflections Prompted by the 1992 EMS Crisis

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Abstract

A common interpretation of the vicissitudes of the EMS holds that the credibility of EMS parities remained very high at least up to the Danish referendum of June 1992. In contrast, we argue that capital inflows into higher-inflation countries and falling interest differentials can coexist with the expectation of a realignment, provided international investors are confident in their "exit speed", i.e. in their ability to close or hedge open positions in good time. The uncovered interest parity is inapplicable, we maintain, to all cases in which the monetary authorities' expected behaviour is such as to justify the aforesaid confidence.

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Commenting on the answers of a group of foreign exchange traders to a questionnaire regarding the September 1992 EMS crisis, Eichengreen and Wyplosz (1993: 96-7) point out that "only 22 percent of the respondents claim to have been expecting a realignment before the Danish referendum", i.e. before the beginning of June 1992. This is interpreted by the authors as lending support to the thesis that up to the Danish referendum the existing parities were indeed credible, and as confirming their point "that the timing of the 1992 attacks does not fit easily with interpretations emphasising current fundamentals". However, when we come to read the question submitted to the traders, we discover that the wording actually ran "When did you first begin to think that changes in the ERM exchange rates were imminent?" (ibid.: 97; italics added). The information supplied by the authors is therefore imprecise and, we feel, misleading. For if until the Danish referendum only 22% of the foreign exchange traders (as represented by the respondents to the questionnaire) expected a realignment to take place at an unspecified date, this means that the overwhelming majority was satisfied that no further realignments would take place - or in other words that transition to monetary union would be made on the basis of the existing parities. If, on the other hand, 22% of the traders were already expecting an

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imminent realignment before the Danish referendum (a very high percentage for such an expectation)\(^1\), one cannot help wondering just how many others considered the existing parities untenable, although they would not hazard a guess as to the timing of realignment.

The grounds for our opinion that many were of this mind are that disequilibria were mounting at such a speed as to make it apparent that the existing parities could be maintained only if all the EMS member countries were firmly determined to defend them and to move quickly - on the basis of these parities - to monetary union. The Bank of Italy appears to have had considerable confidence in such determination, with a high-level official, and authoritative scholar of international finance, stating (in an article that had the ill fortune to come out after the September 1992 crisis): "[T]he commitment to monetary union and economic convergence among member countries is a powerful stabiliser of exchange rate expectations. Diverging from the common stance, or even modifying central rates, has a high cost in terms of credibility of member countries' policies. The commitment to defend EMS central rates is bound to represent the core of policy co-operation among European countries until the passage to full economic and monetary union" (Padoa-Schioppa 1993: 827). We shall see, however, in Section 1 that the Bundesbank never did make any mystery of its hostility towards both the exchange rate stability of what has been called the "new" EMS (Giavazzi and Spaventa 1990) and rapid transition to monetary union. This being the Bundesbank's attitude, it is hard to imagine that speculators did not take it into account in forming their expectations.

Exchange rate stability was, however, accompanied by considerable inflows of capital into higher-inflation countries such as Italy and Spain, and a fall in their interest differentials vis-à-vis Germany. This may appear to confute our opinion, and lend support to the claim that there was a "growing perception by international investors that the member countries of the EMS were on a continuous convergence path towards European Monetary Union" (IMF 1993: 8), and so to the interpretation of the capital inflows as a "convergence play", i. e. as the markets' response to the persistence of interest differentials which the increased credibility of the existing parities no longer justified. As against this reading of the matter, we shall argue (in Section 2) that, while inflation in Germany may have initially added to the credibility of the EMS parities, as time went by credibility was bound to be progressively impaired by the growing imbalances caused by misalignments coupled with rising German interest rates. We shall go on to contend (in Section 3) that capital inflows and the reduction in interest differentials did not require the existing parities to be credible. To this latter end we shall focus on the Italian case, considering

\(^1\)Eichengreen and Wyplosz (1993: 96) suspect that "some respondents exaggerated their foresight.", i. e. that "even fewer than the 22% who claimed to have anticipated a realignment before the Danish referendum really did so". In our view such a suspicion may be justified if referred to expectation of an imminent realignment (not of a realignment at an unspecified date, as the authors understand it).
the behaviour of different categories of investors separately, and two categories in particular: Italian firms running up debts in foreign currency (especially in dollars as from a certain point on) on the basis of calculations which, as we shall see, were not incompatible with expectations of a realignment of the magnitude experienced in the past; and international investors, taking advantage of the opportunities of gain offered by the lira-DM interest differential (as also by its possible fall in the very near future). Unlike the Bank of Italy, we shall submit, international investors were not confident in the sustainability of the existing parities, but rather in their own "exit speed" (as we shall call it), i.e. in their ability to close or hedge open positions promptly when the expected realignment began to appear imminent - as must have happened after the Danish referendum, judging by the massive hedging operations which were undertaken during the summer.

A crucial factor contributing to the investors' confidence in their ability to avoid losses was played by their conviction (which proved well grounded) that, should a crisis break out, the monetary authorities would intervene in the foreign exchange markets and provide the liquidity necessary to prevent market instability, thus ensuring the possibility of a timely withdrawal. Whenever the above conviction exists, we shall argue in Section 4, the argument behind the uncovered interest parity displays a specific shortcoming. For a small interest differential can indeed coexist with the expectation of a large change in the exchange rate - provided the degree of confidence in the above described behaviour of the monetary authorities is sufficiently high. It is hardly necessary to add that, if this is so, the very idea of assessing the credibility of a target zone's parities on the basis of the uncovered interest parity is devoid of any meaning.

1. The Bundesbank's position as an argument against the credibility of the EMS parities

At the time of the EMS inception (1979), the DM seemed to be ineluctably appreciating towards the dollar, while Germany's competitiveness with France, Italy and the UK was also declining. The risk looming ahead was that Germany's manufacturing industry might find itself obliged to abandon those sectors of production no longer compatible with the international value of the DM. Industrial rescaling was opposed by both the industries threatened and the trade unions. And there was, at any rate, the problem of regulating the speed of the process.

On the other hand, unilateral attempts to contrast the fall of the dollar would have meant losing control over monetary policy, as experience in 1971-73 showed all too clearly. To this it must be added that, in order to promote capital inflows, Germany had between 1974 and 1975 abolished some of the restraints on capital movements applied in previous years2, and was now more exposed to excessive inflows. Of course, the alternative of reintroducing the abolished re-

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2On the introduction and abolition of restraints on capital inflows in Germany see Giavazzi and Giovannini (1989: 166-7).
straints remained open, but it hardly seemed compatible with the role of a great financial power that Germany had taken on.

It is against this background that one must see the German strategy of linking the other European currencies to the DM by means of a mechanism similar to the old "snake" (which still survived, although reduced to a shadow of its former self by the defection first of the UK, then Italy and finally France). Combined fluctuation against the dollar - or at least the willingness of France, Italy and the UK not to take advantage of the appreciation of the DM towards the dollar to gain competitiveness over Germany - would make the weakness of the dollar more bearable for Germany.

However, the risk of losing control over monetary policy loomed up once again in the form of the commitment to keep the exchange agreement on its feet by defending the currencies under attack. The Bundesbank had in fact made no secret of its keen apprehensions over this point, and Chancellor Schmidt saw fit to keep it in the dark when the first moves were made to launch the EMS, the work being entrusted to representatives of the French and German governments.

The clash between the German government and the Bundesbank may be summed up by saying that the government attached greater importance to the interests of German industry, and thus to exchange rate stability within Europe: for the sake of these aims it was ready to pay a price in terms of imported inflation and reduced independence in monetary policy. In contrast, the Bundesbank, constitutionally entitled to have the last word on the matter, saw price stability and monetary policy independence as non-negotiable and was, for their sake, ready to forego stable exchange rates. The outcome was that the Bundesbank obtained a government guarantee that it might refrain from defending other currencies when the obligation to do so (although

\[\text{\textsuperscript{3}}\text{The lira, in particular, had undergone a drastic devaluation in January 1976. Subsequently, the Italian monetary authorities had led the lira to depreciate with respect to the DM but appreciate in terms of the dollar, with "significant advantages in terms of the rate of inflation as far as Italian oil and raw material imports were concerned", but also with "advantages in competitiveness for Italian manufacturing exports going mostly to the European Community" (Banca d'Italia 1979: 157-8).}\]

\[\text{\textsuperscript{4}}\text{See Gros and Thygesen (1992: 43), who cite the attestations of the Bundesbank President Emminger in this connection.}\]

\[\text{\textsuperscript{5}}\text{Paolo Baffi, then Governor of the Bank of Italy, recalls that while Emminger immediately agreed to the proposal of a "wide band" of fluctuation for the lira, Chancellor Schmidt "declared himself willing to pay the price of higher inflation in Germany that a narrow, Snake-sized band implied, adding that he was well aware "he was putting his head on the block"." See Baffi (1989: 37).}\]
stemming from an international agreement) was felt to clash with its primary commitment to price stability\(^6\).

Nor did the Bundesbank do anything to hide its aversion to fixed exchange rates subsequently. For example, a memorandum presented by K. Pohel in the early stages of work on the Delors Report states that "[c]orrections in exchange rates will remain a necessary safety valve for the foreseeable future also within the EMS in order to reduce any tensions that may arise without incurring excessive damage to individual economies or the Community as a whole" (Pohel 1989: 131). This position came perfectly in line with the Basle-Nyborg agreements (1987) which, while providing for greater exchange rate stability, confirmed the need to resort to realignments in case of lack of convergence\(^7\).

When, in the following years, greater convergence came about in an undesired way, i.e. through higher inflation in Germany, the remedy proposed by the German monetary authorities was once more a revaluation of the DM. For the time being the project had to be laid aside because of the opposition of the other EMS countries (particularly of France). But no commitment to move to the monetary union on the basis of the existing parities was actually undertaken. This emerged clearly from the Maastricht Treaty where it required - as one of its convergence criteria - that no devaluation should take place in the two years preceding decision on "phase three" (the final term for the latter decision being the end of 1996).

In the memorandum mentioned above, the President of the Bundesbank also showed a very wary attitude to a rapid move to monetary union. "Even the unification of the markets to form a single European market does not necessarily presuppose the existence of a monetary union or a common currency... It should be made clear that monetary integration cannot move ahead of general economic integration, since otherwise the whole process of integration would be burdened with considerable economic and social tensions." (Pohel 1989: 131). German reluctance to make rapid strides towards monetary union (or at least towards a monetary union including all the member countries of the Community) may well help account for the highly

\(^6\)The episode is recounted in Otto Emminger's memoires, extensively quoted in Eichengreen and Wyplosz (1993: 57-8).

\(^7\)This interpretation of the Basle-Nyborg agreements, reiterated unequivocally by the Bundesbank in the aftermath of the crisis (Deutsche Bundesbank 1993: 84), coincides with the interpretation T. Padoa-Schioppa gave in a conference held shortly after the agreements: "Of course, there will continue to be instances in which pressures on exchange rates are wholly justified by cost and price divergences. As in the past, a realignment paralleled by other policy measures will be the appropriate response. In contrast with Phase One, however, there will be many other instances in which tensions will be fuelled by capital mobility, with minor 'real' divergences being nothing more than a pretext. The required change in attitude consists in not considering pressures in the exchange markets as a sufficient condition for a realignment". Padoa-Schioppa (1988: 373-4).
restrictive convergence criteria set out by the Maastricht Treaty in such matters as public deficit and debt. The political purpose of these criteria, it has been suggested, was to "make it unlikely that the twelve Community members satisfy them in the near future", thus allowing Germany to claim that "although it is fully committed to European monetary union, the economic conditions for its introduction are not satisfied" (De Grauwe 1994: 162-3).

Similar considerations are prompted by the extremely strong pressure Germany brought to bear on the other EMS countries to speed up on the process of capital liberalisation (see Gros and Thygesen 1992: 311-5). The existence of comprehensive capital controls in certain countries reduced the attractiveness of their currencies for international investors, thus limiting the possibility of spreading over a number of currencies the impact of capital once again flowing massively into the DM in the new phase of dollar depreciation that had begun in 1985 (see Saracinielli 1989: 61). It is therefore hardly surprising that the Bundesbank, fearing a repetition of the experience of the seventies, should see in the liberalisation of capital flows in the other countries a way of making the need to choose between excessive appreciation of the DM and loss of control over monetary policy less compelling. But it might be thought that liberalisation offered a further attraction for the Bundesbank, namely that of exposing the economies of all the EMS countries to the judgement of the financial markets, thus making conditions more severe (as well as less negotiable between governments) for further advance in the direction of monetary union.

Returning to the goals of the German government and the Bundesbank as described earlier in this Section, we may observe that for a long period of time Germany had the best of both worlds: it managed to reverse its initial tendency to lose competitiveness (see Vona and Bini Smaghi 1988: 143-5), while retaining full autonomy in monetary policy as well as its freedom to use the exchange rate for antinflationary purposes. In the aftermath of unification, however, preoccupation with competitiveness within the EEC was weakening due to the increasingly inward- and eastward-looking attitude of German industry; and at the same time the German

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8The Bundesbank's position on the EMS comes out clearly also from the interpretation of the crisis contained in its 1993 annual report, where it is stated (a) that the reasons for the crisis are not to be sought in Denmark's failure to ratify the Treaty of Maastricht, which may at the most have functioned as a catalyst, but in the obstinate refusal to vary exchange rates in good time; (b) that the German unification and the attendant rise in interest rates also represented only an accidental cause of the crisis: Germany's lower inflation rates and relatively modest public deficits as well as her large current account surpluses, so often depreicated by her partners in the past, would in fact have meant appreciation of the mark sooner or later; (c) that, in the future, commitment to unlimited defence of the exchange rates must be revised in the light of its negative effects on the monetary policy of the country whose currency is most in demand; (d) that asymmetry in adjustment policies is to be safeguarded in order to defend the common benefit of the German "anchor"; (e) finally, that the conditions of Maastricht "must not be relaxed for any reason". See Deutsche Bundesbank (1993: 80, 81, 83, 84 and 85).
authorities were more worried than ever before about inflation. This explains their growing
dissatisfaction with the exchange rate being (for the moment) out of their hands - not to speak of
the additional prospect of surrendering control over monetary policy to a European central
bank.

The resulting situation was aptly described by L. Spaventa in an article published in 1991:
on the one hand, "the economic benefits of monetary union for Germany are hard to find" (Spaventa 1991: 22); on the other hand "[i]t is difficult to conceive that this kind of equilibrium
can persist for an indefinite period before the union becomes a concrete prospect. As it does not
rest on a recognition of a mutual interest, it may not resist under the pressure of external shocks
or the building up of unbalances caused by misalignments" (ibid.: 26). But, if an economist was
able to reach this conclusion, why should a speculator be unable to do so too? "The Bundesbank
never openly acknowledged that it was opposed to this institutional change", G. Soros (1994:
372) stated, "and it remains unclear to what extent its actions were designed to prevent it. All I
can tell you is that, as a market participant, I acted on the hypothesis that it was the
Bundesbank's underlying motivation. I cannot prove to you that my hypothesis was correct; all I
can say is that it worked".

2. Capital flows and interest differentials in the "new" EMS

The massive inflow of capital into Italy and Spain and the fall in the lira-DM and peseta-
DM interest differentials suggested as early as the beginning of 1990 the idea that, after repeated
speculative attacks had been warded off, the "governments' commitment to stick to the existing
parities [had] become credible" (Giavazzi and Spaventa 1990: Non-Technical Summary. The fall
in the interest differentials would have been even more pronounced, the authors point out, if it
had not been for the sterilisation policies of the monetary authorities, who feared the inflationary
consequences of a fall in domestic interest rates).

It must, indeed, be remembered that the reduction in the interest differentials in 1988-90
came about as a result of an increase in the German rates, reflecting changes in the German
economic situation and the worries of that country's monetary authorities. In early 1988
Germany was still being accused of "remov[ing] growth potential from the other nations"
(Amato 1989: 87). From then on it was faced with vigorous expansion in home demand coupled
with a rise in the rate of inflation, both being given a boost by the subsequent unification. While
this drove the Bundesbank to raise the interest rates, thus paving the way to the future crisis, an
immediate result was to make stable exchange rates more bearable for the higher inflation

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9A particularly ruthless reaffirmation of Germany's monetary policy independence is to be seen in the decision to
raise the bank rate in July 1992, i.e. between the Danish referendum and the French one, when crisis had already
broken out in the Italian bond market.
countries (not to speak of France, whose rate of inflation was about to fall below Germany's) and to shorten the distance they had to cover to reach monetary convergence with Germany.

In actual fact the credibility of a policy of stable exchange rates depends as much on the vicissitudes of the country serving as "anchor" as on those of the countries anchoring to it. If we bear this point in mind, it will not appear surprising that the Italian and Spanish interest rates did not increase in line with the German rates\(^{10}\) (or even fell, as did also the British rates after the UK entered the ERM in October 1990). Nor will it appear surprising that, according to a survey carried out among foreign exchange traders, the parities of the French and Belgian franc appeared fully credible only as from April 1990 or in other words - as the authors point out - from the announcement of one-to-one conversion of eastern into western marks (see Cavaglia et al. 1994: 350 and 358).

As time passed, however, the disequilibria caused by fixed exchange rates and rising German interest rates were bound to become increasingly apparent. To illustrate this let us look briefly at one of the weak links in the chain, namely Italy. Besides steadily compressing the quota of industrial profits, the real appreciation of the lira (slower than in the past relative to the DM, but faster relative to the French franc) severely limited any positive effects on Italy's trade deficit of German expansion and the recession Italy had entered as from 1989. Partly as a result of this, but increasingly as a consequence of the high interest rates paid on the foreign debt, the current account deficit soared; the resulting rise in foreign debt in turn speeded up growth in interest payments, thus feeding a vicious circle of cumulative growth in current account deficit and foreign debt. Another consequence of the high interest rates was the exponential growth in the national budget deficit and public debt, which - besides making it practically impossible to respect the Maastricht criteria - was susceptible of giving rise to expectations of a financial crisis.

Let us return now to the credibility issue. In the case of a higher inflation country, the credibility of commitment to fixed exchange rates implies that inflation will in future fall below the level prevailing abroad, thus producing the real exchange rate depreciation required to restore the external balance. The financing of the deficits during the transition period - which might be quite long - is affected by the (shorter run) expectations prevailing in the financial markets. If the monetary authorities' determination to defend the exchange rate leads to a progressive weakening of expectations of devaluation, decreasing interest differentials will prove sufficient to finance the deficits. However, applying this line of reasoning to the case in point is tantamount to assuming that investors took little heed of the rapid deterioration of the

\(^{10}\)In the first seven months of 1990 the DM slipped gradually into the lower part of the band, and the same happened in early 1991. With reference to the latter period the Bank of Italy (1991: 33) observes that "[t]he phase of relative weakness of the mark allowed the other countries to reduce once more the rates of interest".
situation in Italy (and in the higher inflation countries in general), as also of the attitude of the Bundesbank (see Section 1 above) - i.e. the institution that would bear the major brunt in defence of the lira in the case of a speculative attack.

A contrasting line of reasoning has it that the continued growth of the current account deficit and the foreign debt, consequent upon high interest rates, increasingly detracted from the credibility of the policy of exchange rate stability (see Pivetti 1992: 155). Apart from fitting in better with the assumption that economic operators use all the information available, this interpretation has the further advantage of accounting for the persistence of a fairly substantial lira-DM interest differential (see Figure 1), but fails to explain why capital kept flowing in and the lira-DM interest differential did not rise again as the credibility of the existing parities of the lira faded away. It is this shortcoming we intend to remedy in the following Section by considering the features of the various categories of capital inflows (and outflows).

Before tackling this, however, it is worth noting that since the EMS crisis (and as a consequence, it may be added, of mounting unemployment), it has become more fashionable than it used to be in the "new" EMS period both to pay attention to the employment (and growth) costs of disinflation and to attach considerable weight to them in the policy makers' preferences. Thus, it has been maintained that in some countries the credibility of a policy of stable exchange rates may have progressively faded away because investors anticipated that growing unemployment would eventually lead even a very "tough" government to ease monetary policy and abandon the peg with the DM. This may well help account for the crisis of the pound (see for instance Masson 1995) as well as for the speculative attacks on the French franc (see for instance Artus 1994), while in the case of the lira rising current account deficits and foreign debt (supplemented with rising budget deficits and public debt) appear to have been quite sufficient to make the existing parity unsustainable, so that no further explanation is required. (To this it may be added that the "toughness" of the Bank of Italy was at the time beyond question, and that in Italy unemployment has never been a major political issue, due to the existence of a panoply of transfer payments devised to take care of the problem as well as to reinforce the role and power of the political parties in control of the flows of public expenditure.)

3. Different categories of investors

When, as from October 1988, the Italian non-banking operators were allowed to obtain foreign currency loans for purposes other than the financing of foreign trade, and the banks were allowed to run limited open foreign exchange positions, restrictive monetary policy led to increased recourse to the international markets. In the following phase of recession it was to be the fierce competition among the banks that drove them to the aggressive use of currency loans, which were much cheaper than the loans in lire.
The reason why Italian firms (and even families) were willing to run up debts in foreign currency is not necessarily that no further realignment was expected to take place. It might well be that the experience of devaluations of the lira contained within the (wide) band of fluctuation created the expectation that, should a new devaluation occur, it would imply limited losses - to be set against lower interest payments for a (hopefully) considerable period of time\textsuperscript{11}. Moreover, as the German interest rates went up the American rates came down. As a result of the growing lira-dollar interest differential it became increasingly advantageous for Italian residents to borrow in dollars. Figure 2 shows how this was reflected in the growth from 1989 to 1992 of the quota of Italian residents' debt in dollars out of their total debt in foreign currency.

Even on the very eve of the crisis, while foreign investors were hurrying to close their lira positions, short term foreign currency borrowing by Italian residents continued to grow, thus limiting deterioration in the capital account of the balance of payments\textsuperscript{12}. The exchange rate risk was also growing for the banks, for that part of their foreign currency liabilities incurred in order to meet the domestic demand for credit in lire (see Fazio 1993: 97\*). However, in the scramble for coverage that broke out in the first two weeks of September the banks succeeded in reducing their net financial exposure in foreign currency. It was not so for their clients\textsuperscript{13}, whose foreign currency debt remained practically unchanged, exposing them to heavy losses\textsuperscript{14}.

While the foreign currency debt of the banks and their clients went on rising fairly sharply as from 1988, the portfolio investments of non-residents - particularly high between 1989 and 1991 - were accompanied by increasing outflows of Italian capital (Figure 3). There are two possible explanations for this, which are not mutually exclusive. The first has it that

\textsuperscript{11}The devaluation of the lira agreed upon in September 1992 was in fact 7%, i.e. more or less corresponding to the lira-dollar interest differential.

\textsuperscript{12}As we read in the Bank of Italy Economic Bulletin (Banca d'Italia 1993: 12\*), Italian firms "went on raising funds in other currencies through resident banks, often without hedging against exchange rate risks, even in the period of June-August 1992".

\textsuperscript{13}Small and medium-size firms usually depend on their banks for advice on financial decisions. The time required for perception of the exchange rate risk to filter from the exchange broker in the banks' headquarters through their local branches to the firms is often too long to guarantee the possibility of coverage.

\textsuperscript{14}The reduction in the banks' net foreign currency liabilities in the month of September (23,500 billion lire) was offset - by little more than a quarter - by an increase in net foreign currency liabilities towards residents (6,600 billion). Moreover this increase was not the result of a reduction in assets, i.e. of clients covering their positions, but of mounting liabilities: exporters anticipating devaluation did not convert their foreign currency proceeds, while savers increasingly converted their domestic currency assets. See Banca d'Italia (1993: 14\*).
Italian capital flew abroad to return under foreign guise\textsuperscript{15}. According to the second explanation two different groups of investors were at work, displaying different features. The Italian capital exporters were typically unsophisticated, extremely risk averse investors, who preferred to hold a strong currency despite low returns - though a part of the capital outflow may reflect a physiological tendency to gradually increase the foreign asset component of portfolios, which had been kept abnormally low by capital controls. In contrast, the foreign investors who bought lire (or the Italian investors who borrowed in foreign currency to do so) were sophisticated operators, who were able to take advantage of the interest differential, relying on the speed with which they could close or hedge their open positions. The removal of capital controls (completed by mid-1990) made hitherto neglected currencies (such as the lira and peseta, but also the French franc) attractive to this type of investors. In the case of Italy, reduction of the lira fluctuation band from 6 to 2.25 per cent in January 1990 may also have worked in this direction, limiting as it did the possibility of losses due to fluctuations within the band\textsuperscript{16} (although it should be noted that in the case of Spain the inflow of foreign capital does not appear to have been discouraged by the wide band).

Of the two speculation strategies - borrowing in the weak currency and investing in the strong currency, or borrowing low and investing high (see Koedijk and Kool 1993) - the former is characterised by a limited loss, i.e. the difference in returns, to be set against potentially very high gains (should the expected change in exchange rates actually take place), while the latter guarantees limited gains to be set against potentially very high losses (in the case of unexpected change in the exchange rates). However, in the case in point the risk of such losses was drastically reduced for many international investors by two factors: their unprecedented "exit speed", and the expected behaviour of the domestic monetary authorities when faced with a speculative attack. It is now time to take a closer look at these two factors.

\textsuperscript{15}As Kindleberger (1987: 14-15) recalls, financial history is rife with examples of foreign loans almost entirely "repatriated". In these cases, he points out, "the foreign underwriters are intermediating between two parties in the borrowing country. In addition, the lenders in the borrowing country are prepared to accept a lower return than available at home because they get a better security - one with a wider market and hence a greater liquidity - and one on which the local borrower may be less willing to default because of international complications".

\textsuperscript{16}A study carried out within the Bank of Italy (Del Giovane 1994), shows, however, that these losses have been limited even in the period of the wide band. In fact, in the 1987-91 period the lira was made to fluctuate frequently within the band (which was ±6% in the first part of the period), but not in such a way as to penalise speculators. After a speculative attack the exchange rate returned to the previous value only gradually, thus enabling speculators to cover their open positions without great losses. At any rate, the narrowing of the band significantly reduced the size of this type of losses.
With the globalization of financial markets following wide-reaching liberalisation of capital flows, deregulation and a relentless succession of financial innovations, huge quantities of funds began shifting ceaselessly in search of opportunities for gains. A particularly significant role in the expansion of cross-border securities holdings was played by the institutional investors, especially the American ones, whose foreign investments had previously been limited by administrative restrictions and the high costs of managing foreign currency positions. As has with some authority been pointed out (Dini 1994: 18), these operators "are generally subject to less stringent regulatory standards and supervision than banks... some of them appear to have greater incentives than banks to take open positions in securities and currencies and to change them rapidly". The author adds that "many observers on both sides of the fence, i.e. both authorities and market participants, underestimated the speed with which the destination of [the] flows could change" (ibid.: 20). However, this appears to have been true above all of observers situated on one side of the fence, i.e. that of the monetary authorities. In particular, the European and American commercial banks and securities firms can hardly be said to have let themselves be taken by surprise. Having intermediated the flow of funds towards high-yield currencies, they prepared - immediately after the Danish referendum - for the flow back, negotiating fixed-rate credit lines in the currencies considered at risk (lira, pound, escudo, peseta). The creation of liquid reserves at relatively limited costs gave them the opportunity to play a leading role throughout the crisis, both by lending the currencies under attack with a considerable margin above their borrowing costs and by acting as counterpart in the forward operations undertaken by investors to hedge their open positions (see IMF 1993: 12). Banks in the countries whose currencies came under attack helped feed speculation by granting loans in the domestic currency to non-residents and entering forward contracts, mainly in the form of swaps17.

As regards the monetary authorities, in the event of a crisis they were expected to intervene in the foreign exchange markets, thus giving the investors the time necessary to close or hedge their open positions in the weak currencies before a devaluation took place. Moreover, the monetary authorities were expected to sterilise the monetary consequences of their interventions, thus providing the banks with the liquidity necessary to sustain the speculative attack. The grounds for these expectations (which proved correct)18 are to be sought both in the

17Although, as the Bank of Italy explains, the Italian banks did not as a system open positions against the lira in September, they nevertheless invested a preponderant share of their lira deposits on the Euromarket (25 thousand billion lire out of a total of 33 thousand billion). This allowed them to balance their external position while at the same time satisfying the foreign demand for loans in lire, thus speculating on the high lending rates prevailing in the Eurolira market. See Banca d'Italia (1993: 14* and 15*).

18While significant operational problems were not encountered during the 1992 crisis", a report issued by the Group of Ten reads, "it has been noted that the situation might have been different in the absence of exceptionally
monetary authorities' commitment to defending the exchange rate and in their inevitable concern for the stability of the financial system, given the huge flows of funds and the concentration of hedging operations on a few institutions. At the outbreak of a crisis, lack of intervention in the exchange markets as well as a non-sterilisation policy, i.e. the decision not to supply liquidity and to let interest rates go sky high - not to speak of reintroducing even temporary capital controls - could prove extremely costly for the financial operators and could also undermine the stability of a number of intermediaries, triggering off a chain reaction. (In the light of these considerations - and of the 1995 crisis in Mexico - there is hardly much credibility in the warning not to take for granted intervention of the monetary authorities to bail out investors should another major financial crisis occur in the future.)

Gathering together the threads of the argument developed in this Section, it may be stated that the opening of uncovered positions in weak currencies can reflect various expectations. It may be motivated either by confidence in exchange rate stability or by a comparison between the interest differentials and the loss resulting from a possible realignment of the magnitude experienced in the past. Finally, it may also be motivated by confidence in the promptness with which positions can be closed or hedged. It was this last factor that appears to have provided the rationale behind the behaviour of the international investors who were able to seize the opportunities for gains offered by the interest differentials (as also, at times, by the expectation of their further fall in the near future) without necessarily assuming that the existing parities had come to stay. Nothing more than the discovery of such a way of making money in previously neglected markets is required to explain what has (improperly) been described as "convergence play". If this line of interpretation is correct, then the Danish referendum did not shake the credibility of the commitment to fixed exchange rates, but simply made it clear that the time had come to withdraw.

4. "Exit speed" and the uncovered interest parity

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19 Trade in derivatives concentrated on a very few banks: according to Bank of Italy data (Bollettino Economico, October 1993: 4*), in Italy the first ten banks account for about 72% of the total over-the-counter operations, while in the United States the first ten bank holding companies carry out over 90% of such operations.

20 For a warning of this type see Dini (1994: 22).

21 While struggling to work the relevant parts of Simonazzi and Vianello (1994) into the present paper, we found a strikingly similar view expressed in Tabellini (1994: 1222-3).
Broadly applying a distinction made by J. Hicks (1982: 258), we may say that the Italian firms that borrowed in foreign currency in 1990-92 represent an example of "solid" investors, while an American investment fund that bought lire in the same period can be taken as an example of "fluid" investor. A solid investor, "though he may choose his investment with care at the moment he makes it, can only do so in the light of what he knows at that moment. He denies himself the opportunity of changing his decision, in the light of further information available later". A fluid investor, on the other hand, is one who "plans to manage his portfolio, selling and buying as the opportunity offers". While the typical Italian firm may be thought to have compared the interest differential with the losses it would incur should a realignment (of the magnitude experienced in the past) take place, no such comparison seems to apply in the case of the typical American investment fund, which was confident in its possibility of revising its decision in good time, i.e. before a realignment took place.

Of course, there is no such thing as a perfectly solid or perfectly fluid investor. In fact, solid investors may in certain cases be induced to revise their decisions, while, as Hicks points out, even the most fluid of investors must take account of the transaction costs, which decrease as the size of the investor increases, but never vanish away. Thus fluidity and solidity are matters of degree (see Hicks 1982: 259), the "degree of fluidity" of the different categories of investors depending very much, nowadays, on whether and at which conditions they have access to hedging. Let us however, for the sake of argument, consider a perfectly fluid investor, i.e. one with no transaction costs (and no barriers to the access to derivatives), and let us further suppose that he is fully confident in his "exit speed" being sufficient to protect him from incurring losses. Clearly, such an investor would in any case hold the currency offering the highest return, no matter how small the differential might be, or how large the extent to which the currency is expected to depreciate. But even considering the more realistic case of a highly fluid and reasonably confident investor, it remains true that the interest differential he will require to hold a weak currency will hardly be influenced very much by the size of the expected depreciation.

It might seem that confidence in one's own capacity of timely withdrawal is in fact nothing more than a corollary of fluidity. For, it may be argued, a highly fluid investor, being prepared to close or hedge his open positions at any time, is unlikely to be caught by surprise by a change in the situation (for the premonitory symptoms of which he is continually on the look-out). If, however, highly fluid investors account for a large section of the market, and are all engaged in the same game, they will probably find themselves unwinding their positions at about the same

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22On some categories of investors being less able than others to protect themselves with derivatives against the impact of changes in the exchange and/or interest rates, "whether due to transaction costs or lack of expertise", see Lamfalussy (1994: 5).
time, with disastrous consequences. It has been suggested that investors are unaware of this (rather obvious) fact. As it is pointed out in the above-mentioned report of the Group of Ten (1993: 23-4), "the speed with which positions can be closed or covered in markets that are normally highly liquid may obscure the perception of the risks and increase the likelihood of ‘fallacies of composition’, whereby each market participant believes he can get out of a position before suffering losses from any change in exchange rates or other asset prices". But this is not the sort of error sophisticated professionals can easily slip into. Moreover, we have seen in Section 3 above that in the EMS crisis the conviction referred to proved far from erroneous, thanks to central bank intervention. We have also given the reasons why the monetary authorities cannot, in general, refuse to bail out the investors, and we have suggested that, as a consequence, a certain amount of bailing out is necessarily embodied in the investors' expectations. What we are interested in now is not, however, to insist on the soundness of the investors' conviction - generated by a government's commitment to a policy of fixed exchange rates - that they can count on central bank intervention, but rather to stress that in the absence of such a conviction no rational (or, indeed, reasonable) investor can be really confident in the protection offered by his own "exit speed".

In a market dominated by highly fluid investors low interest differentials may, in fact, not reflect such factors as realignment probabilities, the magnitude of the expected realignments and risk premia, but almost exclusively the degree of confidence placed by the financial community in the willingness and capacity of the central banks of the weak currency countries to offer the investors the possibility of safe withdrawal. A high degree of confidence in a central bank's bailing-out intervention may show itself in a low interest differential even if a substantial devaluation comes to be deemed inevitable. When, however, a sufficient section of the market has become convinced that the time has come for the bill to be paid, the central bank's refusal or inability to intervene will bring on a financial crisis.

The above argument seems to make the uncovered interest parity (UIP) inapplicable to all cases in which the monetary authorities are expected to defend the prevailing exchange rates (whether or not such an expectation is grounded on the existence of a target zone) and to avoid market instability. As far as it goes, this criticism of UIP is entirely different from those which have been most frequently made.

As is well known, the UIP takes the interest differential between two currencies (or the difference between their forward and spot exchange rates) as an indicator of the expected - and, if rational expectations are assumed, of the future - variation in their (spot) exchange rate over the relevant period. Regression of the actual exchange rate variation from time $t$ to time $(t+k)$ on

\[ \text{Regression of the actual exchange rate variation from time } t \text{ to time } (t+k) \text{ on} \]

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23Even the Group of Ten report points out that in several cases the aforesaid conviction was "validated" by central bank intervention (see ibid., 24).
the interest differential at time \( t \) has however shown that the latter is no unbiased indicator of the former. On the assumption of rational expectations, the bias is interpreted as evidence of a time-varying risk premium. According to others, it simply shows the existence of expectational errors (see Froot and Thaler 1990: 182). Once the assumption of rational expectations is dropped, the two explanations - expectational errors and risk premium - become complementary to one another, and attempts have been made at decomposing the bias in the interest differential into these two components. This is done by estimating the expected change in exchange rates on the basis of survey data of the expectations of foreign exchange traders, and treating the risk component as residual. The latter component proves of little or no significance, the risk premium being considerable but uncorrelated to the interest differential (Froot and Frankel 1989). A result of increasing awareness of the role played by expectational errors is that attention has come to be focused on the mechanism through which expectations are formed, and this has led to the conclusion that short-run expectations tend to be formed by projecting into the near future what has happened in the recent past (also by means of such devices as graphic and numerical analysis of past tendencies), quite independently of how exchange rate are expected to behave in the longer run.

The foregoing, admittedly incomplete, account of the discussion on exchange rate expectations may be sufficient for the purpose of highlighting, by way of comparison, our conclusions. Two aspects, in particular, are worth noting. The first is that the discrepancy between actual behaviour and expectations apparent in the purchase of a currency expected to depreciate has a certain affinity with "chartism", both attitudes being typical of fluid investors, who feel confident in their ability to close or hedge open positions promptly. Our investors, however, are not looking for short run capital gains from exchange rate variations (which at any rate, due to the peg, are not open to them, except in the form of an appreciation of the currency within the band in the case of target zones), but for high interest rates (capital gains being contemplated only as resulting from their fall over the immediate future).

The second noteworthy aspect is that, whether the assumption of rational expectations is retained or survey data are taken as a basis for assessing the market's expectations, the fact remains that whenever the latter are seen not to fit in with the UIP, this is put down to the risk premium, which is assumed to be exactly equal to the interest differential \( \text{minus} \) the expected change in the exchange rate (see Froot and Thaler 1990: 183). This amounts to saying that any other cause of divergence between the two variables is ruled out \( a \) \( \text{priori} \). We have shown, however, that at least in some cases - those in which the central bank is expected to intervene - this cannot be done, as the interest differential may prove an unreliable indicator of the expected change in the exchange rate for a reason, i.e. the investors' confidence in being given the chance of timely withdrawal, which has nothing to do with the existence of a risk premium.
Paradoxically enough, a case matching the above description - that of target zones - has been thought to lend itself to a particularly fruitful application of the UIP, which has been employed in estimating realignments expectations and ascertaining their determinants (after adjusting the interest differentials for the estimates of the expected change in the exchange rate within the fluctuation band). It is on these grounds that some have argued that the credibility of EMS bands was unperturbed by changes in practically any economic variable (the only exception being inflation differentials), and remained very high at least up to the Danish referendum (after which realignment expectations rose significantly only for the Italian lira) (Rose and Svensson 1994). If, however, we are right in suggesting that the interest differentials cannot be taken to reflect the expected changes in exchange rates, the whole procedure falls to the ground. And, what is more, there is one less obstacle to recognising that no amount of central bank stubbornness can deceive the market into believing that growing foreign debt and current account deficits are compatible with fixed exchange rates (particularly if the most important central bank does not share this belief, and acts and speaks in such a way as to undermine it).
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