

The Contribution of the Ecu to Exchange-Rate Stability: A Reply

In a recent contribution to this *Review*, we argued that the view that a fully developed Ecu in the private sphere will foster exchange rate stability lacks a sufficient theoretical and empirical underpinning. We examined this view by applying an empirical portfolio analysis to two different sets of foreign investment currencies. One of the sets comprises the four quantitatively most important currencies: the U.S. dollar, the Deutsche Mark, the Japanese yen, and the British pound sterling. The other set consists of these four currencies supplemented with four European currencies with also relatively deep financial markets: the French and Belgian francs, the Italian lira and the Dutch guilder. Subsequently, we determined the changes in the optimal portfolio composition which arise when moving between three periods distinguished. This was done for the two sets of international investment currencies and moreover for these two when they are enlarged by adding the Ecu. The calculations show that, in general, the view of an Ecu boosting exchange-rate stability is not tenable. In three of the twelve currency confrontations in the first set of currencies distinguished, the introduction of the Ecu appears to increase exchange-rate instability, while no effect of the Ecu is perceivable when employing the more extensive second set of eight currencies.

Among the authors who suggest the stabilizing effect of the Ecu, we mentioned Dr. Sarcinelli. He has written a useful comment, because it criticizes essential elements of our reasoning which appear to be less clear than we thought them to be at the moment of writing and because it contains a simple example which can be used to highlight the core of our article. In his comment on our paper, Dr. Sarcinelli makes the following three points of criticism, which in his opinion undermine our analysis. Firstly, the Ecu ought to be considered in all its functions of an international reserve currency and not only as an investment currency, as we did. Secondly, the restrictiveness of the assumptions underlying the portfolio approach makes our outcome useless in practice. Thirdly, unlike our inference, he interprets the outcome of our calculations as being in favour of the hypothesis that the Ecu creates exchange rate stability.

Below, we first try to rebut these three objections. Thereafter we comment upon the example with which Sarcinelli finishes his comment.

A fully developed international reserve asset is often characterized by its functions, *viz.* as a unit of account, a means of payment and a store of value, both in official and private transactions (*cf.* Cohen, 1971, p. 18, and Kenen, 1983, p. 16). One may wonder whether the Ecu already exercises all these functions. Particularly as a currency for invoicing and as a vehicle currency in international trade transactions there has been a rather limited use of the Ecu (see, for example, Allen, 1986, p. 16). More important, however, is that whether the Ecu is a fully developed or still an incomplete international reserve asset is not relevant to the problem of the Ecu's impact on exchange-rate stability. Of course, the unit-of-account and means-of-payment functions of a reserve asset will stimulate the demand for the asset involved. These demand impulses, however, will change only very gradually with the passage of time. The discharge of these two functions will mainly be affected by longer-run developments. As a consequence, these two reserve asset functions will have a negligible contribution to short- or medium-term exchange-rate stability.

An important determining development for the unit-of-account and means-of-payment functions of a reserve asset is probably a substantial long-term change in its value. The variability of its value in the longer run will also be of importance. The gradual slowdown of the U.S. dollar as a reserve asset since the last part of the 1970s illustrates this relationship. These two determining factors, however, are exactly the essential elements of the portfolio analysis. A stimulus for the store-of-value function will, therefore, if its effect continues as time goes by, also induce an impetus for the two other functions of reserve assets. An explicit consideration of these two functions, as Sarcinelli advocates, will therefore not affect the perspective of the reserve asset involved.

It is true that the Capital Asset Pricing Model (CAPM) relies upon rather specific assumptions. In order to arrive at an equilibrium relationship of security prices, the expectations are assumed to be homogeneous. In our article, however, we do not use CAPM for deriving equilibrium values of asset prices, but for determining optimal portfolio shares of various assets during different periods. Subsequently, the changes of these shares through time are used for analysing the possibly (de)stabilizing effects on exchange rates. Given heterogeneous expectations, for this analysis to be valid, it is sufficient to assume that the expectations used dominate the market. More in general, our particular assumptions cannot undermine our results, because, as we stated in Jager and De Jong (1988, p. 56), the most important proposition of the article is that it proves to be *possible* that the addition of the Ecu to the investment currencies results in increased exchange rate instability. To arrive at that result, it is sufficient to construct a particular structure that allows a boost in exchange rate instability. That is precisely what we did.¹

¹ Note that the exchange rate instability that we encountered cannot be attributed to destabilizing expectations, because the exchange-rate expectations are assumed to be extrapolative and the interest rate expectations are assumed to be neutral.

Sarcinelli's last objection concerns our interpretation of the quantitative results.² His interpretation of the results is that "the existence of ten out twelve observations contradicting the instability hypothesis seems to be statistically sufficient to refute its validity with a reasonable degree of confidence".³ Here Sarcinelli mistakenly interprets our analysis as a search for complete exchange rate stability or instability. Our more modest objective was to question the hypothesis — promoted by some authors to a proposition — that the Ecu boosts the stability of the exchange rates. Then, in fact, one counter-example suffices. Actually, we found three of these examples in our analysis from the global perspective. Viewed from the European perspective, all the cases considered reject this hypothesis, because the introduction of the Ecu proved not to contribute to exchange-rate stability. In fact, this outcome implies that the Ecu's effect on exchange-rate stability depends entirely on the actual situation.

Finally, we would like to comment on the example employed by Sarcinelli to explain his assertion "with a more modest analytical apparatus". For it furnishes us with the possibility to further elucidate our point of view.⁴ Sarcinelli develops a three-currency world consisting of the U.S. dollar, Deutsche Mark and Japanese yen, and argues that an expected depreciation of one of these currencies, results in only moderate appreciations of the other two as long as these are 'big', that is, as long as their financial markets are deep. A substitution of the 'big' Ecu for the possibly 'small' Mark will therefore foster exchange-rate stability. Even when we use Sarcinelli's apparatus, the replacement of the 'small' currency by the 'big' one can easily contribute to exchange-rate instability. This event occurs when we only reverse the cause and suppose that investors expect a depreciation of European currencies. The resulting flows of investments out of European into non-European assets hit the dollar and yen much harder when the investors move out the 'big' Ecu market instead of out of the 'small' Mark one.

A second objection to Sarcinelli's example emerges when we turn to our own approach of the instability problem. We can illustrate the possible effects of an expected depreciation of the dollar by means of the transition from period

² Tables 1 and 2 of our article contain some mistakes which by the way do not at all affect the results. For the sake of completeness, they are listed in this note. If we denote the element in row *i* of column *j* as (*i*, *j*), then the following corrections should be made in table 1: element (2, 6) between brackets is -5 and becomes -55, element (9, 12) between brackets is 4 and becomes 0, elements (14, 9) and (17, 8) between brackets are + and become -1. In table 2, element (6, 1) is 9 and becomes 13.

³ In this quotation Sarcinelli wrongly refers to ten instead of nine observations. In arriving at his number of ten, he excludes arbitrage activities. In our opinion, there is no reason why the available arbitrage gain will not be realized. The exclusion of these activities from the analysis thus forms a much less realistic description than the one obtained by including them.

⁴ It is somewhat peculiar that Sarcinelli also uses homogeneous exchange rate expectations and only looks at the store-of-value or investment function of the ECU in his example, for these are features of our analysis which Sarcinelli criticizes.

3 (*viz.* 1981 IV -1984 III) to period 1 (*viz.* 1976 IV - 1979 III). According to Table 1 in Jager and De Jong (1988, p. 45), this transition appears to be associated with an instability in the Mark/yen rate induced by the introduction of the Ecu. The last row of this table shows that, excluding the Ecu, the transition has no impact on the share of the yen in the optimal portfolio in the world. It was, and remains, 14%. The share of the Mark increases, however, from 5 to 17%. When we introduce the Ecu, it proves to have only a small portfolio share of 5% in period 3, at the cost of 3 percentage points of the yen's share while the share of the Mark is not affected. The transition to period 1, however, has an enormous positive effect on the Ecu's share; it rises to 50% at the cost of 10 percentage points of the yen's portfolio share and of 14 percentage points of the portfolio share of the Mark. Incorporating the arbitrage effects as discussed in section 2 of our article, in each period 32% of the share that the Ecu acquires gives rise to a demand for Deutsche Mark. This additional demand for Marks thus (rounded off) amounts to 2 percentage points in period 3 and 16 percentage points in period 1. Consequently, the transition from period 3 to period 1 leads to the following relative changes in percentage points in the portfolio share of the Mark with regard to the yen. Excluding Ecu: +12, including the Ecu: +5, ditto with arbitrage: +19. This example shows that the introduction of the Ecu may give rise to an unstable exchange rate, in our case for the Mark against the yen.

This brings us to the core of our article, namely that the growth of the Ecu does not necessarily enhance the stability of exchange rates but may lead to instability too. Since, in our opinion, there is a chance that the Ecu will lead to exchange rate instability by means of its own fluctuating portfolio share, the relevant issue is the selection of measures to minimize the possibility that this 'fluctuation case' will occur. The most important measures for preventing this instability are those aimed at avoiding temporary capital flows which arise from changes in the expected exchange rates. If we disregard proposals to reduce capital flows by means of taxes (for example, the Tobin-tax), this implies that fiscal and monetary policy should be co-ordinated both on the global and the European level to create a stable share of the Ecu in international portfolios. As argued in Jager and De Jong (1987), complete co-ordination might, however, wipe out the attractiveness of the Ecu because its comparative advantage, *i.e.*, that its value is more stable than that of the component currencies, then disappears. Thus, conditional upon the assumptions of the CAPM, there seems to be an *optimal* level of economic co-ordination which generates both a satisfactory level of exchange-rate stability and a rather stable share of the Ecu in private portfolios. Of course, the authorities can also decide to use policy co-ordination for attaining complete exchange-rate stability and take other measures aimed at giving the Ecu additional attraction to national currencies for promoting the use of the Ecu (see *e.g.* Steinherr, 1985, pp. 179 and 180).

Amsterdam

HENK JAGER - EELKE DE JONG

REFERENCES

- ALLEN, P.R., 1986, "The ECU: birth of a new currency", *Group of Thirty Occasional Papers*, no. 20, New York.
- COHEN, B.J., 1971, *The future of sterling as an international currency*, London New York.
- JAGER H. and E. DE JONG, 1987, "The exchange rate mechanism of the EMS and the ECU as a reserve asset; an impending incompatibility", *European Economic Review*, 31, pp. 1071-1091.
- JAGER H. and E. DE JONG, 1988, "The private ECU's potential impact on global and European exchange rate stability", in this *Review*, no. 164, pp. 33-59.
- KENEN, P.B., 1985, "The role of the dollar as an international currency", *Group of Thirty Occasional Papers*, no. 13, New York.
- SARCINELLI, M., 1988, "The contribution of the ECU to exchange-rate stability: a comment", in this *Review*, this issue, pp. 327-330).
- STEINHERR, A., 1985, "The high dollar and competitiveness: policy issues for Europe?", in: Peeters, T., P. Praet and P. Reding, eds., *International Trade and Exchange Rates in the Late Eighties*, Amsterdam, pp. 163-199.