

File- Monetary Policy Issues-Exchange Rate
Intervention – Part E

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FROM: N P WILLIAMS
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SIR G LITTLER



cc: Mr Scholar
Mr Peretz (or)
Mr Grice
Miss O'Mara
Mr Brooks
Mr Polin

INVESTMENT OF THE RESERVES

1. You are to hold your six-monthly review of the investment of the reserves on 28 July at 2.30 pm.

2. Items for the agenda re:-

- (i) Measuring the probability of intervention and reserves management) covered in the first attachment)
- (ii) Review of developments since January) all covered in the Bank's main paper,)
- (iii) The currency decision) just arrived)
- (iv) The maturity decision)
- (v) Futures trading) all covered in the)
- (vi) Gold) second attachment)
- (vii) Protecting the EEA)

3. We have only just received the Bank's main paper and will supply you with comments as soon as possible. The attached notes set out the background on the other items.

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PROFITABILITY OF INTERVENTION AND RESERVES MANAGEMENT

1. The Bank has produced a paper in response to your request at the last 6-monthly meeting that we need to develop better measures of the profitability of intervention in the light of public and Ministerial interest in the subject.

2. The Bank's paper describes the approach in some detail. The building blocks can be summarised as follows:-

(i) the calculations are based on a sterling balance sheet of the EEA, comprising foreign currency assets (spot and forward), matched by both HMG and ECS foreign currency borrowing and sterling liabilities as the counterpart of the EEA's surplus of foreign currency assets over liabilities;

(ii) gold is excluded from the analysis;

(iii) the balance sheet is revalued at the end of each month at current market prices and exchange rates;

(iv) the capital gain on the reserves during a month resulting from changes in market prices and exchange rates would be calculated as the difference between successive end-month valuations, after allowing for net intervention during the month; and

(v) the returns are calculated in sterling by taking account of capital gains and the interest accruing on assets and liabilities.

3. The Bank proposes that the total sterling return on the EEA be assessed as reflecting decisions in four areas, although in practice they might be interrelated:-

(i) the total switch to date between sterling and foreign currencies (the intervention decision);

(ii) the distribution across currencies of net foreign currency assets (the currency mix decision);

(iii) the net exposure to fixed income markets in each currency (the strategic interest rate decision); and

(iv) active versus passive management in each category of marketable asset (the active investment management decision).

The Bank have since told us that they propose a fifth component the cost of holding liquid assets. This might be assessed as the difference between US Treasury bill yields and LIBID.

4. The total sterling return is then allocated among these categories. The Bank have made considerable progress in assessing interest rate returns - (iii) and (iv) above - which arise from strategic interest rate decisions and active investment management decisions. (The cost of holding liquid assets would be a further sub-division of the interest rate returns.) The key remaining question is how the currency return should be split between returns from intervention and currency mix decisions. The Bank argue that intervention should break even if sterling is "stable", after adjusting for interest differentials. To elaborate with an illustration, if the neutral disposition of the reserves is 100% dollars and the uncovered UK/US differential is, say, 1% in favour of sterling, then "stability" implies a 1% depreciation of sterling against the dollar over the next year. A change in the sterling/dollar rate of other than a 1% depreciation would produce intervention gains or losses. The remaining part of the currency return would be, by subtraction, the currency mix return. (The figuring above is illustrative - the Bank propose, sensibly in our view, that the neutral position be diversified as in para 7 (iii).)

Appendix

Timing

5. The Bank's current computer systems are incapable of further development to perform these calculations. However they will ensure a current review of computer requirements will take on board the requirements for the measurement of the profitability. Nevertheless it will be a considerable time before the review's recommendations can be implemented.

6. In the meantime, the Bank envisage two more approximate approaches. The first assumes that changes in net currency assets between one month and another take place at the average of the exchange rates at the two end-months. This assumption, while clearly only approximate, should not bias the results. The Bank propose to present calculations on this basis in the main paper on the investment of the reserves. Calculations using a second approach, which is based on the same theoretical approach but involves rather less approximation, will be available in a month or two.

7. Issues to be discussed:-

(i) Overall approach: This builds on discussions with the Bank and seems to be on the right lines. We shall be better placed to assess this work when we see the Bank's calculations.

(ii) Currency denomination: Returns must surely be calculated in sterling as the Bank suggest.

(iii) Neutrality: It is necessary to assume a neutral disposition of net currency assets from which changes in the currency mix can be assessed. The Bank suggest that either the dollar should be viewed as the neutral currency or, preferably, a mix 40% dollar, 40% DM bloc and 20% yen, close to the current disposition. This is a key element in the analysis. While its does not affect the total return, it does affect the allocation of the total currency return and influences decisions on the appropriate currency mix in which we hold the reserves. We believe that the 40: 40: 20 mix is much to be preferred to 100% dollar. If you agree, we can stop the Bank doing any further work on the 100% dollar assumption. MG2 will be giving more thought to the precise proportions we use but we do not want to hold the Bank up while we ponder these refinements. We shall be able to make adjustments to the neutrality assumption, if we want to, in due course.

This does not seem sensible

(iv) Exchange rate "stability" You might like to ask the Bank to elaborate on the concept of exchange rate "stability", which adjusts for interest rate differentials. It would be interesting to know how smoothing intervention around the "stable" trend of the exchange rate would be taken into account in their analysis.

(v) Starting point: The Bank now have calculations of the profitability of intervention and reserves management going back to June 1985. The Bank's computer systems are not at present capable of adopting an earlier base date - calculations on this basis for an earlier period would involve some expense. In most analyses, it would make sense to adopt Plaza as the starting point. It would be for consideration whether public questions about profitability for earlier periods should reply on the article in the BEQB, September 1983.

(vi) Computer enhancement: You might ask about the timescale of the computer enhancement described in paragraph 16 of the Bank's paper.

FUTURES TRADING

8. The Bank is proposing to begin trading futures in the Japanese Government Bond (JGB) market on behalf of the EEA.

9. In certain market conditions, lack of liquidity in cash markets can limit the Bank's ability to change their position in a bond market quickly. This problem is particularly marked in the JGB market where 95% of trading is in a single benchmark issue, while the majority of other issues, in which the EEA's holdings are concentrated, offer better returns but very little liquidity. However, the JGB futures market has the largest turnover of any futures contract in the world. Trading in JGB futures would allow the Bank to adjust the EEA's position quickly, in particular by hedging the EEA's yen bond portfolio through sales of futures if yields should again - as last Spring - drop to unsustainable levels. The World Bank and the Bank of Finland are known to participate in futures markets already.

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10. The Bank say their computer systems can analyse market and interest rate exposures resulting from futures contracts, and that futures trading would be subject to the same monitoring and management control as trading in the cash bond market.

11. The proposal to trade futures seems sensible provided it is confined to hedging and can be shown over time to be profitable. It would be useful to know what level of activity the Bank envisage - presumably they would begin on a small scale and thereby gain experience of operating in the futures market. It would also be worth exploring whether they have it in mind to extend futures trading to other contracts and to begin trading in options in due course. The six-monthly paper on the investment of the reserves would be a focus for reviewing experience in trading futures and considering the case for an extension of such hedging activities. The Bank might also be asked about resource implications.

GOLD

12. A Treasury suggestion is that, since we are generally bearish about the outlook for the gold price, an obvious strategy would be to write call options against some small part of our gold holdings. There would obviously be a limit to the amount of business of this kind that we could undertake, but it could be a useful additional source of income.

13. The Bank argue that to write gold options would be to act in an entirely speculative capacity. Unless we are very confident of our bearish view on the gold price, a decision to write naked gold options is little different from a decision to sell gold outright, which the Bank have argued against. Our policy on holding gold is under discussion in a wider context, and we await the Chancellor's response to your submission of 21 July. From this discussion we would like agreement to look at this idea further.

14. However, the Bank are seeking a decision on the renewal of the existing annual limit of £300 million on gold deposit business. Although the existing limit is not fully utilised, this business is profitable (earnings of £250,000 so far this year,

compared with £330,000 in the whole of 1987) and the Bank see the scope for modest further growth as the number of active market participants in London increases. We are content with this proposal.

PROTECTING THE EEA

15. The Bank noted in a letter of 4 May from Loehnis to Sir Gordon Borrie that the reference of the KIO's acquisition of BP shares to the MMC had possible implications for the EEA's operations, in particular whether the activity of managing a country's reserves constituted a business enterprise and, if so, whether this might jeopardise the protection of the EEA by sovereign immunity. On being drawn into the correspondence, Juliet Wheldon suggested that the Bank might wish to take advice in the US (and by implication elsewhere) on whether EEA assets are held in a manner which allows the EEA to take maximum advantage of sovereign immunity. The Bank propose to follow this up. This will involve legal fees. Nevertheless, it seems a sensible step in the circumstances.

GERMAN WITHHOLDING TAX

16. It may just be worth noting that the proposal to impose a 10% withholding tax in Germany has received Parliamentary approval. Tietmeyer wrote to you on 18 May confirming the tax exempt status of the EEA. Tax will initially be withheld at source and refunded on application to the Federal Finance Officer.

MEASUREMENT OF THE PROFITABILITY OF RESERVES MANAGEMENT

1. At the Bank/HMT meeting on reserves management in January it was agreed that we should work towards developing better measures of the profitability of reserves management. This paper describes the methodology we aim to introduce and progress to date.
2. The overall objective is to assess the total sterling return earned on the EEA and to divide that total into the contribution made from the different types of decisions involved.
3. The total sterling return on the EEA is the result of a set of combined decisions, of which the most important are;
 - (i) the total switch to date between sterling and foreign currencies (the intervention decision);
 - (ii) the distribution across currencies of net foreign currency assets (the currency mix decision);
 - (iii) the net exposure to fixed income markets in each currency (the strategic interest rate decisions); and
 - (iv) active versus passive management in each category of marketable asset (active investment management decisions).
4. From time to time there may be constraints which restrict our ability to change the EEA's stance in any of these areas of decision, and on occasions we may consider a strategy which involves a simultaneous change in stance in more than one area. However, these four areas for decision are in practice separable - in the sense that the EEA's stance in each area can be changed while leaving its stance in the others unchanged - and separation will produce a better understanding of the return produced from management of the reserves. It is thus appropriate to allocate the total return on the reserves into components corresponding to decisions in each area.

5. The decision in each area encompasses alterations throughout the period under review. For example, the return to currency mix relates to any changes made during the period as well as to the opening position. Thus an analysis of return must include information on flows as well as initial balances.

6. The first stage in the analysis is the production of an overall sterling return on the foreign currency reserves. The calculation requires taking account of the EEA's foreign currency assets (spot and forward), the foreign currency liabilities arising from government and ECS borrowing, and sterling liabilities which are the counterpart to the EEA's surplus of foreign currency assets over liabilities. This produces a balance sheet with foreign currency assets matched by foreign currency and sterling liabilities.

7. This is the simpler approach. A more complex alternative would be to include, as assets, the sterling claims which the EEA has on the nationalised industries as a result of ECS borrowing. The sterling assets would be matched by additional sterling liabilities. This would allow assessment of the cost to the EEA of any sterling subsidy provided to future ECS borrowers. As at present there is no subsidy and as we expect little such borrowing, it seems preferable to work with the simpler balance sheet which excludes sterling claims on nationalised industries.

8. It would also be possible to extend the analysis beyond the currency reserves, to include the EEA's holding of gold, matched again by a sterling liability equivalent to the gold's current market value. This extension of the balance sheet would produce large month to month profit and loss figures as the gold price in sterling terms rose or fell. While in theory these profits and losses are part of the overall return on the reserves, in practice we would immediately want to eliminate them from the analysis as, with virtually no activity in gold, these figures do not help in the assessment of reserves management decisions.

9. We intend to calculate the total return monthly. The basic calculation is to value the EEA's total assets at the end of each month at current market prices and exchange rates. This requires the valuation of every investment at a current market price and then the conversion of the total of these valuations in each currency to sterling at current exchange rates. After allowing for flows occurring during the month, a comparison between the end month valuation and the valuation at the end of the previous month produces the capital gain on the reserves resulting from changes in market prices or exchange rates (or merely the passage of time). Interest accruing on assets and liabilities needs also to be taken into account. Interest on the sterling liabilities in the balance sheet cannot be a real figure; rather it will be based on a sterling commercial bill rate of interest.

10. The next stage in the analysis is to divide this total into the four components discussed in paragraph 3 above. Splitting out the interest rate returns - on strategic interest rate decisions and on active investment management decisions - is straight-forward. We already assess the return from active management by comparing the returns on the actual investment portfolios with the returns earned on theoretical neutral investment portfolios. And we are agreed that the correct basis of assessment of strategic interest rate decisions is a comparison of the return on the EEA's fixed interest currency assets with that on the UK Government and ECS foreign currency fixed rate liabilities. The first of these is available as part of the analysis of the return to active investment management - it is effectively the return on the neutral investment portfolios. And more recently, with the creation of a computer program for the liabilities, it has become possible to compile the return on (cost of) the foreign currency liabilities. The difference between the two, after allowance for any net difference in size of assets and liabilities, is the return to strategic interest rate decisions.

11. Once the two investment returns are stripped out of the total return, what remains is the return to currency decisions. It is the return which would result if the EEA's investments were to be managed passively and if foreign currency liabilities were to be

continuously and fully hedged. The key question is how the currency return should be split between returns from intervention and currency mix decisions.

12. From a theoretical point of view, intervention should make neither profit nor loss if sterling is "stable". Such profit or losses which occur when sterling is stable should be because the net currency assets are allocated between currencies in a non-neutral way. Converting the concept of stability into formal rules is however not straightforward. One problem is that it needs to take account of interest differentials between sterling and other currencies (as reflected in interest earned on net currency assets and deemed to be paid on sterling liabilities).

13. One simple approach, which mirrors the way decisions are at times made, would be to regard the dollar as the neutral currency against which sterling is bought or sold. Thus with this approach "stability" would be regarded as stability of the sterling/dollar exchange rate (interest adjusted), and any part of the net currency assets not held in dollars would be a non-neutral currency diversification. Changes in the sterling/dollar exchange rate would produce intervention gains or losses.

14. This approach would provide some insight into reserve management decisions; however its drawback is that it does not appear to reflect the currency diversification decisions we have taken. Revealed preference would suggest that we regard a neutral disposition of the net currency assets to be a mix of dollars, DM bloc currencies and yen - and roughly in the ratio of 40:40:20.

15. The precise numbers we adopt for the neutral mix of net currency assets are bound to be somewhat arbitrary. It is however necessary, if we are to carry through the analysis, to reach agreement on what they should be. It should be noted that this decision does not affect the calculation of the total return on the reserves nor of the total return to currency decisions; it only affects the calculation of the split between the part identified as resulting from intervention decisions and the part identified as resulting from currency mix decisions.

Nevertheless although the decision does not affect the total return, it is important, as once a choice has been made it will begin to affect the decisions which are made.

16. While we have made a lot of progress on the interest rate side over recent years, there has been little progress on currencies. When an investment is bought or sold the counterpart is a change in cash holdings in the same currency. The computer programs that have been developed for the EEA investment (and borrowing) operations thus have not needed to include currency transactions. The currency transactions which lead to intervention or currency mix returns are only at present analysed within the overall foreign exchange computer system. This system was written several years ago and has reached the state where further development is no longer possible. A review of the system is currently being carried out with the aim of defining the requirements for a new system. We will ensure that this covers the requirements on measurement of the profitability of reserves management. However, it will be some considerable time before proposals made in the review can be implemented. In the meantime we will need to adopt an alternative more approximate approach. We are in fact considering two interim solutions - one which is available already, but which involves (on the currency side) a significant degree of approximation; and a second which will take a month or two to complete, but which will involve rather less approximation. The difference between the two is not in the theory but mainly in how much data is collected on actual currency transactions.

17. As noted, information based on the first of these two interim approaches is already available. This information will be provided shortly in a further paper which will describe developments since the last reserves management meeting. The model which produces this information is fairly simple. It assumes that any change in the net currency assets between one end month and another takes place at the average of the exchange rates at the two end months. This assumption, while clearly only approximate, should not lead to any bias in the results. The model calculates the total return on the net currency assets resulting from exchange rate movements. It also splits this

total return into an intervention return and a currency mix return, by calculating the return which would have been earned each month if the starting position of net assets, and any additional net assets acquired during the period, had been distributed in a neutral way. The interest returns from holding net assets in each currency (and being short sterling) are taken into account. The results are calculated on the two alternative neutrality assumptions discussed above, namely 100% dollars, and 40% dollars, 40% DM bloc, 20% Yen.

Bank of England
6 July 1988.

THE EEA'S RISK POSITIONS: SIX MONTHS TO END-JUNE 1988

A. INTRODUCTION

1. This paper analyses developments in EEA's currency and interest rate exposures over the last six months, and presents figures for the returns made on these exposures. It discusses likely developments in the period ahead, and makes the following recommendations for the next six months:

(Currency Exposures - paragraphs 24-27)

The recommendations on currency can be set out in the following table:

	\$	DM	Yen
Neutral currency composition	40%	40%	20%
Normal range	30-50%	30-50%	15-25%
End June position	37%	46%	15%

Recommendations:

go short maximum	1.60-	120-
start going short	1.70	130
start going long	1.80	140
go long maximum	1.90+	150+
current position	1.85	132

Thus (a) if the DM weakened below 1.90, the existing long DM position should be increased towards its maximum; while if the DM strengthened towards 1.70, the long position should be reduced.

(b) if the Yen weakened from present levels, the existing short position should be reduced, and replaced by a long position at levels above 140; while if the Yen strengthened there should be little change in Yen holdings until the Yen moved towards 120;

(c) finally, as the DM strengthens from its present rate against the Yen of 71 1/2, the short Yen/long DM position should be reduced, and reversed at cross rates above 75.

(Interest Rate Exposures - paragraphs 51 - 53)

(d) begin to reduce the short position in the US market as yields rise from today's levels and consider the establishment of a long position in the US market at 4-year yields above 9 1/2%, 100 basis points above current levels;

(e) purchase DM bloc securities at 10-year yields above 6 3/4%, and make sales at yields below 6 1/4%;

(f) make sales of Yen securities at 10-year yields below 5 1/4%, and purchases at yields above 6%.

2. The paper is arranged as follows:

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B. RESERVE FLOWS

3. There was a true underlying inflow into the reserves of \$2.8 bn in the first half of 1988 (after \$12.9 bn in the previous six months). The rise was concentrated in March (\$2.2bn) and May (\$0.8 bn) when sterling was under upward pressure.

4. Total currency reserves (spot and forward) rose by \$1.3 bn, when measured at March 1988 parities, with no change in holdings of gold and SDRs. Holdings of DM bloc currencies (principally DM, but also including Dutch guilders, ECU and French francs) rose substantially more, by \$4.3bn, and Yen holdings rose by \$2 bn. Reflecting this switch, holdings of US dollars fell by \$4.7 bn; in order to maintain liquidity, almost all of this fall was taken on the forward book.

5. There were substantial early repayments of expensive US dollar floating rate debt, and only modest new borrowings. Total repayments of new borrowing amounted to \$1.7 bn over the period.

6. The foregoing figures are compiled using the conventional reserves methodology, which is useful principally in considering the size and composition of flows. For the purpose of calculating the EEA's exposures, and the return on those exposures, it is however preferable to include the EEA's liabilities, and to value securities and currencies at market value. In subsequent sections of this note all figures are on this basis.

Table 1

THE RESERVES (MARCH 1988 PARITIES)		(\$ bn)	
	Dec 1987	June 1988	Change
<u>Spot currency reserves</u>			
US dollars	22.6	22.0	- 0.6
DM bloc	9.4	12.1	+ 2.7
(of which, DM	7.6	8.3	+0.7)
Yen	2.1	1.9	- 0.2
Can dollar	<u>0.7</u>	<u>0.6</u>	<u>- 0.1</u>
	34.8	36.6	+ 1.8
<u>Forward currency reserves</u>			
US dollars	3.8	- 0.5	- 4.3
DM bloc	2.6	4.2	+ 1.6
(of which, DM	2.6	3.9	+1.3)
Yen	0.2	2.4	+ 2.2
Canadian dollar	<u>0</u>	<u>0</u>	<u>0</u>
	<u>6.6</u>	<u>6.1</u>	<u>- 0.5</u>
Total currency reserves	41.4	42.7	+ 1.3
Gold	8.1	8.1	0
SDR (spot and forward)	<u>3.3</u>	<u>3.3</u>	<u>0</u>
Total reserves	<u>52.8</u>	<u>54.1</u>	<u>+ 1.3</u>

Note (1) These figures are compiled on the same basis as the reserves announcement figures. Securities are at historic book costs; holdings are on a settled basis; and parity exchange rates are used (DM 1.68 and Yen 128 against the US dollar).

(2) Annex tables A and B give full details of reserve holdings on the above basis.

LIABILITIES (MARCH 1988 PARITIES)		(\$ bn)	
	Dec 1987	June 1988	Change
US dollars	15.1	13.3	- 1.7
DM bloc	3.3	3.3	0
(of which, DM	2.8	2.8	0)
Yen	0.3	0.3	0
Canadian dollar	<u>0.5</u>	<u>0.5</u>	<u>0</u>
	19.2	17.4	- 1.7

C. CURRENCY EXPOSURES

7. The following table sets out the EEA's net holdings of each major currency.

<u>Table 2: Net currency positions</u>		(\$ bn)	
	June 1987	December 1987	June 1988
US dollar	5.3 (65%)	12.3 (52%)	9.4 (37%)
DM bloc	2.2 (27%)	8.9 (38%)	11.6 (46%)
Yen	0.7 (9%)	2.0 (8%)	3.8 (15%)
Canadian dollar	<u>- 0.1</u> (-1%)	<u>0.5</u> (2%)	<u>0.4</u> (1%)
Total	8.1	23.7	25.1

Note: The major exchange rates used for the most recent figures are DM 1.84, Yen 132.5, Can\$ 1.21.

8. The current position represents a substantial switch, compared with the end of last year, into the DM bloc and Yen out of US dollars. Although there were a large number of other factors influencing the outcome, this change in allocation had two principal causes:

- intervention in the Spring was, at the Chancellor's request, principally into DM and other DM bloc currencies

- there was a sizeable and deliberate switch out of US dollars into Yen.

9. There were two episodes of heavy intervention, early in March and again in May. The total effect was to add about \$3 bn to the EEA's net holdings of DM bloc assets, with significant purchases of French francs and ECUs as well as DM. (The EEA now owns \$1.9 bn of French francs, and \$1.5 bn of ECUs).

10. The principal switches into Yen were early in this year (about \$ 1/2 bn at just under Yen 130), and again in June (\$0.9 bn at Yen 128).

11. At our previous meeting, we agreed to switch up to \$2 bn into Yen and DM, as political considerations allowed, and so long as the dollar remained relatively strong. In the event, political factors circumscribed our freedom of action to a very considerable extent, both (until rather recently) in limiting our ability to diversify out of the dollar, and in obliging us to build up our holdings of DM bloc currencies at a time not entirely of our choosing. Moreover, the US dollar has strengthened to a remarkable extent against the DM (Chart 1), and has also outperformed the Yen (Chart 2). It is clear that the EEA's switch into DM, and the early portion of its switch into Yen, could - with hindsight - have been better timed; and that the DM acquisitions have performed worse than the Yen.

D. RETURNS ON CURRENCY EXPOSURES

12. While it is instructive to evaluate major past decisions in this case-by-case way, there is also advantage in analysing the return on the EEA's net currency exposures as a whole, in the way set out in our accompanying paper. The first line of the following table gives the return in sterling from the EEA's currency positions, matched by short positions in sterling. It is assumed that the EEA earns short interest rates on currency assets, and has to pay a comparable sterling rate on its sterling short position.

Table 3: The Return on Currency Exposures: 1988 (£ mn)

	<u>Q1</u>	<u>Q2</u>	<u>Total so far</u>
1. Total return	- 410	+ 450	+ 40
<u>On diversified - 40,40,20 - basis</u>			
2. Intervention component	- 470	+ 450	- 20
3. Currency mix component	+ 60	0	+ 60.
<u>100% dollar basis</u>			
4 Intervention components	- 170	+1260	+ 1090
5. Currency mix components	- 240 -	810	- 1050