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

Reference MG-MAMC/D/0002/001

File begins 11/09/1987 File ends 23/12/1987

Pages 1-19



FROM: A C S ALLAN

DATE: 11 SEPTEMBER 1987

MAMC: D3

MR KELLY

cc PS/Economic Secretary Sir P Middleton Sir T Burns Mr Cassell Mr Peretz Mr Cropper

PROFITABILITY OF INTERVENTION

The Chancellor would be grateful if you could let him have more upto-date figures for the profitability of intervention, giving both the true figures, and what might be deduced from the published figures for reserve changes.

2. The earlier calculations you provided in the Spring were based on the increase in reserves then having matched the fall in reserves last autumn. The Chancellor would be grateful for advice on how the calculations should best be done now that we have a large net reserve increase.

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book for on \$5 sought in Made April.

A C S ALLAN

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FROM: J W GRICE

DATE: 15 September 1987

MR RICHARDSON

D3

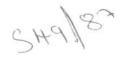
cc Mr Peretz Mr C W Kelly Ms Goodman

Mr Brook
Ms Bronk
Mr Nelson
File: MAMC R6

FUNDING POLICY: THE RESERVES

I read your minute to Mr Kelly of 14 September with interest; similarly, Mr Kelly's minute of 3 September to which it refers.

- 2. If I understand your proposal for the reserve assumptions over the rest of the financial year, this would involve a significant revision of what was assumed in the July forecast. We assumed then that half of the existing intervention would be reversed by the end of the financial year. As I understand it, the Kelly/Richardson proposal would now be for zero net intervention over the rest of the year; that is, no reversal of the existing intervention. This would indeed be a substantial change in our view, and I am not clear that developments since the July forecast would justify it.
- 3. The July assumption was made against the background of an ambitious target for the exchange rate over the rest of the financial year, one which was only likely to be achieved with a rising interest rate differential in favour of the pound against the basket of foreign currencies. We took the view that in these circumstances substantial intervention to support sterling would take place. This would be natural in an environment in which market pressures were more likely to force sterling sharply down than up and in which the authorities would naturally seek to reinforce interest rate policy by their intervention policy. The broad features of the present forecast are little different than those of the July projections. the only materially different factor is that we are now two months or so nearer to the end of the financial year than we were in July. In other words, we have so far enjoyed two months when sterling



not been subject to heavy downward pressure. To that extent, there might be a case for reducing the proportion of the intervention to date which is assumed to be reversed over the rest of the year say, from a half to a third. But to go beyond this and assume no reversal would in my view be inconsistent with the rest of the forecast.

- 4. Assuming a substantial reversal of the intervention to date over the rest of the financial year does not, of course, imply that we believe in reality that there will be a steady decrease in the reserves month by month. In practice, the intervention is liable to be concentrated in the short intervals during which sterling is under pressure, though as a forecasting artefact we shall doubtless need to assume a smooth rundown in the reserves.
- 5. Clearly, in any case, we will have the opportunity to reconsider the intervention assumptions after the Sir T Burns' Overview meeting on 21 September.

JWG

J W GRICE

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FROM: C W KELLY

DATE: 15 September 1987

MR RICHARDSON

cc: Mr Peretz

Mr Grice

Ms Goodman

Mr Brook

Ms Bronk o/r

Mr Nelson

FUNDING POLICY : THE RESERVES

Thank you for your minute of 14 September.

- 2. As I have said, I do not see any credible alternative to assuming no change in the spot reserves from wherever we happen to be at the end of the month preceding the time when you need to make the assumption (unless, of course we already know what the change in the current month will be).
- 3. This seems to me entirely consistent with the strategy of trying to fund intervention over a period.
- 4. It is not, of course, a forecast of what is likely to happen. But it avoids introducing a new bias caused by trying to forecast something which, I suspect, is inherently unforecastable.
- 5. It is a moot point whether we should make any special allowance for the BP figures. My inclination would be against.
- 6. I have asked Ms Goodman to check the figures.

FROM: M G RICHARDSON

DATE: 14 September 1987

MR KELLY

cc: Mr Peretz

Mr Grice

Ms Goodman

Mr Brook o/R.
Ms Bronk o/r

Mr Nelson

FUNDING POLICY: THE RESERVES

Thank you for your minute of 3 September.

- 2. I am holding a small meeting with the forecasters tomorrow to determine the funding figure assumptions for the rest of the current financial year. While there is no need for the exchange raters to come for one item, it would be helpful to know that you are content with our intervention assumption.
- 3. Your paragraph 8 seems to be pushing us towards an assumption that the underlying spot reserves will increase over the year by £4.4bn (+£4779m to the end of July; -£280min August; and -£100m up to Friday). I shall be grateful if this arithmetic, and the funding assumption, can be confirmed by noon tomorrow.
- 4. As far as I understand forex mechanics, £4.4bn appears to imply that over the rest of the year:
 - a. pluses will balance the minuses, <u>but no more</u>; there will be no bias in the Bank's operations beyond what is thought necessary to manage the exchange rate (or whatever dollar-dabbling is supposed to do);
 - b. the BP contribution will be either put through the market or offset by minuses;

- c. the published figures will tell the truth; or at any rate will err from the truth only in an unbiassed and balanced way, with no net effect overall (that is, for the next few months it will be felt that the foreign exchange market will benefit from information rather than misinformation);
 - d. any departures from a-c above will be met by increases/decreases in the forward book, rather than the spot reserves.

If those provisos are mistaken, then presumably we shall need to look again at the £4.4bn figure.

M G RICHARDSON

FROM: C W KELLY

DATE: 3 September 1987

MR RICHARDSON -

cc: Mr Peretz

Mr Grice o/r

Ms Goodman

Ms Bronk

Mr Brook o/r

FUNDING POLICY : THE RESERVES

I was grateful to you for your minute of 28 August and for Ms Goodman's comments of 1 September. I was glad to see that none of you were wasting your time in the office during the dog days of August.

- 2. As you point out, there are serious questions underlying your flight of fancy whether we have a target for the change in reserves, if so whether we expect to achieve this through changes in net foreign currency borrowing or through intervention (and hence sterling borrowing) and how this should be reflected in the funding arithmetic and financial forecast.
- 3. At one level the answer is, of course, that we cannot have a target for intervention because we \underline{do} have an effective target for the exchange rate, and intervention is only an instrument to help achieve that. We do not have a target for interest rates for the same reason.
- 4. The more interesting question is, however, whether <u>other</u> things being equal we are still looking for an increase in the reserves or not.
- 5. I have to confess to not being entirely sure of the answer.
- 6. On changes through net foreign currency borrowing, we should be a bit clearer where we stand after the Chancellor's meeting on 16 September.

8. But we have not actually given the Bank of England any instruction that they should be looking for opportunities to buy foreign currency in excess of that required by government departments for other than exchange rate reasons. So if we do have a preference one way or another it is obviously a very muted one, easily overturned (as it should be in the circumstances) by other considerations. That being so, I am convinced that the right course for the funding arithmetic is to continue to assume no change from wherever we happen to be at the time the table is drawn up, and to allow the assumption in the short-term forecast to iterate with what the rest of the forecast shows for the exchange rate.

the time.

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C W KELLY

FROM: H C GOODMAN

DATE: 1 SEPTEMBER 198'

MR KELLY

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cc Mr Peretz

Mr Grice

Mr Richardson

Ms Bronk

Mr Brook - o/r

# FUNDING POLICY: THE RESERVES

I can well understand Mr Richardson's sense of frustration both at the awkwardnesses of pursuing the full-fund policy in a world where intervention is large and difficult to predict and at 8.30 calls. His proposal to allow a £1 billion increase in the spot reserves in a year is not radically different from the old \$200 million rule, though of course the rationale for the old rule was to conserve our foreign reserves and the Bank's independence rather than to ease the funding problems. Nonetheless, I think the situation which we face is both more complicated and less opaque than allowed for in Mr Richardson's description.

- 2. Clearly, there would be advantages in going over to the sort of global ceiling suggested. As well as the benefits from a funding point of view, we would regain the benefits under the old \$200 million rule. In addition, Mr Richardson, was, present at a meeting recently when Mr Cassell expressed his concern at the current practice of massaging the figures for publication. Perhaps the Chancellor could be persuaded that the difficulties which current practice on intervention engenders for funding are a good enough reason to change this. However, I doubt whether he will want to reduce his room for manoeuvre on the Reserves.
- 3. Taking Mr Richardson's points in turn, as far as the size of the Reserves is concerned, some increase would still be

desirable, against the possibility that we join the ERM and to ensure that we are in a position to fulfil our Louvre commitments. Our Reserves are still not high in comparison with those of other countries. However, as Mr Richardson says, we should be conscious of the cost of raising funds for the Intervention is only one way of doing this. reserves. On the foreign currency borrowing side we are, working to minimise Raising foreign currency when we sell tranches of equity overseas avoids the need to set up separate funding operations. In the context of the BP sale, what I meant by augmenting the reserves painlessly was that it opportunities for obtaining foreign currency without cutting across other policy objectives. MGL advise that this is correct.

- 4. We also need to remember that intervention has wider uses than manipulating the size of the reserves and is carried out in response to changes in the market (rather like a demand determined programme). Firstly, Bank need to obtain funds to supply public sector needs; secondly we intervene to smooth fluctuations in the market; thirdly we intervene to meet our international obligations under Louvre and finally we may soon find ourselves intervening explicitly to maintain sterling within certain ranges.
- 5. I hope that setting these points down in this way will help to show why it is difficult to forecast the amount of intervention, which we are likely to do over any period. In effect, it is as difficult as forecasting the exchange rate itself. This is why I think should stick to a conventional assumption of no change on both in all forecasts. I do not know why the summer forecast assumed that half the intervention up to the end of May would be unwound, I was certainly not consulted on that. On the contrary, if the dollar continues weak over the next 3 months the probability is that we will rake in more funds.
- 6. I do not think it is very realistic to think that this would be an appropriate moment to move over to a ceiling for intervention and, unless this was justified on exchange rate

Management grounds, I would be most reluctant to see the full fund to term govern exchange market operations. In this context I would make the following points:-

- a. We do not want Sir Robin Ibbs involved in intervention policy;
- b. It is wholly unrealistic to expect the Bank to prioritise intervention operations in the way suggested, we are bound to rely on their knowledge and sensitivity to the market. Improving arbitary one year rules would add a further layer of difficulties;
- c. The Bank's approach is more commercial than Mr Richardsons: intervention has a record of <u>profitability</u>, which is surely far more important than sticking to cash limits;
- d. It may have escaped Mr Richardson's notice but the Bank of England is not a private sector organisation. Other countries manage their intervention operations in substantially the same way as we do, ie without cash limits. If we compare the scale of our operations with those of other countries, with the exception of the Germans, ours are relatively modest. The situation would get worse if we joined the ERM, so it would be unwise to go down this path now if we thought that we might join the mechanism.
- 7. To summarise we would say then that our policy is "up a bit", as long as this is consistent with the need to intervene to smooth fluctuations, meet international obligations and keep sterling in a range, which is consistent with our objectives for monetary conditions.
- 8. I thought actually, that the "middle way" solution set out by Mr Richardson in his note for the Bank really dealt quite adequately with the problems on funding caused by intervention and in any case. I also understood that after the Grice paper

we had come to the conclusion that funding intervention did not need to be timed as rigidly as the existing full-fund rules and that we were going to say something about all this in the Mansion House Speech.

9. Finally, I am surprised that Mr Richardson does not appreciate the strenuous efforts that Sir Geoffrey Littler and I were making to hit the MCC Score for the Reserves this month. Our task was even more difficult than the one faced at Lords and one 6 instead of a 4 seems to have let us down at the end of the day.

H C GOODMAN

MAMC: D3

FROM: C W KELLY

DATE: 16 September 1987

CHANCELLOR

cc: Economic Secretary
Sir P Middleton
Sir T Burns
Sir G Littler
Mr Cassell
Mr Peretz
Mr Grice
Ms Goodman
Mr Cropper

### PROFITABILITY OF INTERVENTION

You asked me to update the figures on the profitability of intervention which we provided in the spring.

- 2. There is, of course, no unique way of doing this over a period in which intervention has not summed to zero. But one possible methodology, which is consistent with that used in the earlier submission, was described in an article in the Bank of England's quarterly bulletin in September 1983. It involves calculating the sterling cost of the acquisition of dollars at the time they are acquired with the sterling value of those dollars at the end of the period. The procedure is to:
  - i. Estimate the sterling capital used to purchase dollars over the period by dividing intervention in each month by the average sterling/dollar rate during that month, and summing the resulting series.
  - ii. Calculate the end-period value of the dollars so bought by converting the cumulative total of intervention by the exchange rate ruling at the end of the period.
  - iii. Subtract (i) from (ii).

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3 The calculation is subject to a considerable number of caveats. In particular it assumes:

- i. That all intervention is in dollars.
- ii. That intervention is evenly spread through the month.
- iii. That there is no profit or loss from deals within the month.
- iv. That net purchases over the period could be closed out at the exchange rate observed at the end of the period.
- 4. None of these, particularly the last, are likely to be true in practice. It also makes no allowance for interest rate effects, ie that we are paying a sterling interest rate on the sterling capital employed and receiving a (lower) dollar one on the dollar assets. Nor, though this is probably less important, does it allow for profits/losses arising within the reserve portfolio assets bought and sold as a result of the demands made by intervention.
- 5. The three tables attached show the results of performing this calculation for the period since Louvre, the period since Plaza and the whole period since the beginning of 1979 respectively.
- 6. Table 1 shows that, calculated on this basis ignoring interest rate effects, we have made a small book "loss" since the Louvre agreement. Adding in interest rate effects would make this worse since US rates have remained below sterling rates.
- 7. The reason is not hard to find. Over a period when net intervention is not zero the calculation of profit is much influenced by the exchange rate which happens to rule at the end of the period covered. However profitable it is to buy dollars when sterling is strong and sell them when it is weak, any profit of this kind is soon wiped out if we continue to hold dollars when sterling is rising.

- 8 Table 2 shows that over the longer period since Plaza we have, on the same basis, made a small profit. But that also would be reduced if interest rate effects were taken into account. It could also very quickly be turned into a <u>loss</u> if sterling strengthened further against the dollar.
- 9. Table 3 shows that over the whole period since 1979 we have made a healthy profit, but one which is smaller than it was because of the effect of a weaker dollar on the sterling value of dollar assets acquired in previous periods.
- 10. I understand that you are thinking of using some of these figures at your IMF press conference tomorrow. I would advise strongly against. If we can do the calculations, so can anyone else. They would be able to show that since Louvre we have made a loss, which becomes a bigger loss if interest rate effects are taken into account, and that although we are still showing a book profit post-Plaza, that also ignores interest rates and could soon turn round if the exchange rate strengthened. Once you have given your imprimatur to calculations of this kind, they could be used against you.
- ll. You also asked what the "true" figures would look like, ie including changes to the unpublished forward book as well. You asked for a quick response and we have not had time to calculate this. But I am fairly certain that it would not improve the picture.

Culk

C W KELLY

|                        | TABLE 1: | ILLUSTRATIVE CAL                                 | CULATIONS OF THE PI                              | ILLUSTRATIVE CALCULATIONS OF THE PROFITABILITY OF INTERVENTION SINCE LOUVRE (FEBRUARY (1987) | INCE LOUVRE (FEBRIARY (1987)                                                              | )                                                               |
|------------------------|----------|--------------------------------------------------|--------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
|                        | (1)      | (2)                                              | (3)                                              | (4)                                                                                          | (5)                                                                                       | (9)                                                             |
|                        | Spot     | Monthly<br>average<br>exchange<br>rate<br>(\$/£) | Monthly<br>average<br>exchange<br>rate<br>(\$/£) | Cumulative Sterling capital employed in intervention (Col(1)/Col(2) then cumulated)          | Sterling value<br>of cumulative<br>intervention (Col(1)<br>cumulated/Col(3))<br>£ million | Community of the dealing open of the (Col(5)-Col(4))  E million |
| 1987                   |          |                                                  |                                                  |                                                                                              |                                                                                           |                                                                 |
| February               | + 287    | 1.527                                            | 1.546                                            | + 188                                                                                        | + 186                                                                                     | - 2                                                             |
| March                  | + 1785   | 1.592                                            | 1.604                                            | + 1309                                                                                       | + 1292                                                                                    | - 17                                                            |
| April                  | + 2912   | 1.630                                            | 1.660                                            | + 3096                                                                                       | + 3002                                                                                    | - 94                                                            |
| May                    | + 4760   | 1.666                                            | 1.628                                            | + 5953                                                                                       | + 5985                                                                                    | + 32                                                            |
| June                   | - 230    | 1.629                                            | 1.612                                            | + 5812                                                                                       | + 5902                                                                                    | 06 +                                                            |
| July                   | + 499    | 1.610                                            | 1.593                                            | + 6122                                                                                       | + 6286                                                                                    | + 164                                                           |
| August                 | - 457    | 1.598                                            | 1.630                                            | + 5836                                                                                       | + 5863                                                                                    | + 27                                                            |
| September (to 15.9.87) | + 156    | 1.651                                            | 1.644                                            | + 5930                                                                                       | + 5908                                                                                    | - 22                                                            |

|            | TABLE 2:                          |                      | ILLUSTRATIVE CALCULATIONS OF         |            | TY OF IN                                                | THE PROFITABILITY OF INTERVENTION SINCE PLAZA (SEPTEMBER 1985)                      | LAZA (SEPTEME                                                       | 3ER 1985)                                  |                                                                | 7                                        |
|------------|-----------------------------------|----------------------|--------------------------------------|------------|---------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|------------------------------------------|
|            |                                   |                      |                                      |            |                                                         |                                                                                     |                                                                     |                                            | 0                                                              |                                          |
|            | (1)                               | -                    | (2)                                  | (3)<br>End |                                                         | (4)                                                                                 | (5)                                                                 |                                            | (9)                                                            |                                          |
|            | Spot<br>intervention<br>£ million | ot<br>intion<br>iion | Monthly average exchange rate (\$/£) | y 8 8 4 0  | Cumulativ<br>capital e<br>nterventi<br>n(2) the<br>£ mi | Cumulative sterling capital employed in intervention (Col(1)/Col(2) then cumulated) | Sterling value of cumulative intervention (Col(1) cumulated/Col(3)) | value<br>  ative<br>  (Col(1)<br> /Col(3)) | Cumulative<br>dealing "profits<br>(Col(5)-Col(4))<br>£ million | lative<br>"profits"<br>-Col(4))<br>llion |
|            |                                   |                      |                                      |            |                                                         |                                                                                     |                                                                     |                                            |                                                                |                                          |
| 1985       |                                   |                      |                                      |            |                                                         |                                                                                     |                                                                     |                                            |                                                                |                                          |
| Sep tember | 1                                 | 26                   | 1.365                                | 1.407      | í.                                                      | 71                                                                                  |                                                                     | 69                                         | +                                                              |                                          |
| October    | . 3                               | 324                  | 1.422                                | 1.445      | t                                                       | 299                                                                                 | - 29                                                                | 291                                        | œ<br>+                                                         | ~                                        |
| November   | - 2                               | 201                  | 1.440                                | 1.409      | •                                                       | 439                                                                                 | - 4]                                                                | 417                                        | + 22                                                           |                                          |
| December   | 1                                 | 416                  | 1.446                                | 1.446      | 1                                                       | 727                                                                                 | - 7                                                                 | 718                                        | 6<br>+                                                         |                                          |
| 1986       |                                   |                      |                                      |            |                                                         |                                                                                     |                                                                     |                                            |                                                                |                                          |
| January    | +                                 | 132                  | 1.423                                | 1.409      | ı                                                       | 634                                                                                 | - 64                                                                | 643                                        | i                                                              | 6                                        |
| February   | +                                 | 112                  | 1.430                                | 1.450      | 1                                                       | 556                                                                                 | - 54                                                                | 548                                        | +                                                              | _                                        |
| March      | +                                 | 278                  | 1.467                                | 1.478      | 1                                                       | 366                                                                                 | - 34                                                                | 349                                        | + 17                                                           |                                          |
| April      | +                                 | 264                  | 1.499                                | 1.553      | 1                                                       | 190                                                                                 | - 16                                                                | 162                                        | + 28                                                           |                                          |
| May        | +                                 | 138                  | 1.521                                | 1.472      | 1                                                       | 66                                                                                  | _                                                                   | 77                                         | + 22                                                           |                                          |
| June       | +                                 | 291                  | 1.509                                | 1.534      | +                                                       | 94                                                                                  | +                                                                   | 115                                        | + 21                                                           | _                                        |
| امار       | 1                                 | 4                    | 1.508                                | 1.492      | +                                                       | 91                                                                                  | +                                                                   | 116                                        | + 25                                                           |                                          |
| August     | - 1                               | 141                  | 1.487                                | 1.488      | •                                                       | 4                                                                                   | +                                                                   | 22                                         | + 18                                                           |                                          |
| Sep tember | - 3                               | 372                  | 1.472                                | 1.448      | •                                                       | 257                                                                                 | - 23                                                                | 235                                        | + 22                                                           |                                          |
| October    | 9 -                               | 668                  | 1.428                                | 1.408      | 1                                                       | 725                                                                                 | - 7                                                                 | 716                                        | 6<br>÷                                                         |                                          |
| November   | +                                 | 35                   | 1.425                                | 1.437      | 1                                                       | 700                                                                                 | - 67                                                                | 677                                        | + 23                                                           | _                                        |
| December   | +                                 | 96                   | 1.438                                | 1.484      | 1                                                       | 633                                                                                 | - 55                                                                | 591                                        | + 42                                                           |                                          |

dealing "profits" Col (5)-Col (4)) Cumul atfive £ million + 123 + 176 + 243 + 118 62 99 9 ILLUSTRATIVE CALCUALTIONS OF THE PROFITABILITY OF INTERVENTION SINCE PLAZA (SEPTEMBER 1985) intervention (Col(1) cumul a ted/Col(3)) Sterling value of cumulative £ million 2517 5403 5369 5491 + 5780 + 5418 (2) Col(2) then cumulated intervention (Col(1)/ capital employed in Cumulative Sterling £ million + 5368 + 5345 585 + 2511 + 5227 + 5537 397 + 5251 3 £ million exchange Monthly ave rage rate (3) End 1.514 1.546 1.660 1.628 1.612 1.593 1.644 1.604 1.630 exchange average Monthly rate 1.666 1.629 1.507 1.592 1.610 1.527 1.630 1.598 1.651 (\$/E) TABLE 2 (CONTD): intervention 230 499 Spot (\$/\$) 287 + 4760 457 156 + 2912 3 (to 15.9.87) Sep tember February January August March April July 1987 June

|      |   | (1)                                  | (2)                                                | (3)                                          | (4)<br>Cumulative sterling                                                                  | (5)<br>Sterling value                                              | (6)                                                  |
|------|---|--------------------------------------|----------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------|
|      |   | Spot<br>Intervention<br>(\$ million) | Quarterly<br>average<br>exchange<br>rate<br>(\$/£) | End<br>quarter<br>exchange<br>rate<br>(\$/E) | capital employed<br>in intervention,<br>£ million<br>(col (1)/col(2),<br>then<br>cumulated) | of cumulative intervention, £ million (col(1), cumulated, /col(3)) | Cumulative dealing profits aillion (col(5) - col(4)) |
| 1979 | 1 | 1244                                 | 2.316                                              | 2.067                                        | 617                                                                                         | 532                                                                | -15                                                  |
|      | 2 | 1577                                 | 2.381                                              | 2.172                                        | 1375                                                                                        | 1299                                                               | -76                                                  |
|      | 3 | 779                                  | 2.234                                              | 2.202                                        | 1724                                                                                        | 1635                                                               | -39                                                  |
|      | Ĺ | 83                                   | 2.157                                              | 2, 225                                       | 1762                                                                                        | 1555                                                               | -107                                                 |
| 1980 | 1 | 1126                                 | 2.254                                              | 2.164                                        | 2262                                                                                        | 1222                                                               | -39                                                  |
|      | 2 | 537                                  | 2.286                                              | 2.357                                        | 2497                                                                                        | 1268                                                               | -228                                                 |
|      | 3 | 605                                  | 2.382                                              | 2.388                                        | 2751                                                                                        | 2492                                                               | -258                                                 |
|      | 4 | 450                                  | 2.387                                              | 2.392                                        | 2939                                                                                        | 2576                                                               | -263                                                 |
| 1981 | 1 | 355                                  | 2.309                                              | 2.242                                        | 3093                                                                                        | 3013                                                               | -79                                                  |
|      | 2 | -136                                 | 2.377                                              | 1,933                                        | 3027                                                                                        | :4:5                                                               | 389                                                  |
|      | 3 | -1124                                | 1.839                                              | 1.811                                        | 2416                                                                                        | 1035                                                               | 619                                                  |
|      | 4 | -67                                  | 1.883                                              | 1.911                                        | 2381                                                                                        | 1841                                                               | 460                                                  |
| 1982 | 1 | 12                                   | 1.345                                              | 1.783                                        | 2387                                                                                        | 3052                                                               | 565                                                  |
|      | 2 | -908                                 | 1.779                                              | 1.743                                        | 1877                                                                                        | 2501                                                               | 724                                                  |
|      | 3 | 490                                  | 1.725                                              | 1.695                                        | 2161                                                                                        | 2963                                                               | 803                                                  |
|      | 4 | -1153                                | 1.550                                              | 1.518                                        | 1462                                                                                        | 1392                                                               | 930                                                  |
| 1983 | : | -858                                 | 1.530                                              | 1.482                                        | 901                                                                                         | 2332                                                               | 1131                                                 |
|      | 2 | 221                                  | 1.555                                              | 1.535                                        | :043                                                                                        | 1106                                                               | 1063                                                 |
|      | 3 | 22                                   | 1.509                                              | 1.495                                        | 1058                                                                                        | 2177                                                               | 1119                                                 |
|      | 4 | -329                                 | 1.471                                              | 1,452                                        | 334                                                                                         | 1015                                                               | 1181                                                 |
| 1984 | 1 | -259                                 | 1.435                                              | 1.442                                        | 554                                                                                         | 1850                                                               | 1196                                                 |
|      | 2 | -418                                 | 1.396                                              | 1,356                                        | 354                                                                                         | 1559                                                               | 1304                                                 |
|      | 3 | -415                                 | 1.299                                              | 1.239                                        | 35                                                                                          | 1480                                                               | 1445                                                 |
|      | 4 | 16                                   | 1.216                                              | 1.158                                        | <b>∔8</b>                                                                                   | 1598                                                               | 1550                                                 |
| 1985 | 1 | -241                                 | 1.115                                              | 1.230                                        | -168                                                                                        | 1308                                                               | 1476                                                 |
|      | 2 | 538                                  | 1.258                                              | 1.312                                        | 259                                                                                         | 1536                                                               | 1377                                                 |
|      | 3 | -142                                 | 1.376                                              | 1.407                                        | 156                                                                                         | 1425                                                               | 1269                                                 |
|      | 4 | -941                                 | 1.436                                              | 1.445                                        | -499                                                                                        | -36                                                                | 1235                                                 |
| 1986 | 1 | 522                                  | 1.440                                              | 1.478                                        | -137                                                                                        | 1073                                                               | 1210                                                 |
|      | 2 | 693                                  | 1.510                                              | 1.534                                        | 322                                                                                         | :486                                                               | 1163                                                 |
|      | 3 | -517                                 | 1.489                                              | 1.443                                        | -25                                                                                         | :217                                                               | 1242                                                 |
|      | 4 | -537                                 | 1.430                                              | 1.484                                        | -400                                                                                        | 325                                                                | 1226                                                 |
| 1987 | 1 | 2144                                 | 1.543                                              | 1.604                                        | 989                                                                                         | 2100                                                               | 1111                                                 |
|      | 2 | 7442                                 | 1.641                                              | 1.613                                        | 5524                                                                                        | 5702                                                               | 1178                                                 |

Note:

above figures are illustrative only and need to be interpreted with caution. The methodology, together with a discussion of its limitations is contained in the Bark of England Quarterly Bulletin article, 'Intervention, Stabilisation and Profits', September 1983. The figures given above exclude interest.

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