Berichte

Domestic Credit Expansion, Confidence and the Foreign Exchange Market: Sterling in 1976*

I.

The period from February to November 1976 was marked for the United Kingdom by recurring sterling crises with a fall of some 19 % in the effective exchange rate despite massive official intervention in the foreign exchange market. Subsequently the government negotiated conditions for a loan from the IMF, the foreign exchange market turned round, sterling was allowed to recover somewhat and the Bank of England began to rebuild its reserves.

Although the correct explanation of the movement of sterling during 1976 is far from obvious there has been little discussion of it in the literature.[1] Yet it can be argued that this movement had a crucial impact on the UK's macroeconomic course over the next few years. Table I shows how the four quarter inflation rate was falling rapidly from its peak in 1975 Q3 until 1976 Q4 when it rose again under the impact of the sterling depreciation: had that depreciation not occurred it is arguable that UK inflation would have gone below double figures at least a year before it actually did.[2] If this had happened the government might have reflated earlier and/or more strongly, real incomes might have fallen less and unemployment might never have gone as high as 6 %.[3]

* I am grateful to *Dennis Coppock, Rod Cross* and *George Zis* for comments on an earlier draft, both those which have been taken to heart and those which have not.

[1] For example, none of the contributions to *Posner* (1978) makes any reference to it. There is also hardly any discussion of the period in *Gowland* (1978), or in more political analyses such as *Coates* (1979).

[2] For the convergence of views on the rapid pass-through of exchange rate changes to prices see *Ball, Burns* and *Laury* (1977) and *Artis* and *Currie* (1979). In this particular case if, for example, the four quarter rate of inflation had continued to fall after 1976 Q3 either at the (arithmetic) average rate of the fall between 1975 Q3 and 1976 Q3 or at the average rate of the fall between 1977 Q2 and 1978 Q2, it would have gone below double figures in 1977 Q1 instead of 1978 Q2.

The importance of the 1976 sterling depreciation and the lack of detailed analysis elsewhere would appear to justify a paper devoted to this episode. Accordingly we start in section II with a brief discussion and rejection of three fairly simple explanations which might be suggested a priori but do not fit the facts; we then introduce the basic framework of the monetary approach to the balance of payments (MAB) to which frequent reference will be made in the rest of the paper. Section III sets out the most common interpretation of the episode, which gives a primary role to fluctuations in confidence. Section IV discusses some criticisms of this interpretation by *Atkinson* (1977), and this leads on to a more detailed analysis of the rationale underlying government policy during the period. Section V sets out a MAB interpretation of the episode, and considers the possibility of tests to discriminate between this and the confidence interpretation. Section VI draws some conclusions on this particular episode and for future policy, and the Appendix discusses briefly the role of political factors in the episode.

An important assumption made throughout the paper is that, whatever the debates and disagreements between different government economic advisers, officials and/or ministers, the actions which the authorities actually took did have some coherent, though not necessarily correct, rationale. This assumption can be considered as vindicated to the extent that the analysis succeeds in making sense of the authorities' behaviour on this basis.

II.

Between the first and last quarters of 1975 the sterling effective exchange rate declined by some 10.6 % altogether, in a decline which slowed down appreciably during the last quarter. After remaining almost constant in January and February the rate then fell by a further 18.6 % between February and October 1976 despite massive official sales of foreign exchange. About a fifth of this fall was then made up again between November 1976 and January 1977. The movement of sterling against the dollar followed broadly the same pattern, with the exchange rate falling from just over $ 2 in January and February 1976 to a low of $ 1.586 on 29 October, and recovering by January 1977 to $ 1.71.

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[3] It is also conceivable that the 1978 - 79 'winter of discontent' would not have taken place, and that the Labour Party would have won a general election in the autumn of 1979 or before.

Sterling would have risen further if there had not been massive official purchases of foreign exchange. (Tables I und II provide the various relevant statistics.)

One possible explanation of the sterling depreciation might be that it was a response to the weakness of the current account. However the current account deficit was clearly improving up to 1976 Q1: the deficit for 1975 was less than half that for 1974, the deficit for the second half of 1975 was despite quarterly fluctuations less than that for the first half, and in 1976 Q1 the deficit showed a further substantial reduction.[4] The weakness of the current account cannot therefore be held responsible for the flight from sterling in March 1976.

A second possible explanation might be that the depreciation was the result of excessive monetary growth in the preceding period. However sterling M3 (£M3) was growing much more slowly than nominal income throughout 1975, and Domestic Credit Expansion (DCE) as a percentage of £M3 was falling sharply from 1975 Q2 and although greater than Δ£M3 was still below the growth rate of nominal income. Monetary policy on either definition was therefore tight during 1975 and it is not possible to argue from the figures that any significant relaxation occurred in 1976 prior to the depreciation: this explanation must also be rejected.

A third possible explanation might be that the depreciation was merely the natural result of, and a correction for, an overvaluation caused by higher than world inflation in the UK during 1974 and 1975. It is notoriously difficult to compare price levels between countries but the evidence suggests that at most only a small part of the depreciation could be explained in this way. According to the calculations in *Batchelor* (1977), for example, the sterling effective exchange rate was 2.1 % undervalued on average during 1975, compared to 6.5 % in 1973 and 6.4 % in 1974; while over the period January to November 1976, during which time the effective rate fell by nearly 19 %, sterling was on average 9.8 % undervalued.[5] The point is that although prices rose more rapidly in the UK than in most other industrialised countries

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[4] Recently revised figures in fact show a small surplus for this quarter.

[5] Deviations from purchasing power parities calculated from consumer price movements, in *Batchelor* (1977, Table 6). These figures conceal enormous variations between currencies: in 1976, for example, sterling was 11,5 % overvalued against the dollar but 23,1 % and 27,9 % undervalued against the mark and the yen respectively.

Table I: **Monetary Growth, Inflation and the Balance of Payments, 1975 Q1 to 1977 Q1**

	Current quarter plus 3 previous quarters as % of £ M3 at end of previous period, seasonally adjusted			% change in retail price index since 4 quarters before	£ m.			Dec. 1971 = 100
	DCE	*Δ £ M3*	Balance for official financing		Current account seasonally adjusted	Change in sterling balances	Balance for official financing	Sterling effective exchange rate
1975 I	19,4	8,4	— 5,0	20,3	— 594	247	— 326	81,7
II	21,0	9,1	— 5,8	24,3	— 361	— 17	— 572	79,1
III	18,0	9,9	— 6,3	26,5	— 676	— 379	— 213	75,2
IV	12,8	6,7	— 4,2	25,3	— 224	82	— 354	73,0
1976 I	14,3	6,9	— 5,2	22,5	— 79	— 75	— 678	72,0
II	15,7	8,1	— 9,0	16,0	— 315	— 932	— 1,956	65,8
III	20,0	9,1	— 10,4	13,7	— 417	— 137	— 862	64,1
IV	19,4	9,1	— 9,8	15,0	— 326	— 8	— 133	59,6
1977 I	14,0	8,4	— 2,8	16,5	— 480	389	1,913	61,8

Source: Economic Trends, December 1978.

Table II: **Monetary Growth and the Exchange Rate, October 1975 to January 1977**

Month ending	% of £ M3 at end of previous period, seasonally adjusted		Δ M3 as % of M3 at end of previous period, seasonally adjusted	% of *DCE*, seasonally adjusted		Calendar month	Sterling effective exchange rate Dec. 1971 = 100
	DCE	Δ £ M3		PSBR minus net sales of public sector debt to private sector	Bank lending in sterling to private and overseas sectors		
1975 Nov. 19	0,2	0,3	– 0,6	198,9	– 98,9	1975 Oct.	73,4
Dec. 20	0,4	– 0,1	–	74,3	25,7	Nov.	73,0
1976 Jan. 21	0,8	0,5	1,0	160,8	– 60,8	Dec.	72,6
Feb. 18	1,2	1,0	1,5	70,7	29,3	1976 Jan.	72,8
Mar. 17	1,7	0,3	0,5	73,8	26,2	Feb.	72,7
Apr. 21	3,5	1,4	1,5	55,2	44,8	Mar.	70,5
May 19	1,8	0,6	0,5	52,5	47,5	Apr.	67,2
June 16	2,0	0,6	1,2	62,7	37,3	May	65,8
July 21	2,8	1,6	1,9	47,5	52,5	June	64,3
Aug. 18	1,7	1,6	1,7	74,8	25,2	July	65,1
Sept. 15	3,4	1,4	1,9	52,8	47,2	Aug.	64,8
Oct. 20	1,3	1,2	0,8	– 10,3	110,3	Sept.	62,5
Nov. 17	1,8	1,1	– 0,7	24,0	76,0	Oct.	59,2
Dec. 8	– 0,5	– 0,4	– 1,0	166,8*	– 66,8*	Nov.	59,1
Jan. 19	– 1,9	– 1,3	– 0,6	115,8*	– 15,8*	Dec.	60,5
						1977 Jan.	61,8

* Since *DCE* was negative in these two months, debt sales exceeded the PSBR and bank lending was positive.

Source: Economic Trends, March 1977 for effective exchange rate, otherwise Bank of England Quarterly Bulletin, various issues.

between 1972 and 1975 (particularly in the latter year) there was also substantial depreciation: the sterling effective exchange rate started 1976 some 27 % below its December 1971 level. Furthermore an incomes policy had been introduced in August 1975, and the inflation rate was clearly falling.

These three explanations, at least in the form given here, can also be considered rather crude in two respects. Firstly they make no distinction between the different phases of the episode: this is unsatisfactory since different factors may have been dominant at different times. Later sections of this paper will therefore differentiate between the initial depreciation of sterling in March 1976, the continuation of depreciation intermittently throughout the next eight months, and the ending and partial reversal of the depreciation in the following three months.

Secondly they make little or no use of the relationships between the foreign exchange and money markets which MAB has emphasised. Briefly, the accounting identity between the liabilities (money supply, M_s) and assets (domestic, D and foreign, R) of the banking system can be rearranged to give

$$\Delta R \equiv \Delta M_s - \Delta D$$ [6]

Given (i) the assumption that the demand for money is stable, (ii) the assumption that the money market tends towards equilibrium, and (iii) the assumption that there are limits to the extent to which the arguments of the demand for money can adjust in response to variations in DCE (= ΔD), MAB argues that the balance of payments (ΔR) and/or exchange rate where the latter is not fixed are monetary phenomena controlled essentially by the rate of a country's DCE relative to the rates in other countries.[7] MAB generally assumes that DCE is exogenous and that causation runs from DCE to the balance of payments/exchange rate. On the other hand, it could be argued that governments generally attempt to sterilise or neutralise balance of payments deficits and

[6] For the UK the relationship is slightly more complicated. See e. g. *Cobham* (1977) for further details of the accounting framework, including the new DCE and money supply definitions introduced in December 1976.

[7] For further discussion of MAB see *Frenkel* and *Johnson* (1976), particularly Chapter 6 by *Johnson* (1972), *Putnam* and *Wilford* (1978) and *Frenkel* and *Johnson* (1978). The analysis in this paper concentrates on the choice between MAB and non-MAB explanations in general rather than on the choice of a particular model of exchange rate determination from within the group of MAB models (surveyed in *Bilson*, 1979).

surpluses so that DCE is endogenous and causation runs from the balance of payments/exchange rate to DCE.[8] Accordingly in the rest of this paper care will be taken to produce an integrated analysis of the balance of payments/exchange rate and DCE.

As regards the rates of DCE in the rest of the world, Table III shows that DCE rates in the other major countries fluctuated much less than that in the UK over the period 1974 - 77 and between 1975 and 1976 in particular. The analysis therefore proceeds on the simplifying assumption that the rest of the world can be taken as given for the short period under examination, and sets out to explain the movement of the pound during 1976 in terms of factors peculiar to sterling and to the UK. It is also assumed that the demand for money is relatively stable in the sense that the relevant error terms are small compared to the fluctuations in DCE and the balance of payments.

Table III

DCE Rates in Major Countries

	1974	1975	1976	1977
	%	%	%	%
France	19,4	17,2	16,4	15,9
Italy	25,3	26,8	24,2	18,5
Japan	17,0	19,4	16,3	12,6
U.K.	22,5	10,8	18,7	8,2
U.S.A.	10,9	4,6	8,7	11,4
West Germany ...	11,2	15,5	14,7	13,1
Weighted average	15,1	13,1	14,0	12,9

DCE rates are increases in Domestic Credit (as defined by the *IMF*, line 32 of *International Financial Statistics*) as percentages of totals of Money (line 34) and Quasi-Money (line 35) at end of previous period. Weights are relative sizes of money supplies (lines 34 and 35, converted into dollars at market rates) in 1975.

Source: International Financial Statistics, April 1979.

[8] See *Cobham* (1980) for further discussion of causation in the monetary approach.

III.

The 'established' interpretation of the period, articulated in different versions by the Bank for International Settlements (BIS) (1977, pp. 37 - 41) and the Midland Bank Review (MBR) 1977 b), for example, emphasises the state of 'confidence' in the foreign exchange market. The initial depreciation is explained either in terms of the unfortunate psychological effects of the sterling exchange rate falling below $ 2 in March, whether the fall was intended by the authorities or not, or in terms of 'politically motivated' withdrawals by official overseas holders of sterling balances.[9] In either case the 'loss of confidence' is seen as 'unjustified' since money supply growth had been falling during 1975, an incomes policy had been introduced in August and inflation had begun to fall at about the same time.

The continued depreciation of sterling between March and October is explained, in this view, in terms of four interacting factors. Firstly the depreciation of sterling led to a deterioration of the current account along the usual lines of the 'J-curve', and this deterioration encouraged further depreciation both directly and via its psychological impact on the foreign exchange market. Secondly the depreciation and weakness of sterling led companies to lead and lag both deliveries and payments of imports and exports, increasing their overdrafts to do so, and thus causing further deterioration of the balance of payments. Thirdly the lack of confidence in the foreign exchange market brought about a lack of confidence in the gilt-edged market so that official sales of gilt-edged were low. Fourthly the last two factors led to a higher growth of the money supply and the perception of this higher growth by operators in the foreign exchange market perpetuated and increased their lack of confidence. These four factors thus interacted to generate both depreciation and, via lower gilt-edged sales and higher bank lending, high levels of DCE.

Finally the ending and partial reversal of this depreciation are explained, in this view, in terms of a revival of confidence brought about mainly by the government's opening of negotiations with the IMF and

[9] The MBR disccusses the authorities' intentions (on this point see also *Fay* and *Young* (1978) and *Haines* (1977, p. 68)). The BIS stresses sterling balances but does not mention political motivations. *Zis* (1978, p. 353) mentions the widespread belief "that Nigeria, motivated by purely political considerations, accounted for well over 50 % of the fall in the oil exporting countries' sterling balances."

the prospect of IMF-imposed controls on public expenditure, the PSBR and monetary growth. This revival of confidence is seen as having led both to the renewal of official gilt-edged sales and reversal of leads and lags (hence to a sharp reduction in DCE), and to a writing up of the value of sterling in the foreign exchange markets.

This kind of interpretation has also been put forward by the Bank of England. Thus the initial fall of sterling was attributed by the Bank to the market's 'misinterpretation' of sales of sterling by the authorities designed to prevent "any significant appreciation of sterling ... which might prove unsustainable" (BEQB, 1976 b[10] p. 171). The Bank subsequently argued that the pressure on sterling had developed because the foreign exchange market "appeared to consider a reappraisal of the exchange rate to be appropriate in the light of the United Kingdom's current and prospective economic performance"; (1976 c, p. 313) and gave as "underlying reasons for sterling's decline" the fact that UK inflation was still above that of most other industrial countries, "widespread unease at the size of the public sector borrowing requirement and ... the faster pace of monetary growth," and the continued large current account deficit (1976 d, p. 419). The deterioration of the current account was discussed in tems of J-curve-type effects (1976 c, p. 295). And higher monetary growth was explained as the result of lower gilt-edged sales and higher bank lending to finance leads and lags (1976 c, p. 296 and 1976 d, p. 418).

Later, "The pound appreciated markedly during the three months from November to January ... Confidence in sterling improved for several reasons, including the discussions between the Government and the International Monetary Fund, and the announcement of a new facility to protect the exchange rate from the effects of a withdrawal of official sterling holdings" (1977 a, p. 22). And lower monetary growth was explained as the result of higher gilt-edged sales caused by the improvement in confidence, and an unwinding of leads and lags (1977 a, p. 14 and 1977 b, p. 149).

Two particular points should be noted about this kind of interpretation. Firstly it treats confidence as a quasi-autonomous factor which is connected to underlying economic developments and to government policies only at the level of operators' (not particularly rational) perceptions of these developments and policies, and not at a technical

[10] *Bank of England Quarterly Bulletin*, June 1976. Suffixes a, b, c and d refer to the March, June, September and December issues respectively.

economic level.[11] Secondly this kind of interpretation hardly mentions, and appears to attribute little responsibility to, monetary policy and the monetary authorities. The BIS does not mention the Bank of England at all, though this may be for diplomatic reasons. The MBR discusses official exchange rate policy and the government's loan application to the IMF, but does not pay much attention to monetary policy or the reasons why the authorities chose to act as they did.

IV.

Some criticisms of this interpretation have been put forward by *Atkinson* (1977). He too explains the initial depreciation of sterling in terms of the effect on confidence of the official sales of sterling in March 1976, though he also emphasises the build-up of liquidity in the banking system during 1975. But he ascribes the continuation of the depreciation to the fact that "until October the Bank held interest rates down (to fight the recession) despite the very large budget deficit and market sentiment to the contrary"; and the ending of the depreciation to the Bank's being "forced to go to the Group of Ten and then to the IMF for financial support and, more importantly, to bow to market sentiment and raise interest rates. When interest rates rose sufficiently to enable the sale of substantial quantities of government stock, the rate of expansion of money and credit was reduced dramatically and the pound strengthened markedly on the exchanges" (p. 221).

He then specifically criticises the BIS for "[repeating] the common assertion that the exchange crises and the depreciation of sterling in 1976 were due to withdrawals of foreign holdings of sterling and not to an excessively lax monetary policy," (p. 224) on three grounds: firstly the reduction in official sterling balances was much less than (between one third and one half of) the deficit on the balance for official financing between March and October; secondly the total pressure on sterling must have been much greater than the deficit since sterling fell substantially in spite of this massive intervention in the foreign exchange market; and thirdly monetary growth in the second and third quarters of 1976 was in fact very high, since M3 and sterling M3 rose in those two quarters at a much faster rate than during 1976 as a whole, and since

[11] A clear expression of this can be found in *Thirlwall* (1980, p. 163): "The volatility of floating exchange rates in general, and the demise of sterling in particular, is to be explained by the whims and sentiment of speculators, and by the political activities of creditors."

domestic credit was expanding much faster than either definition of the money supply.

While *Atkinson's* criticisms of the BIS are certainly correct in themselves (see Tables I and II) his own interpretation is unsatisfactory for two reasons. Firstly the important role which *Atkinson* attributes to 'market sentiment' seems to conflict with his emphasis on the laxity of monetary policy. For it could be argued both that withdrawals of official sterling balances could, via their effects on confidence, have caused the (much greater) pressure on sterling, and that the high rates of monetary growth were precisely the result of poor 'market sentiment'. Secondly, given that the Bank held interest rates between March and October too low in terms of 'market sentiment' and the funding requirements of the public sector,[12] it begs the question to ascribe this to a desire to "fight the recession": the interesting question is, why did the Bank think that fighting the recession in this way was compatible with its balance of payments/exchange rate targets?[13] We shall now try to provide an answer to this question, and then return to the interaction of confidence and monetary policy.

We have already seen that the Bank emphasised confidence, the interaction of the gilt-edged and foreign exchange markets, and increased bank lending to finance leads and lags. But there is another aspect of the Bank's views which needs to be emphasised. This is that, insofar as the Bank paid attention to monetary aggregates, it was only M3 that was considered to be important (sterling M3 was not used before December 1976) and not DCE. The latter aggregate has had a chequered history in the UK. It was introduced by an unwilling Bank and Treasury at the behest of the IMF in 1969 but gradually removed from prominence after April 1971 when the IMF-imposed DCE limits came to an end;[14] and neither the Bank nor the Treasury have yet published a serious discussion of the monetary approach to the balance

[12] The Bank was not holding interest rates down absolutely — minimum lending rate rose by 1 1/2 % in April, another 1 % in May and another 1 1/2 % in September, and gilt-edged yields also rose substantially.

[13] Even if the authorities wanted some depreciation they cannot have wanted nearly as much as actually took place — see *Fay* and *Young* (1978) and *Haines* (1977, p. 68).

[14] After the sterling exchange rate ceased to be fixed in June 1972 the continuing substantial official intervention in the foreign exchange market meant that DCE remained a significantly different aggregate from the change in money supply, so exchange rate flexibility does not constitute an adequate reason for the neglect of DCE.

of payments, as formulated by IMF economists or by academic monetarists, with its implication that DCE rather than the change in M3 is the 'control variable' for the balance of payments/exchange rate and the aggregate on which monetary policy should focus.[15]

The importance of the choice of aggregate is that if monetary policy is thought of in terms of the change in M3 there is no obvious technical economic transmission mechanism from monetary policy to the exchange rate. Exchange rates must be determined either by some sort of purchasing power parity mechanism, or by the confidence of operators in the foreign exchange market, and with monetary policy defined in this way neither of these can be directly, immediately or precisely controlled by it. At best, monetary policy can control the uncovered interest rate differential but, as Figure I makes clear, the fluctuations during 1976 in the covered differential (which is presumably a more important influence on capital flows than the uncovered) were dominated by fluctuations in the forward margin rather than the uncovered differential. The latter widened almost continuously from April to November, but movements in the forward margin were such that the covered differential fell irregularly over the same period. (The consistency of this picture over eight months makes it unlikely that it could be the result merely of inexpert intervention in the forward market.)

Initially the Bank seems to have been inclined to stress relative price levels: "During the period since the general adoption of floating rates, the exchange rates of most countries have tended to reflect the movement of internal prices relative to those of their competitors ... But it is clear that the recent depreciation of sterling had gone well beyond the point that could be justified [on grounds of international comparisons of cost and price changes]" (BEQB, 1976 b, p. 166). But later it placed more emphasis on other factors which it saw as affecting confidence, such as changes in strike prospects and the publication of the Labour Party National Executive Committee's proposals for national-

[15] The nearest the Bank has come to such a discussion is the argument that (given the monetary system in the UK and the way the authorities operate within it) DCE may not be independent of the balance of payments/exchange rate: see Bank of England (1978, esp. p. 527); also the comments in *Goodhart* (1978, pp. 188 - 189). The Bank and the Treasury are not alone in their failure to confront the monetary approach: the discussions in the *National Institute Economic Review* (1977, pp. 40 - 43) and the MBR (1977 a) of the government's adoption of DCE targets in the December 1976 Letter of Intent to the IMF contain no reference to, and show no acquaintance with, any IMF or academic discussion of the monetary approach.

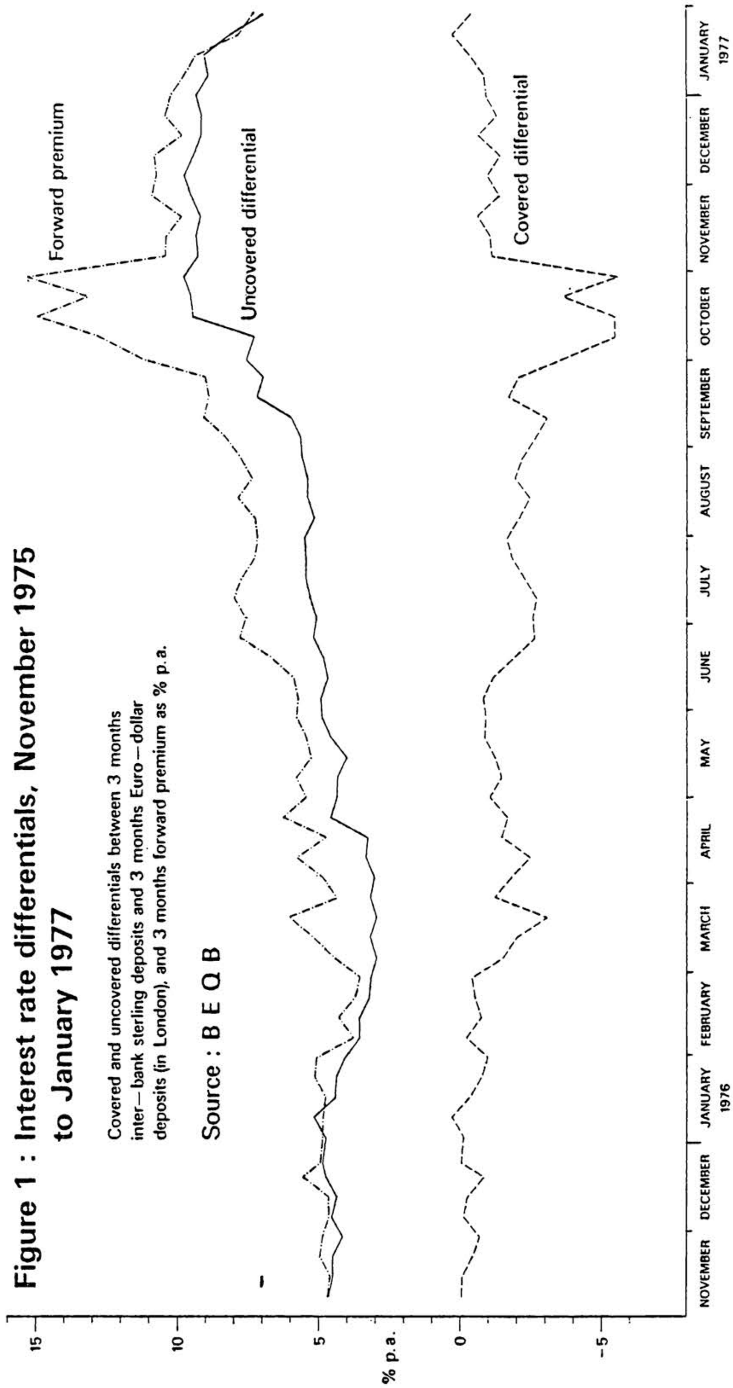

Figure 1 : Interest rate differentials, November 1975 to January 1977

Covered and uncovered differentials between 3 months inter–bank sterling deposits and 3 months Euro–dollar deposits (in London), and 3 months forward premium as % p.a.

Source : B E Q B

isation of some banks and insurance companies (1976 c, p. 302 and 1976 d, p. 430).

It is only on the basis of these views that the actions of the authorities can be understood. Firstly throughout most of the period from March to October monetary policy was passive in the special sense that the Bank saw itself most of the time as responding to, rather than attempting to lead, developments in the markets: in particular interest rates were moved up in line with rather than ahead of 'market sentiment', the authorities allowed long periods during which they sold no gilt-edged at all, and the high levels of bank lending to the private sector went unrestrained. Secondly in June the authorities arranged an enormous standby credit from the Group of Ten and obtained public statements from foreign bankers and politicians to the effect that sterling was undervalued (1976 b, p. 163). Thirdly they announced in July a small downward revision of the PSBR forecast for the current year, 1976 - 77, (but no change in policy) and some measures to reduce the PSBR for 1977 - 78. Fourthly the Chancellor announced in July that the growth of M3 in 1976 - 77 "should amount to about 12 %" (1976 c, p. 296) but no action was taken to ensure this despite the fact that the growth of M3 was, at an annual rate, currently well above 12 %. And fifthly the government announced at the end of September that they were applying to the IMF to draw the UK's remaining credit tranches — which implied IMF surveillance over UK macroeconomic policies.

This 'passiveness' of monetary policy on the one hand and emphasis on actions which might be expected to have important 'announcement effects' on the other clearly made sense only because the authorities thought that exchange rates were determined by confidence, where the latter was not affected, except indirectly via market operators' perceptions of economic developments and policies, by their own monetary policy. Similarly the authorities' emphasis on the month to month and quarter to quarter volatility of monetary growth, such that for a long time they could not be sure that monetary growth was excessive (e. g. 1976 c, p. 298 and 1977 b, p. 152) reflected a concentration on the growth of M3: had they paid more attention to DCE they might have responded differently, since it would have been obvious not merely that DCE was higher than in 1975 but also that in spite of the faster growth of M3 the gap between DCE and the change in M3 was widening rapidly.

V.

We can now return, with a better understanding of the theories conditioning the authorities' behaviour, to the question of the interaction between confidence in the foreign exchange market and monetary policy. We have already examined the interpretation of this interaction put forward by the BIS, the MBR and the Bank itself. At the risk of some repetition this interpretation can be summed up in three propositions: (i) the (quasi-autonomous) state of confidence caused the initial and subsequent depreciation and at the same time generated high levels of DCE, and then, when it improved, brought about the strengthening of the balance of payments/exchange rate and the reduced level of DCE; (ii) monetary policy was passive not only in the special sense that the authorities were not attempting to lead the markets but also in the sense that policy did not recreate further losses of confidence once the initial loss had occurred; and (iii) the authorities' actions were, if not right, at least understandable and a well-meaning attempt to protect the domestic economy from the effects of the essentially unjustified fears of foreign holders of sterling.

However we are now in a position to set out a second possible interpretation, which is implicit in much that has already been said. In anything other than the very short run (one or two weeks) it can be argued that confidence is part of the transmission mechanism from monetary policy to the exchange rate,[16] and is connected to and determined by monetary policy at a technical economic level: excessive (inadequate) DCE produces depreciation (appreciation) partly by means of weak (strong) confidence in the foreign exchange market. On this view the initial depreciation of sterling in March 1976 was caused by very short run confidence factors (DCE as well as money supply growth was falling during 1975), but it would have been quickly halted and reversed if the authorities had not responded in a way that allowed DCE to increase rapidly. In other words the authorities validated ex post the temporary loss of confidence associated with sterling's falling below \$ 2, and turned what would otherwise have been a minor, passing, fluctuation into a major economic event.

[16] Other elements of the transmission mechanism would be the (uncovered) interest rate differential, the forward premium/discount, the price differential between foreign and domestic and/or traded and non-traded goods and services, and income and wealth effects.

Over the next six or seven months they then periodically recreated by their policies a lack of confidence and so brought about further substantial depreciation. Excessive DCE was also responsible for the deterioration of the current account in the second and third quarters of 1976. Finally one element of DCE, credit extended to the public sector, was brought under control from late October when minimum lending rate was raised administratively by 2 % ,and the other element, bank lending to the private sector, was brought under control from mid-November when the corset (supplementary special deposits scheme) was reintroduced. This tightening of monetary policy then generated the external improvement and the revival of confidence.

This second interpretation can be summed up in three propositions corresponding to those above: (i) except for the initial fall in confidence which it validated, monetary policy created both the lack of confidence and the depreciation, and subsequently the revival of confidence and the external improvement; (ii) monetary policy was not at all passive in the sense that it produced a substantial change in the level of the key monetary aggregate, DCE; and (iii) the authorities' actions, even if well-meaning, were based on an incorrect understanding of the relationship between their own actions and the behaviour of the foreign exchange market, which led them to make serious mistakes.

It is not obvious how, or whether, we can decide between these two interpretations, for it is not clear what evidence would contribute decisive grounds for or against either view. The emphasis placed by the BIS on foreign holders of sterling balances and by the MBR on "overseas opinion" is put in question by the fact that, unlike official sterling balances, private foreign sterling balances fell only slightly during the second quarter of 1976 and rose by £ 212 m (6.6 %) and £ 49 m (1.4 %) in the third and fourth quarters respectively. Since there is no a priori reason to suppose that private foreign holders of sterling were less aware of the condition of the UK economy than official holders, this would appear to stress the role of political considerations rather than confidence in the movement of foreign holdings of sterling.[17] It also emphasises the extent to which the lack of confidence in sterling and the movement out of sterling were more a resident than a non-resident phenomenon. However it does not constitute evidence against the view that causation ran from confidence to DCE rather than vice-versa.

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[17] See *Zis* (1978, p. 353) for some discussion of this.

It might be possible to demonstrate that actual money balances were above desired levels in the second and third quarters, which could be interpreted as indicating an excess supply of sterling (excessive DCE) which could not be immediately disposed of via the balance of payments. But it could also be interpreted simply as indicating that financial institutions and other investors were temporarily holding back from purchasing gilt-edged securities in the hope of further price falls.[18]

On the other hand a recent paper produced within the Bank of England by *Hilliard* (1979) attempted to test the direction of causality between exchange flows and official gilt-edged sales, using daily data from May 1976 to March 1977, and obtained the result that there is causation in both directions between official gilt-edged sales and exchange flows. There are substantial conceptual problems involved in econometric causality tests of this kind (*Zellner*, 1979), but in any case the implications of this result for the choice between the two interpretations of 1976 are not clear, since even the most ardent exponent of the monetary approach would not deny the possibility of some causation going from the foreign exchange market to official gilt-edged sales (and thence to DCE) in the very short run — official gilt-edged policy was operated proximately in terms of prices rather than quantities, and the prices were not in general adjusted on a daily basis.

Any more explicit attempt to discriminate between the two interpretations by econometric means also comes up against the problem that the same variables — confidence (which is not directly observable but could be omitted), DCE, the balance of payments and the exchange rate — and no other variables are present in each hypothesis with the same expected coefficient values, since each hypothesis must be consistent with the banking system balance sheet identity (1) (see *Cobham*, 1980). The obvious way round this problem is to examine the components of DCE (public sector borrowing requirement, net sales of public sector debt to the private sector, and bank lending in sterling to private and overseas sectors) to see whether it could be argued that DCE was determined by government policy independently of the balance of payments, but as we have seen the evidence for this period regarding the second and third components can be construed in either way.[19]

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[18] MBR (1977 b, p. 24).

[19] This problem does not always occur: there are a number of other periods where it is much easier to argue that causation ran essentially from DCE to the balance of payments/exchange rate, e. g. 1972 - 73.

VI.

We started by rejecting three relatively simple explanations of what happened to sterling in 1976. We then set out the 'established' interpretation which emphasises the level of confidence and developed an alternative interpretation in line with MAB which emphasises DCE. Some details of these interpretations can be debated, but the difficulties of discriminating between the two at the overall level are such that we are obliged to conclude that it is not possible to say with certainty whether causation in 1976 ran primarily from confidence to the exchange rate and DCE, or from DCE to confidence and the exchange rate.

However it is possible to make an unequivocal recommendation for the conduct of future monetary policy. Excessive DCE may not have initiated the depreciation of sterling but it was at least a necessary condition. Thus advocates of either interpretation of 1976 can agree, and to some extent have agreed,[20] that the continuation of the crisis, at least, could have been avoided if more attention had been paid to DCE and/or to the 'gap' between DCE and the growth of M3, and if neither DCE nor the 'gap' had been allowed to grow in the way that they did. Interest rates would have risen but it is probable that, because the deterioration of confidence, the widening of the forward margin and the depreciation of sterling would have been contained, interest rates would not have had to rise as far as they ultimately did and a number of the crisis measures subsequently adopted could have been avoided.

Therefore, since the actual direction of causation in some past period does not constitute an argument for or against an attempt to impose a particular direction of causation in the future, the authorities should, in order to prevent a recurrence of events such as those of 1976, focus their attention on, and formulate targets for, DCE rather than £M3. Indeed it may be argued that the choice between controlling the money supply (on some definition) and controlling DCE is at least as important as the choice of the appropriate definition of reserve assets, of the right statutory or prudential reserve ratio or of the best method of selling

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[20] MBR (1977 b, p. 25) makes the point explicitly. It is also implicit in various comments made by the BIS, not always with specific reference to the UK — see BIS (1977, pp. 60, 61 and 70 - 71). See also the reasons for the choice of a DCE target given by the Governor of the Bank of England in January 1977, in *Richardson* (1977, p. 48).

gilt-edged, and that the latter should be evaluated in terms of their potential contribution to the control of DCE.

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Appendix

Some mention should be made of the view that the Bank of England and/or the Treasury actively promoted the sterling crisis in order to force a shift to the right in the policies of the Labour government and in particular to force the government to introduce massive public expenditure cuts.[21] *Fay* and *Young's* account of the events casts considerable doubt on this view, both directly and indirectly by detailing the genuine doubts and disagreements among both officials and ministers as to the causes of, and appropriate cures for, the crisis. The discussion in this paper also tends to refute this view, insofar as it has succeeded in adequately explaining the actions actually taken by the authorities in terms of theoretical weaknesses, without recourse to notions of conspiracy.

However *Fay* and *Young* also depict the US Treasury and Federal Reserve as being determined to use the crisis to force the British government to 'put its house in order' and therefore to abandon some of its 'socialist' policies. According to *Fay* and *Young* the US Treasury pursued these aims by setting an unusual six months' time limit for the repayment of any drawings on the standby credit arranged in June 1976, with the intention that the British government would be obliged to borrow from the IMF and therefore to submit its policies to Fund surveillance. The US authorities, it appears, had no concept of DCE, attributed great importance to the state of confidence in the foreign exchange market, and thought in terms of "pretty standard medicine, getting the budget into shape, cutting taxes, wage restraint and all the rest. We said the markets were waiting and hoping."[22]

There is nothing in this paper which is incompatible with *Fay and Young*'s account, mainly because the focus of attention has been elsewhere. Moreover their account tends to support indirectly the implication of this paper that the control of DCE, instead of being an insidious weapon wielded by that international capitalist policeman, the IMF, for the purpose of bringing left-leaning governments to heel, is in fact the best means for a government to prevent the development of a crisis and thereby to prevent 'outsiders' (the USA, the IMF or the City) from acquiring influence over its economic policies. The control of DCE, it should be said, does not in itself require cutbacks in public expenditure.

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[21] There is at least a hint of such a view in *Sedgemore* (1977, pp. 12 - 17).

[22] Mr. *William Simon*, US Treasury Secretary at the time, recalling what he said to *Messrs. Callaghan and Healey* in Puerto Rico in June 1976, quoted by *Fay* and *Young* (May 14, 1978, p. 35).

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Zusammenfassung

Inländische Kreditexpansion, Vertrauen und der Devisenmarkt: das englische Pfund im Jahre 1976

Dieser Beitrag unternimmt eine eingehende Untersuchung der Gründe für die im Jahre 1976 stattgefundenen großen Schwankungen des Wechselkurses des englischen Pfundes, von denen behaupt werden kann, daß sie nachhaltige und bedeutende Auswirkungen für die Entwicklung der britischen Wirtschaft gehabt haben. Drei mögliche Erklärungen — die Bewegungen in der Leistungsbilanz, frühere Wachstumsraten der Geldmenge und die Hervorhebung früherer Bewegungen des relativen Preisniveaus — werden als ungenau und übermäßig vereinfacht verworfen. Die „allgemein anerkannte" Deutung dieser Episode wird anschließend im Rahmen der monetären Zahlungsbilanztheorie dargestellt; diese Interpretation betont die Bedeutung sowie den relativ autonomen Charakter der Vertrauensschwankungen auf dem Devisenmarkt und auf dem Markt für Staatspapiere, wobei impliziert wird, daß durch „umgekehrte Kausalität" Zahlungsbilanz und Wechselkurs das Vertrauen beeinflussen und somit zu einer inländischen Kreditexpansion (IKE) führen. Einige der in der Literatur erschienenen Kritiken dieser Interpretation werden erörtert und die dem Verhalten der Träger der Geldpolitik zugrundeliegende Denkweise wird ausführlich behandelt. Insbesondere wird dargelegt, daß die Behörden im wesentlichen eine passive Einstellung zur eigenen Geldpolitik pflegten, sich eher auf Wachstum der Geldmenge als auf IKE konzentriert haben und große Bedeutung den Ankündigungseffekten und sonstigen das Vertrauen beeinflussenden Faktoren beigemessen haben. Sodann wird eine alternative Interpretation entwickelt, wonach Vertrauen — ausgenommen auf sehr kurze Sicht — durch die Geldpolitik (IKE) bestimmt wird, wobei ein Einfluß vornehmlich von der IKE auf Zahlungsbilanz/Wechselkurs ausgeübt wird. Es folgt eine Erörterung der Schwierigkeiten, die bei Tests zur Unterscheidung der beiden Interpretationen auftreten, wobei festgestellt wird, daß kein eindeutiger Schluß gezogen werden kann. Es wird jedoch gefolgert, daß künftige Schwankungen des Pfundkurses durch eine angemessene Steuerung der IKE vermieden werden können, und daß daher die Geldpolitik sich eher auf dieses Aggregat als auf Wachstum der Geldmenge konzentrieren sollte. Abschließend wird in einem Anhang die Rolle untersucht, die einige politische Faktoren in dieser Episode gespielt haben.

Summary

Domestic Credit Expansion, Confidence and the Foreign Exchange Market: Sterling in 1976

This paper examines in detail the reasons for the wide fluctuations in the sterling exchange rate during 1976, fluctuations which can be argued to have had lasting and significant effects on the course of the UK economy. Three possible explanations, emphasising movements in the current account, prior monetary growth rates and prior movements in relative price levels, are

rejected as inaccurate and oversimple. The 'established' interpretation of the episode is then set out within the framework of the monetary approach to the balance of payments; this interpretation emphasises the importance and relative autonomy of fluctuations in confidence, in both the foreign exchange and the government securities markets, and implies 'reverse causation' from the balance of payments/exchange rate via confidence to domestic credit expansion (DCE). Some criticisms of this interpretation in the literature are discussed, and the thinking underlying the behaviour of the monetary authorities is examined in some detail: in particular the authorities are shown to have taken an essentially passive view of their own monetary policy, to have focussed on money supply growth rather than DCE and to have attached great importance to announcement effects and other factors affecting confidence. An alternative interpretation is then developed which regards confidence as determined, except in the very short run, by monetary policy (DCE) and which views causation as going primarily from DCE to the balance of payments/exchange rate. The difficulties involved in tests to discriminate between these two interpretations are discussed and it is argued that no definite conclusion can be drawn. However it is concluded that future sterling fluctuations *can* be prevented by the appropriate control of DCE, and that monetary policy should therefore focus on this aggregate rather than on the growth of the money supply. Finally the role of some political factors in the episode is considered in an Appendix.

Résumé

Expansion du crédit domestique, confiance et marché des changes: la Livre britannique en l'année 1976

La présente étude examine en profondeur les motifs des fortes fluctuations de cours de la Livre britannique au cours de l'année 1976, fluctuations dont on peut penser qu'elles eurent des effets importants et persistants sur le développement de l'économie britannique. Trois explications possibles — les mouvements au sein de la balance des opérations courantes, d'antérieurs taux d'expansion de la masse monétaire et la mise en évidence de mouvements antérieurs du niveau relatif des prix — sont rejetées comme étant inexactes et excessivement simplifiées. L'interprétation "généralement admise" de cet épisode est ensuite exposée dans le contexte de la théorie monétaire de la balance des paiements; cette interprétation souligne l'importance ainsi que la nature relativement autonome des variations de confiance sur les marchés des changes et des fonds d'Etat, ce qui implique que "par causalité inverse" la balance des paiements et le taux de change influent sur la confiance et conduisent ainsi à une expansion du crédit domestique (ECD). Les critiques que certains auteurs adressent à cette interprétation sont discutées et la mentalité fondant le comportement des responsables de la politique monétaire est largement exposée. L'on explique notamment que les autorités ont généralement eu une attitude passive à l'égard de leur propre politique monétaire, se sont plutôt concentrés sur la croissance de la masse monétaire que sur l'ECD et ont accordé une grande importance aux

effets publicitaires et aux autres facteurs influançant la confiance. L'on développe ensuite une interprétation alternative où la confiance — sauf à très courte vue — est déterminée par une politique monétaire (ECD) dans laquelle l'influence est principalement exercée par l'ECD sur la balance des payements et le taux de change. L'on examine alors les difficultés que soulèvent les tests pour faire la distinction entre les deux interprétations pour devoir admettre l'impossibilité d'en tirer une conclusion évidente. L'on en déduit néanmoins qu'une utilisation appropriée de l'ECD serait apte à éviter à l'avenir les fluctuations du cours de la Livre et que dès lors la politique monétaire devrait se concentrer plutôt sur cet agrégat que sur l'expansion de la masse monétaire. Dans une annexe enfin, l'on étudie le rôle joué pendant cette période par certains facteurs politiques.