

CALCULATING THE COST OF "BLACK WEDNESDAY"

2 August 1993

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This note discusses ways of calculating the cost of "Black Wednesday", and revises my note which we discussed at your meeting on 29 July.

2. The simplest starting point is the figures that the Bank provide for the "return to intervention" in their six monthly and monthly management returns. These add together:

- the extent to which the sterling value of the net reserves has increased/decreased as a result of the appreciation/depreciation against sterling of the currencies in which the reserves are held
- the difference between interest earned on the reserves and the sterling interest cost of financing the reserves

These calculations:

- assume the net reserves are held in line with the "neutral portfolio", ie. 40 per cent in deutschemark, 40 per cent in dollars, and 20 per cent in yen;

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- make stylised assumptions about the foreign currency interest returns on the reserves and about the sterling interest rate cost of borrowing to finance the reserves.

Figures for the return to intervention are shown below (taken from the February six monthly and May monthly Bank returns).

Return to intervention fmn

1986	1987	1988	1989	1990	1991	1992H1	Q3	Q4	1993Q1
-140	-480	-761	542	-1944	- 89	-553	-246	-1013	-115

3. Returns to intervention have been negative in most years; sterling interest rates have been higher than foreign interest rates, and this has not been offset by a correspondingly large depreciation of sterling.

4. The return to intervention was negative in the second half of 1992, in spite of the large depreciation of sterling. This is of course because when most of the depreciation occurred, the net reserves were negative: a sterling depreciation makes a positive contribution to the return when reserves are positive, but a negative contribution when reserves are negative.

5. In general it is correct when analysing the costs/benefits of intervention policy to calculate the return assuming neutral strategic currency positions. Gains/losses resulting from departures from neutral positions should be credited/debited to reserve investment policy not to intervention policy. The Bank's returns do, of course, also show the return to the currency mix - ie. the return due to differences between the actual portfolio and neutral positions.

6. However the usual distinction between the effects of intervention and the effects of reserve investment policy breaks down for the period after Black Wednesday, because the massive

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intervention on that day caused violent non-neutrality of the net reserve positions. It was only during January that the composition of the net reserves was brought back in line with strategy. Thus the returns to the currency mix for the period from Black Wednesday to some time in January ought to be included in the costs of Black Wednesday.

7. Because we were long of dollars and short of deutschemark in the months immediately after Black Wednesday, we benefited from the appreciation of the dollar against the deutschemark in this period. The Bank's monthly return for May showed a total positive return to the currency mix in the second half of 1992 and January 1993 of £1046 million. Added to the negative return to intervention in the second half of 1992, this would give a net loss of approximately £200 million.

8. There are two important reasons why this calculation of the loss is very different from the figures generally quoted in the press and elsewhere. The first point involves distinguishing between the loss incurred and a potential profit foregone. At the end of August we had net currency reserves of some \$17½ billion. If we had still had those net reserves at the time sterling depreciated we would have made a large profit of - say - \$2 billion. The intervention on Black Wednesday threw away this enormous capital gain. The estimate in the previous paragraph covers only one of these two components of the cost of Black Wednesday: it does not include the absence of this profit-that-might-have-been, only the actual loss on the negative net reserve position that we had reached by the end of Black Wednesday.

9. The second point relates to the limitations of the figures in the Bank's management returns. The estimated return to intervention for September, say, is calculated roughly as the average of the end August and end September reserve positions times a rate of return which takes account of sterling's average depreciation during the month (plus relative interest rates).

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10. It is clear that for September this must have produced a very misleading estimate: the reserves position as of close on Black Wednesday was much closer to the end September position than to the average of the end August and end September positions. The estimate for October must also have been very misleading. Summing the September and October estimates may produce a total that is less misleading than the two individual monthly figures, but the result is hardly likely to be at all accurate.

11. Thus we cannot put any weight on figures taken from the returns already supplied by the Bank. We need to conduct a separate exercise. One approach would be to use the basic Bank methodology but to refine it to avoid the more serious inaccuracies caused by the averaging of start- and end-period positions.

12. As the net reserve position did not change very much in the period immediately after Black Wednesday, it might be acceptably accurate to calculate the return to intervention and the return to the currency mix in the period between Black Wednesday and the end of September on the basis of:

- net reserves as of close on Black Wednesday
- exchange rate movements between close Black Wednesday and the end of September
- average interest rates in the period between Black Wednesday and the end of September.

13. Thereafter something like the methodology used in the Bank's returns might be acceptable, but to increase accuracy the averaging should be applied to shorter periods - to weeks rather than whole months, perhaps.

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14. The cut off points for the calculation should be:

- (i) for the return to the currency mix, the point at which currency holdings returned to positions consistent with strategy
- (ii) for the return to intervention, probably the point at which net reserves return to zero, as this was the point at which the exposure to loss as a result of sterling depreciation was eliminated.

15. To compute the total costs of Black Wednesday we will also have to calculate the profit-that-might-have-been-if-we-had-still-had-positive-net-reserves. This will involve computing the return to intervention that we would have made - over the same period as for (ii) above - if net reserves had remained as they were at the beginning of Black Wednesday. We would also want to make some allowances for currency mix returns in this case, to take account of the mix having already been pushed away from the strategy by intervention before Black Wednesday.

16. When people talk about the costs of Black Wednesday, they are often thinking of the costs of the period that led up to Black Wednesday as well; so we will want to extend these calculations by going back a little way before Black Wednesday - say to mid August when the first incidents of fairly heavy intervention occurred. This period includes the borrowing under the "expensive" syndicated credit; the extra cost of this borrowing, compared with the stylised assumption about interest rates used in the Bank's calculations, could be added to the calculation of total cost.

17. It will also be useful to do a longer term calculation to estimate the total loss incurred from the period when positive net reserves started to build up in the late 1980s to the point at which the recent negative net reserve position was unwound. This calculation could not be described as the "cost of Black Wednesday"; but it might be loosely thought of as reflecting the

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cost of entanglement with the deutschemark. This cost will be bigger than the cost of Black Wednesday.

18. We agreed that we would also carry out a slightly more detailed calculation which would take direct account of the cost of the main components of the borrowing used to finance Black Wednesday's intervention. These components are:

- VSTF borrowing
- the syndicated credit
- DM Eurobond issue
- \$ Eurobond issue

For each of these forms of borrowing we should be able to calculate what it actually cost between Black Wednesday (or some earlier date) and either the dates at which it was repaid (in the case of the VSTF borrowing) or the cut-off point for the calculation (which I suggest should again be the date at which we ceased to have negative net reserves). The estimate of the total cost (including the foregone profit-that-might-have-been) will also have to take account of movements in the reserves net of other liabilities (RNOL). The actual return on these reserves - computed for RNOL in each currency - will be compared with the return that would have been in the counterfactual case of no changes in RNOL: stylised interest rate assumptions will have to be used for this part of the calculation. The distinction between the return to intervention and the return to the currency mix is not really possible to make with this approach. I think it should, however, be possible to distinguish between the capital loss on net borrowing and the foregone profit-that-might-have-been.

19. We will take these calculations forward during August.