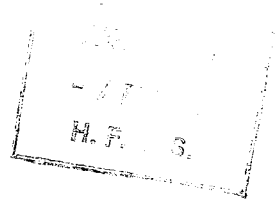


**18) MONETARY TARGETS – PART R:
2ND FEBRUARY 1978**



Copies: Mr. Bridgeman
Mr. Wiggins

MR. M.L. WILLIAMS



MONETARY TARGETS IN GERMANY AND THE UK

The Chancellor was grateful for your minute of 31st January and the table which was attached.

K.J.

(F.K. JONES)
2nd February, 1978

1. MR WILLIAMS
2. MRS WILSON, HFCS

DECLASSIFICATION OF REGISTERED FILES

FILE NO HF 35/08 B

1. In accordance with departmental procedures, we are expected to review the classification of all newly-created or newly classified files at half-yearly intervals. I have given careful consideration to the attached file, but the material contained in it is sensitive and reclassification would not be appropriate at this stage. As this material is likely to remain sensitive for the foreseeable future, there would be little purpose served in carrying out a further review six months from now.
2. Instead I recommend that HFCS should bring this file forward again in five years' time.

S A J Locke

S A J LOCKE

11 August 1978

If the Chancellor and Governor accept the recommendations in paragraph 7 the system would work broadly as follows:-

1. In the Budget speech the Chancellor would announce the shift to the rolling target system, that he intended that the trend of the growth of money supply during 1978 would be in the range $x\%$ to $y\%$ per annum, and that that target would be rolled forward 6 months in the autumn. (He would avoid specifying how it would be rolled forward.) The Chancellor would explain why he had decided on $x\%$ to $y\%$, with the mid-point the same as, or higher, or lower as the case may be, than the desired rate of growth of money GDP in the period.
2. The details of the base period etc would be explained in more detailed briefing and expositions.
3. The reference to trend in the Budget speech would be taken up and emphasized in other speeches and briefing - it would be made clear that the authorities would have regard to what appeared to be happening to the trend during the year, as well as to the cumulative position to date.
4. During the following months corrective action would be taken if it appeared that the trend had shifted outside that range; or factors were developing that would almost certainly make it do so, and it was thought that there were not other factors already at work which would bring the growth trend back to the desired course. The presumption would be that unless deviations were very radical - which would almost certainly mean other things in the economy were also going wrong - the corrective action at this stage would be the use of one or more monetary instruments.
5. In the autumn - not earlier than mid-September when the mid-August money supply figures were available (so the outcome of the first 6 months on the "3 month moving average" basis was known), but usually a month or so later when Parliament had reassembled and the Bray forecast based on the autumn NIP was published - the Chancellor would roll the target forward to one applying to the trend from mid-1978 to mid-1979 (or extend the previous target for a further 6 months), explaining the new figures in relation both to what had happened, and his reassessment of the economy. (He might or might not also decide to take fiscal action.)



ANNEX 2 ROLLING TARGETS: TECHNICAL ISSUES

Introduction

1. This annex considers some of the technical problems in deciding how to formulate and monitor monetary targets which are rolled forward periodically. Annexes are also attached outlining German and American experience. The numerical examples and graphs are all in terms of (seasonally adjusted) sterling M3, but the same factors would apply to a target in terms of M1. The objectives and desired characteristics of rolling targets are set out in paragraphs 3-4 of the main paper.

Time Horizon

2. There is a sizeable random element in the money supply figures and as a result it is difficult to assess the trend rate of growth over a short period. This would suggest fixing a target, as at present, relating to a 12 month rather than any shorter period. Twelve months has the additional advantage of being the usual horizon for macro-economic policy announcements. On the other hand, changes in the underlying economy in the course of the year require the authorities to reassess periodically their monetary objectives. This can best be achieved, by rolling forward the target and relating it to a new, but overlapping, 12 month period (subject to the qualification in paragraph 13 below).

3. A rolling target system could be strengthened if there were also specified a desired medium term trend for the rate of growth of the monetary aggregate concerned. In particular it would lessen any market fears that rolling targets forward allow the authorities too much additional flexibility. By specifying a trend the authorities would be required to explain the annual target by reference to it and to the particular circumstances of the year, including any over- or under-shooting of the target in the preceding year. The US Fed occasionally mentions its desired trend for monetary growth in the medium

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term, although does not announce a formal target. The main difficulty lies in fixing an appropriate trend, which would be very dependent on the forecast rate of inflation in the medium term. Moreover, in the likely event of such a forecast being wrong the authorities would be left with a target trend that bore no relation to their current or expected monetary stance or other macro-economic objectives. A strict monetarist approach would require maintaining the target trend and adjusting policy to ensure its achievement. On the other hand, if it is accepted, as it has been by the UK authorities, that monetary policy alone would not be sufficient to bring inflation back to the desired level some adjustment of the target may be necessary, even if it does not fully accommodate the increase in inflation. Therefore, in order to avoid this problem of adjustment, a medium term target should not be set until inflation can be predicted with greater certainty.

4. The need to link monetary targets to fiscal developments will determine how often they can be rolled forward. By the same token, the announcement of new targets would need to be linked with a review of fiscal policy. On this basis, apart from the budget, the other date or dates in the year would need to be ones at which fiscal action could be taken, if thought necessary, or otherwise the economy generally reviewed. This could be in July and November. But July would be very close to a late budget and in most years there would be little need for any policy review; and the suggestion that any was necessary could add to market instability. There is some evidence to suggest that this has happened in the US where targets have been rolled forward every 3 months. To move the roll forward later would conflict with the Parliamentary timetable. On balance, therefore, there would seem to be advantage in the authorities committing themselves to only two rolls-forward each year; at the budget and in the late autumn. This would fit in reasonably well with the cycle of economic forecasts and assessments.

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Length of Base Period

5. A single month base period has the advantage of simplicity, but there is always a possibility that the single month chosen will be a freak, and the base will be too high or low in relation to the long term trend. This could arise for example from unusually high or low gilt sales, or because of random items in the CGBR. Seasonal adjustments are made to the monthly figures to spread out regular but "lumpy" payments whose timing can be predicted reasonably accurately. Other items, such as the pensioners' Christmas bonus, are not seasonally adjusted and could depress or swell the base month. There are other market factors - such as the incidence of new issues and the timing of large private sector transactions involving the use of loan facilities - which can affect the level of deposits (and therefore the money stock) on a particular day. Furthermore the compilation of the money stock figures involves a number of statistical adjustments, which can only be approximate, designed to remove the effect of double counting between different institutions and other distortions.

6. The fluctuations in monthly figures are illustrated in Graph D. A considerably smoother profile is shown for the changes in the three months moving average than for the monthly money stock changes. Setting a target is clearly less prone to fluctuation if a base that is an average of three months is chosen. There would be an objection to this course if it was thought that an erratic element in one month was associated with an erratic element in the same direction in the next month, but it does not appear that this is the case.

7. The German authorities take the approach one step further. They set an annual target as an average of the target year, compared with the average of the previous year; ie the base is effectively a twelve month average. The German system is discussed more fully in Annex 3. The use of a 12 month average is presentationally confusing, and should be regarded as a substitute for rather than a complement to a system of rolling targets.

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solution would not be free of difficulty because of the problems of seasonal adjustments arising out of the bunching of corporation tax payments on either side of the January make-up day. The Bank of England revise their seasonal adjustments retrospectively to take account of the actual outturn, and this process is not normally complete until some time in April. However, although this suggests January would be awkward as a single month base period, rough revisions should be available once the February outturn is known. If the final seasonal adjustment turned out significantly to change the base, there could be pressure on the authorities to change the target. But the effect on a 3-month base period as a whole is unlikely to be significant.

11. The problem of retrospective changes in seasonal adjustment factors could be reduced by choosing a base period even further into the past (eg banking November); but such a course could well necessitate undesirably sharp changes in policy, since nearly half the period would have elapsed before the target was announced. Stronger action would then be required to achieve any desired result within the target period.

12. A base period centred on January therefore represents the best option available at the time of the Budget. Rolling forward at 6 month intervals would point to an autumn reformulation based on the 3 months June-August. It may be convenient, however, to delay the announcement (and any necessary fiscal action) to November because of the need to await the return of Parliament and to complete the autumn NIF.

13. While generally the new target period would be 12 months there might be occasions when it would be of presentational advantage to extend the previous period from 12 months to 18 months, rather than rebasing the target. This could be of particular benefit if it was thought desirable to allow some compensation for low monetary growth during the previous six months. For example, if growth after six months was 4 per cent compared with a target of 9-13 per cent, setting a new 12 month target of 9-13 per cent would be equivalent to a target of $13\frac{1}{2}$ - $17\frac{1}{2}$ per cent over 18 months (or $8\frac{3}{4}$ - $11\frac{1}{4}$ per cent at an annual rate). Extending

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the 9-13 per cent target, however, by a further 6 months, would be equivalent to a target of $9\frac{1}{2}$ - $15\frac{1}{2}$ per cent over the next 12 months. The authorities will therefore wish to avoid committing themselves to roll forward by setting a new 12 month target.

Point or Range

14. Targets set in terms of ranges leave the authorities open to criticism if each time that they are rolled forward, the new base is towards the top of the previous range and no explicit allowance is made for this in the new target. Such base drift would allow targets to be set that are apparently unchanged, but in fact less restrictive as no attempt is made to offset any overshoot in the previous period. A point target would require the authorities to justify explicitly their decision not to allow for over or under-shooting.
15. But a point target would have some serious disadvantages. It wrongly suggests that the authorities can precisely formulate the relation between the growth in money supply and income growth over the target period. But in the event of a divergence from the target the authorities would be given little scope for delaying any policy correction. The target's spurious accuracy could have a serious destabilising effect on the market whose reaction would add to any divergence. Since the authorities would have to operate well below the target in order to avoid such a reaction, the target would inevitably become a ceiling, even if it was set as a central estimate. This leaves the authorities with a dilemma; either to set a target which would be thought to be too high or, by operating well below target, to restrict monetary growth more than desired. The arguments in favour of flexibility therefore strongly favour the use of ranges.
16. If a range is chosen there will still be a need publicly to show an awareness of base drift when setting new targets which will have to be justified in terms of past, as well as future performance. Base drift, however, is only a symptom of missing the target; it says nothing about the reasons for the miss or whether it should be reflected in the new target.

Size of the Range

17. The purpose of a range is to avoid problems caused by erratic movements in the statistics and to provide some leeway if developments elsewhere do not turn out as foreseen when the target was set. The width of the range must be such as to allow scope for these effects, but not be too wide so as to blur the purpose of the targets. With rolling targets, the problem of leeway is less, as there is less time for the assumptions underlying the target to become invalidated. The target variable will nevertheless be subject to considerable fluctuation about the underlying trend. For example, it has been estimated that over a period of a quarter, the average irregular component of any change in sterling M3 could be as much as $1\frac{1}{2}$ per cent. The statistical analogue of a quarterly range of 3 per cent would be a range of 6 per cent for an annual target. On the other hand there is some presumption that action will be taken during the year to correct for any divergence for the trend. A range of 4 or 5 per cent should therefore be sufficient. There is, however, a presentational argument for not widening the range from its present 4 per cent, the more so because the market will probably see the new system as already giving the authorities additional flexibility. In the US, the range has been 2 per cent to 3 per cent and has varied both over time and between targets.

Expressing, Monitoring and Presenting the Target

18. The authorities will internally monitor growth against the performance of the economy and their primary objectives; and they will form a view of the effect of the monetary target chosen and the desirability of any policy changes. The public, however, will also be in a position to form their own conclusions from the extensive monetary data published. The way the authorities choose to present both the target and the monthly figures can nevertheless have a significant impact on how the information is received and interpreted and how the markets react.

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19. The monitoring technique most usually adopted by the press and public is to annualise on the basis of growth in the target year to date. Thus commentators have presented the authorities' present aim as being to keep cumulative growth over the period within 9-13 per cent when expressed at an annual rate. This interpretation has been rejected by the Chancellor but the range has nevertheless become to be defined in terms of a "cone" (see Graph B which shows monetary growth this year compared with the target cone). The market tend to regard the sides of the cone as intermediate targets leaving the authorities little flexibility over the target year. Since erratic fluctuations at the start of a period could give a misleading picture of the trend, it was perhaps lucky that the first couple of months of 1977-78 were below the target range rather than above. If the order of the months May to September had been reversed, there might have been pressure on the authorities to initiate fairly severe action at an early date as the annualised figures would have been above the accepted range for each of the four months.

20. A second approach would be to specify that the money supply should not vary more than 1 or 2 per cent above or below the desired growth path of 11 per cent. Thus the present Canadian target is for a growth rate of M1 of between 7 per cent and 11 per cent a year from June 1977, but if growth is kept within a band 2 per cent above or below the mid point of the range, growth is regarded as being on target. Such a system allows more scope for fluctuations in the earlier part of the period, and therefore can be thought to provide a more realistic frame of reference. A target expressed in this way would lead to monitoring by parallel bands; these are shown as dotted lines on Graph B. If targets are to be rolled forward every six months, parallel bands are apparently more generous to the authorities than a cone form. They could allow the base to drift

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upwards by 2 per cent each six months period; in terms of the graph, the authorities could set point X as a new base and still claim that it was on target; with a cone, point Y would be the maximum. But such marked upward drift in the base period would clearly be transparent and undermine the authorities' intention. On the other hand, to allow variation of only plus or minus 1 per cent would be too restrictive, particularly if the tramlines came to be considered as intervention points.

21. A third, and perhaps the simplest, way of assessing and presenting monetary growth, assuming that it is generally accepted that the movements in any one month's figures are subject to too much fluctuation, is to judge the underlying trend on the basis of growth over the last three months. This is illustrated in Graph C which shows three monthly annualised rates. There are considerable fluctuations in the measure and it is clear that there are disturbances in the underlying trend which dominate any changes in the three monthly figures. Care will therefore be needed when presenting such changes as an indication of the trend, unless supporting information is available, in particular about likely future movements. Three months figures, however, will often prove useful to the authorities as a trigger for policy reassessment.

22. Basing a target on a 3 months average would suggest monitoring growth by changes in the 3 monthly moving average. However, this would be difficult presentationally and outside commentators are likely to concentrate their attention on the latest published figure. Moreover, internal policy considerations will usually need to focus on the trend of the last few months and the latest money stock figures, rather than an average the centre of which will be some way back in the past. For example, as graph B indicates, the trend of money supply growth over the period mid-August to mid-October last year was markedly upwards. Over the

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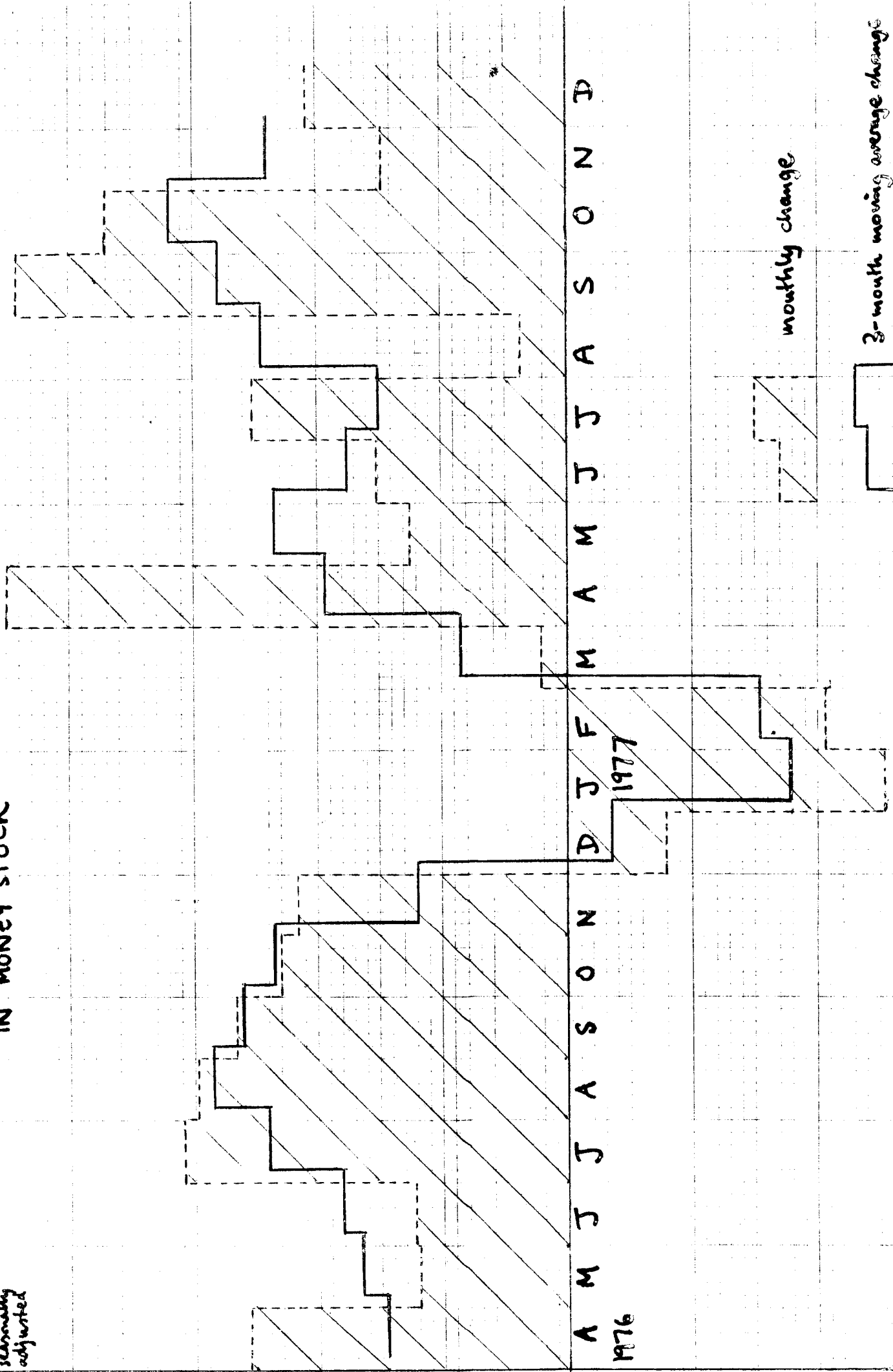
two months £M3 grew at 3-9 per cent (an annual rate of 26 per cent) and by mid-October was at a level that led to our changing our intervention tactics to ensure monetary growth was kept to the desired 9-13 per cent range. If attention had been focused only on 3 month averages, the latest available would have been that centred on September and neither growth nor level would have suggested a policy response.

23. The relative emphasis to be given to the different ways of expressing a target in part depends on considerations of policy; for example whether to maintain a given ratio of money supply to nominal income or to secure changes in that ratio. However, too well-defined a target path might suggest that the boundaries of any range are intermediate targets. There are always likely to be erratic monthly fluctuations, and a few months' figures cannot necessarily be taken as an indication of the underlying trend. The authorities will therefore clearly want to retain flexibility of presentation and to set a target of a general form. This might be done by expressing the target as a trend; for example "a trend in the range 9-13 per cent".

24. Similarly, it will be necessary to maintain flexibility when presenting the data and to direct the press and markets away from applying too mechanistic an appraisal. In particular, if the disadvantages described above of particular measures are to be avoided, public attention should be focused more closely on the trend rate of growth. It is important to note that rolling targets forward does not allow the authorities to avoid their performance being measured against targets set in the past. In the US where there are always four targets extant for each aggregate, performance is measured against targets set in previous periods, as well as those set most recently (see Annex 4).

Change
in FMS
seasonally
adjusted

GRAPH A: MONTHLY CHANGE IN MONEY STOCK

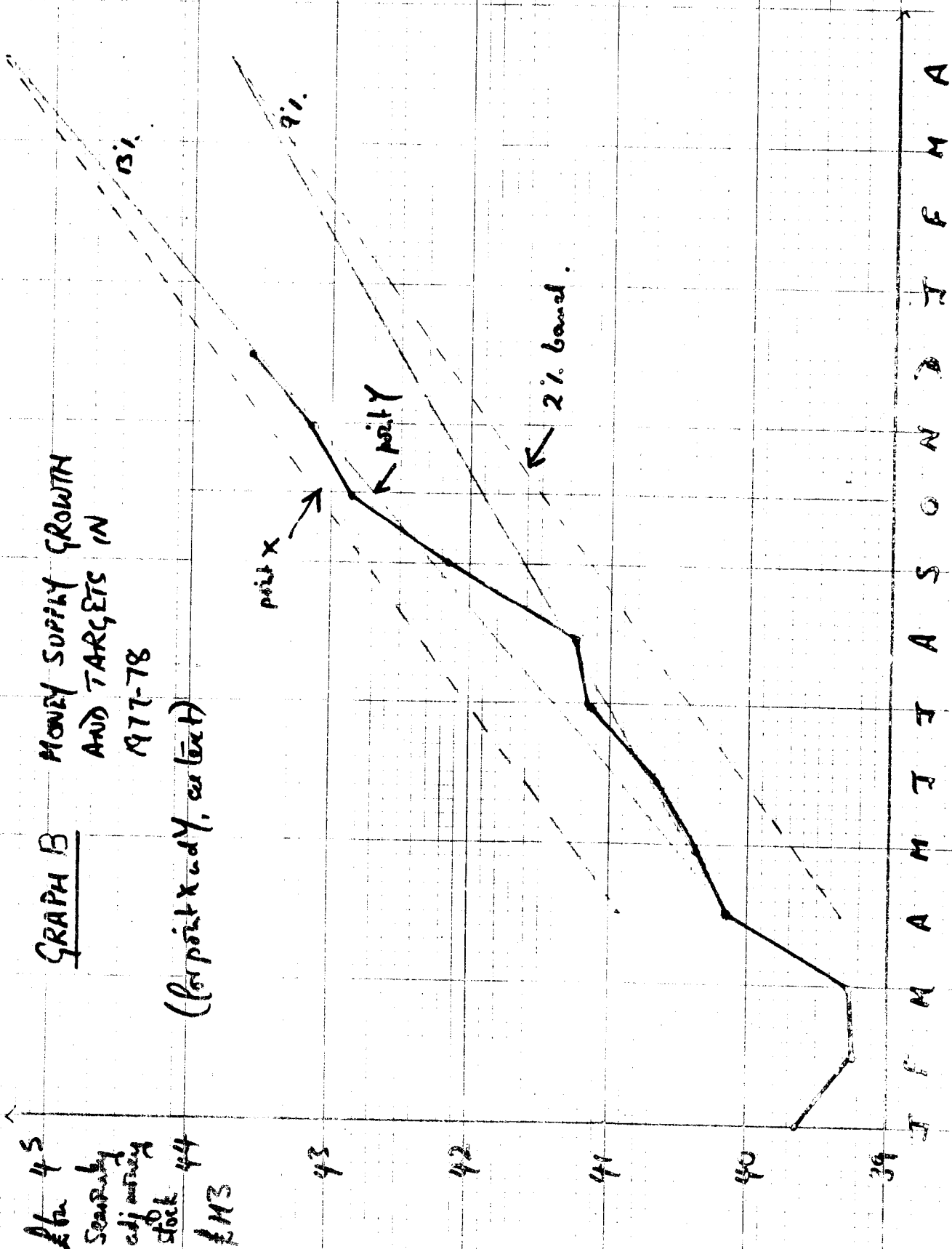


monthly change

3-month moving average change
(offset by one square for clarity)

GRAPH B MONEY SUPPLY GROWTH AND TARGETS IN 1977-78

(for point x, see text)



J F M A M J J A S O N D J F M A

1977-1978

GRAPH C

AMB: 3 months Growth or Annual Rate

25

% pa.

20

15

10

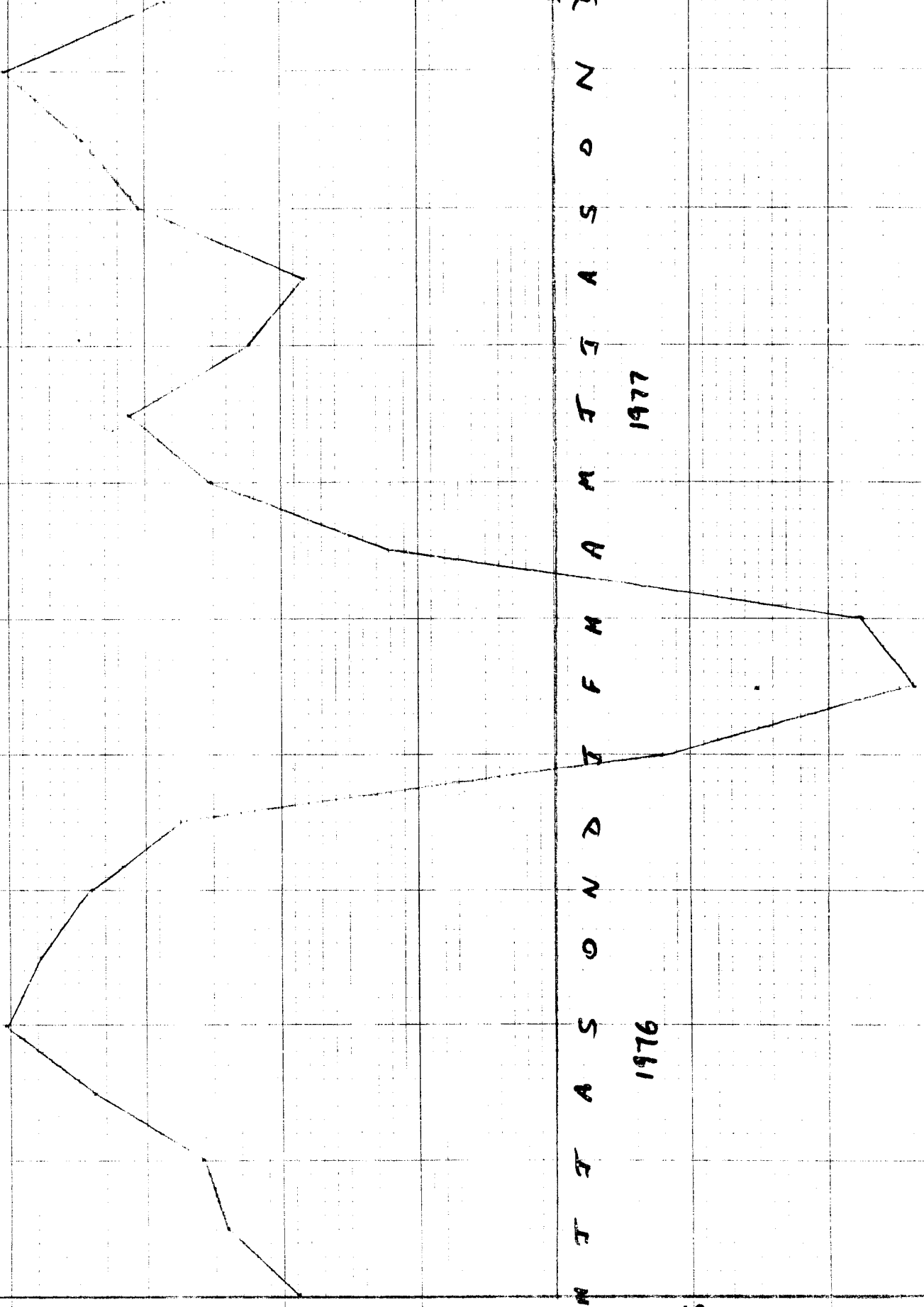
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5

10

15



J A S O N D J F M A M J J A S O N D

1977

1976

ANNEX 3 : MONETARY TARGETS IN GERMANY

The German authorities have announced since the end of 1974 quantitative targets for the rate of monetary expansion. The targets have been set in terms of Central Bank money; i.e. notes and coin in circulation plus the compulsory reserves against domestic liabilities that banks have to hold with the Bundesbank (calculated on the basis of constant reserve ratios). Different reserve ratios are required for different categories of deposits; Central Bank money can therefore be regarded as a weighted average of other monetary measures. The Bundesbank believe that Central Bank money is superior to these other measures because it is not subject to erratic movements between the different types of bank deposits, for example following changes in relative interest rates; it can be influenced by the authorities (being equivalent to a base money concept) and directly reflects the underlying trends. As the attached graph D shows, Central Bank money has grown more smoothly than other monetary measures.

The target for 1975 was formulated in terms of the growth in Central Bank money during 1975, but for subsequent years, the targets have related to average growth over the previous year. The change was made because the movement of Central Bank money is subject to chance fluctuations from month to month, and these could more readily be smoothed if the average over the year was measured. In effect, the base is a 12 month moving average; and monetary growth may be monitored, for example by comparing growth over the last 12 months with the base 12 months. The use of a 12 months average, however, carried with it considerable problems. If the underlying growth increases towards the end of the base year, the authorities can be left with an impossible burden in trying to bring it back on trend. For example, the Bundesbank set a target for 1977 of 8% over the average of 1976. The rate of growth in the last months of 1976, however, was somewhat above 8%; as a result, an 8% target for the average of 1977 was equivalent to a target of about 6% when measured from the end of 1976 to the end of 1977. It should also be noted that German commentators did not seem to understand that the 8% target was relatively restrictive. The German authorities, in order to underscore their stance, set an additional requirement of 6-7% growth from the last quarter of 1976 to the last quarter of 1977. They have repeated this in setting the target for 1978. The use of a 12 month average is an attempt to set objectives for the authorities in terms of the desired trend of monetary growth. Any comparison of two 12 month periods will during the target year include some months of overlap. The system should therefore be seen as a substitute for rolling targets. Although it would be possible to roll forward a 12 month moving average that would add to the difficulties of presentation already inherent in the system without any advantage in terms of linking different periods of monetary growth.

The broad criterion when setting a target has been that the growth in money holdings should be restricted to the growth of productive potential and "unavoidable" price increases. Only single targets rather than ranges have been set. The table below

shows how the targets set for the last three years break down:


	<u>1976</u>	<u>1977</u>	<u>1978</u>
Increase in Production Potential	2%	3%	3%
Increase in Capacity Utilisation	2½%	2%	some rise
Unavoidable Price Increases	4-5%	4%	3½%
Change in Velocity	some rise	-1%	some rise
Target	<u>8%</u>	<u>8%</u>	<u>8%</u>

The figures for productive potential^{and} capacity utilisation seem to have been both targets and forecasts; and those for changes in velocity are clearly forecasts. The figures for unavoidable price increases are certainly not forecasts, but their status is not clear. In setting the 1978 target, the Bundesbank said that the rate of price rises "must and can" be reduced to 3½%. The Bundesbank have also emphasised that the money supply targets are not to be taken as a guideline for incomes policy purposes, since an improvement in employment requires that production costs are kept to a minimum. The targets are primarily intended to establish a monetary background aimed at promoting other policies, and are therefore consistent with the primary objectives for growth and stability, rather than the latest forecasts.

The Bundesbank have consistently accepted overshooting of the target; their experience is summarised in the table below:

<u>Targets Set</u>		<u>Outturn</u>	
		end year to end year	average year to average year
1975	end 1974 to end 1975: <u>8%</u>	<u>9.9%</u>	7.8%
1976	average 1975 to average 1976: <u>8%</u>	8.4%	<u>9.2%</u>
1977	average 1976 to average 1977: <u>8%</u> (and 5-7% from Q4 1976 to Q4 1977)	10.2% (after 11 months)	<u>9.0%</u> (after 11 months)
1978	average 1977 to average 1978: <u>8%</u> (and 5-7% from Q4 1977 to Q4 1978)		

The Bundesbank have been careful to explain why the target was overshoot, and how this should be reflected in the new target. For example, when setting the target for 1977, the Bundesbank noted that the real growth of the national product had been larger than



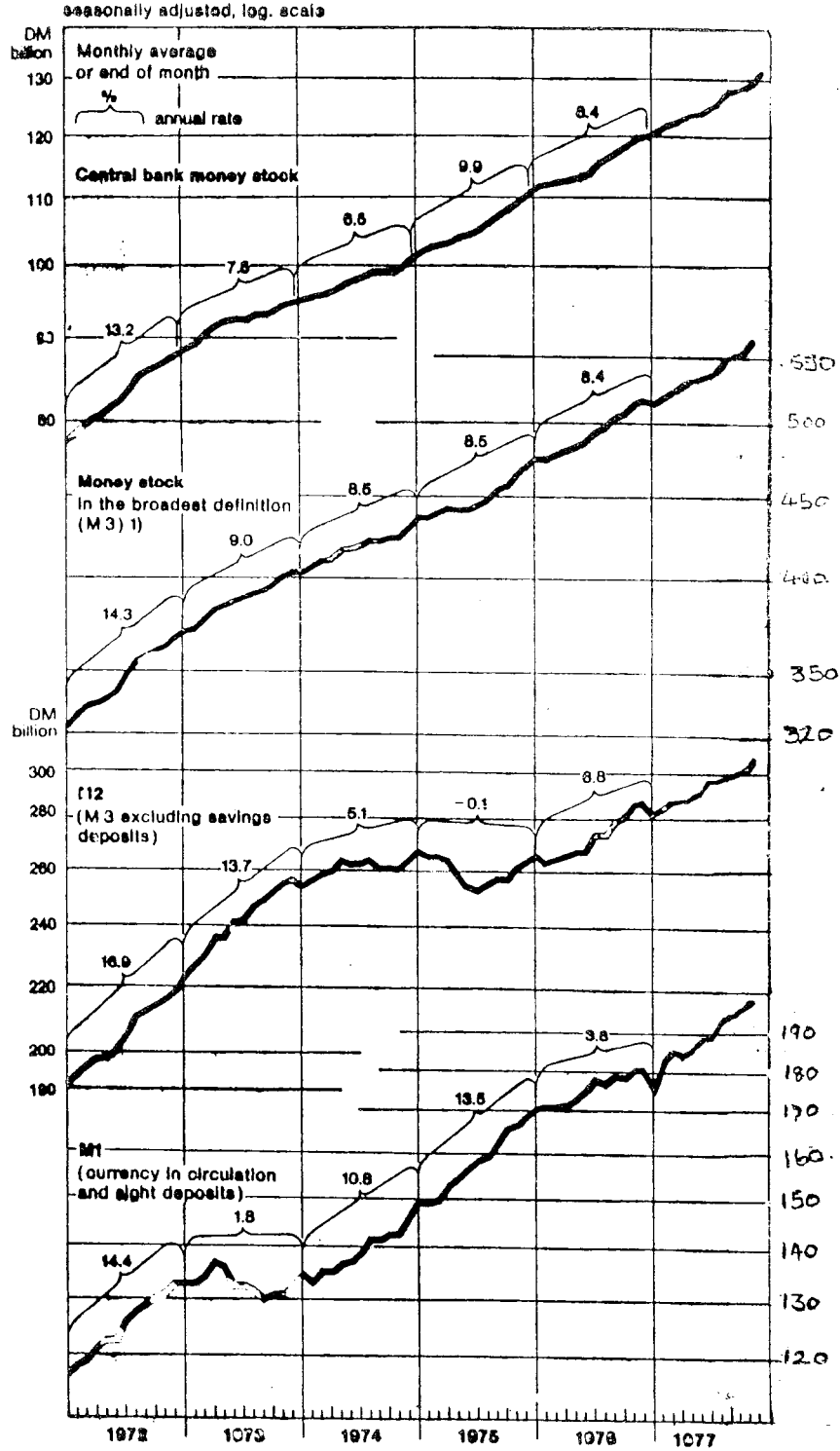
expected during 1976, and the increase in prices smaller than had been planned. The nominal growth was as predicted, at 9%. The velocity of circulation, however, did not rise as had been assumed, mainly because, it was thought, enterprises deliberately expanded their cash holdings and inflows from abroad also added to idle balances. As a result, some rise in velocity was built into the target for 1977,

In the event it does not seem to have materialised and has been implicitly built again into the target for 1978. 8% however, still looks relaxed; and the Bundesbank have clearly been guided by the need to keep interest rates low. There does not seem to have been any other attempt to compensate for overshooting; the German authorities have throughout emphasised the need for their targets to remain credible. To ensure this, "it is not enough to pursue the objective with determination; it is also necessary to re-examine the target - which was originally formulated in a particular situation and on particular assumptions - from time to time and to correct it if it need be, for it is of course not an end in itself but only a means to the end of a more successful and a more smoothly operating economic policy". (Quote from the Bundesbank's Annual Report for 1976).

GRAPH D

MONETARY GROWTH IN GERMANY

Central bank money and money stock
in various definitions



1) Currency in circulation, sight deposits, time deposits and funds borrowed for less than four years, savings deposits at statutory notice.

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ANNEX 4 : MONETARY TARGETS IN THE UNITED STATES

In spring 1975, the US Congress adopted a resolution requiring the Federal Reserve to report periodically its "objectives and plans with respect to the ranges of growth or diminution of monetary and credit aggregates in the upcoming twelve months". Since then the chairman of the Fed has reported to Congress at 3-monthly intervals announcing targets, in the form of ranges, for M1, M2, and M3. Each target has been based (other than the first for the 12 months from March '75) on the outturn of the immediately preceding quarter to the average of the quarter 12 months from the base quarter. At the same time, projections are given for the growth of the monetary aggregates over the next two months. These however are a guide to open market operations, rather than targets.

The practice of rolling targets forward complicates any assessment of the US authorities' performance. Money supply growth can be, and is, compared with four different targets, although public attention is usually focused on performance measured against the most recent target. By rolling forward the authorities may never meet a target, as the base is moved before the end of the period to which it relates. Any overshooting can be incorporated into a new target as a higher base and, as a result, the targets actually set may be less restrictive than they appear. An analysis of US targets, suggests that M1 has drifted up by only $\frac{3}{4}$ per cent over the $2\frac{1}{2}$ years since targets were first published. There are nevertheless considerable quarterly variations. M2, however, has drifted up by $2\frac{1}{2}$ per cent and M3 by $3\frac{1}{2}$ per cent. Over the same period there has been some attempt to reduce the target ranges. The current targets for the four quarters from Q3 1977 are 4- $6\frac{1}{2}$ per cent for M1, $6\frac{1}{2}$ -9 per cent for M2, and 8- $10\frac{1}{2}$ per cent for M3.

Growth in M1 and M2 since late 1976 is shown on graph E and the outturn to Q3 1977 and Q4 1977 shown on the attached table. The last four base quarters for M2 have clearly drifted upwards, although in Q4 1977 money stock was still within the target ranges set 4 quarters earlier. M1, on the other hand finished the year to Q4 1977 outside its target range. It was also above the targets set from Q1 1977 and Q2 1977, although it is almost within that set from Q3 1977. M1 growth was particularly rapid in the autumn of 1977 when it rose considerably above its target range in spite of increases in short term interest rates. These increases, at a time when velocity was expected to rise, were criticised both by monetarists and those concerned with real economic growth. The difficulties both of predicting and controlling monetary growth has accordingly cast legitimate doubt on the appropriateness of the targets. It has been possible to reduce the targets since 1975 but this will become increasingly difficult; and the Fed have expressed privately their consciousness of the problems in revising targets upwards. Some move in this direction is likely to become necessary as the targets set recently have all been somewhat below the rate of growth of nominal GNP which has been over 10%. However, when setting targets based on Q3 1977 the Fed showed its

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by maintaining its M1 target, and reducing that for M2. Even this did not satisfy those commentators who expected tighter targets on the basis/^{that} velocity was likely to rise.

The Federal Open Market Committee's records give some indication of the authorities' thinking in setting new targets, and the extent to which allowance is made for overshooting. Base drift is recognised as an issue, but decisions whether to compensate for overshooting are based on more fundamental considerations, such as the behaviour of the real economy, and changes in income velocity. Base drift will be subsumed in the analysis of these factors and the consequent setting of the new target. In its reports, which indicate considerable disagreement between members, the FOMC measure the outturn against the target ranges, discuss those factors that were responsible for over-or undershooting and outline the reasons for its choice of new target ranges; but very little quantification is given of the various factors that go to make up the targets.

The US press and public has traditionally concentrated its attention on M1. Uneasiness about deviation of M1 from its projected range has not been significantly tempered by the better performance of the other aggregates. Similarly overshooting in the other aggregates has not been a matter of concern so long as M1 is under control. Recently the FOMC has tried to shift focus away from M1 and to give more weight in its deliberations to the behaviour of M2 (which corresponds more nearly to the UK's M3). The FOMC instruct the New York Fed to given equal weight in open market operations to the two aggregates, and have been very careful to avoid attaching importance in public to any one measure. There are also supporters within the Fed of M3. But the market are aware that the Feds forecasting and judgements stem primarily from M1 and the markets are probably sympathetic to monetarists' belief in the role of "narrow" money. There are, however, difficulties, other than presentational, in making the switch. Although M2 had had a better record in the last year or so (in the sense of moving more closely in accordance with the forecast derived from the Fed's own equations), this stability may be more apparent than real as the definition of M2 is unsatisfactory in a number of important aspects. M3, which is roughly equivalent to our measure of wider liquidity, has fewer deficits, but with present reporting procedures, the full figures do not become available quickly enough to be of use for operational purposes.

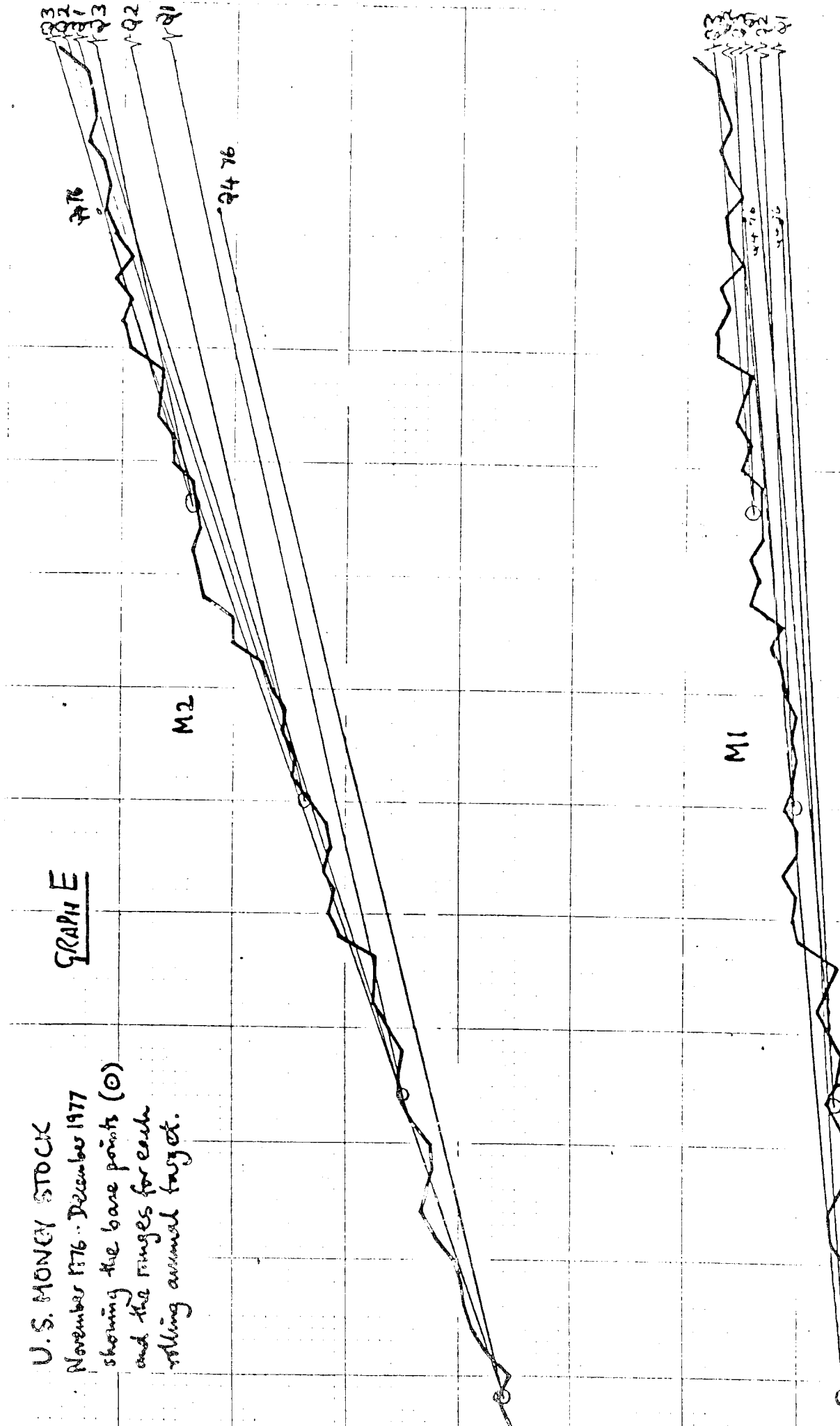
There is some evidence to suggest that rolling forward every 3 months adds to market nervousness as it implies the need for a policy review when this might not be necessary. However, market nervousness is certainly also increased as a result of publishing figures for the monetary aggregates as often as each week, and it is difficult to disentangle the two effects.

US Money Supply Growth Since Q3 1976

<u>Base Quarter</u>	<u>Target Set %</u>	<u>Growth at an Annual Rate %</u>	
		<u>to Q3 1977</u>	<u>to Q4 1977</u>
<u>I. M1</u>			
Q3 1976	4½-6½	7.4 (4 quarters)	-
Q4 1976	4½-6½	7.5 (3 quarters)	7.3 (4 quarters)
Q1 1977	4½-6½	9.2 (2 quarters)	8.4 (3 quarters)
Q2 1977	4-6½	9.5 (1 quarter)	8.2 (2 quarters)
Q3 1977	4-6½	-	6.7 (1 quarter)
<u>II. M2</u>			
Q3 1976	7½-10	10.9 (4 quarters)	-
Q4 1976	7-10	10.1 (3 quarters)	9.5 (4 quarters)
Q1 1977	7-9½	10.0 (2 quarters)	9.3 (3 quarters)
Q2 1977	7-9½	10.8 (1 quarter)	9.2 (2 quarters)
Q3 1977	6½-9	-	7.6 (1 quarter)

U.S. MONEY STOCK
 November 1976 - December 1977
 showing the base points (○)
 and the ranges for each
 rolling annual target.

GRAPH E



1976
 11/18 11/22 11/26 11/30 12/4 12/8 12/12 12/16 12/20 12/24 12/28 1/1 1/5 1/9 1/13 1/17 1/21 1/25 1/29 2/2 2/6 2/10 2/14 2/18 2/22 2/26 2/28 3/2 3/6 3/10 3/14 3/18 3/22 3/26 3/30 4/3 4/7 4/11 4/15 4/19 4/23 4/27 5/1 5/5 5/9 5/13 5/17 5/21 5/25 5/29 6/2 6/6 6/10 6/14 6/18 6/22 6/26 6/30 7/4 7/8 7/12 7/16 7/20 7/24 7/28 8/1 8/5 8/9 8/13 8/17 8/21 8/25 8/29 9/2 9/6 9/10 9/14 9/18 9/22 9/26 9/30 10/4 10/8 10/12 10/16 10/20 10/24 10/28 11/1 11/5 11/9 11/13 11/17 11/21 11/25 11/29 12/3 12/7 12/11 12/15 12/19 12/23 12/27 12/31 1977

Annex 6

MONETARY TARGETS: THE CHOICE OF TARGET VARIABLE

1. The reformulation of the monetary targets is an opportune time to examine again the range of possible target variables. This note describes the characteristics of each of the monetary aggregates in order to provide a background for the selection of a target variable or target variables. They are summarised in the chart at the end by reference to the criteria set out in the main note.
2. There are, for the United Kingdom, five definitions of the money supply (M1, M2, £M3*, Wider Liquidity (M5) and the "monetary base") and two definitions of credit creation (domestic credit expansion and global credit creation) that could in principle be used, or developed for use, as target variables. Each has advantages that have led to its adoption by at least one major country. Each also has disadvantages that mean that no single one can serve as the sole criterion for assessing the effect of monetary flows on the economy. It would, however, be impracticable to attempt to achieve targets for all of them, and no clear framework exists which we could use to monitor their behaviour systematically as a guide to policy.
3. Before considering each variable separately, there is a distinction to be made between using an aggregate as a control variable and as an indicator. The case made for the use of some variables in both theoretical literature and in practice in some countries rests, at least in part, on that monetary aggregate's usefulness as an early indicator of the direction the economy is taking. In the United Kingdom other more direct indicators of activity and inflationary pressures are available for use as soon as monetary indicators and consequently most people attach relatively little importance to the use of the latter for this purpose. Alternatively an aggregate may be held to provide an early indication of the present thrust of monetary policy while not necessarily being the most appropriate target or policy variable for the authorities to use. Some measures of money and credit serve as speedometers,

*We exclude M3 which includes UK residents' foreign currency deposits, a quantity not directly influenced by UK policy.

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others may have more direct linkages with activity and so serve as an accelerator or brake; whether a monetary variable should be regarded as an indicator or a target variable depends on the view taken of the direction of causation; does this run in the main from income to money, or is there a strong link in the opposite direction? Differing views are held about causation; and even when no direct transmission mechanism can be identified through which a monetary quantity affects real variables, it may still do so through its effect on expectations.

4. There are two main views about how monetary quantities effect activity and prices. One school emphasises the role of liquidity in influencing expenditure decisions on the ground that money and near moneys are close substitutes for each other. Some place special emphasis on additions to liquidity - they view increments to credit as corresponding directly to additions to aggregate demand. They all however give weight to the behaviour of the wider monetary aggregates as determinants of income and inflation.

5. In contrast is the view that money works primarily through shifts in interest rates and relative prices in influencing activity and inflation. This gives special weight to monetary assets yielding a zero or small (and inflexible) rates of interest since these are likely to be held for transactions purposes and lack good close substitutes. It can be argued that the demand for such assets will depend upon the level of economic activity and general level of interest rates as perceived by the holder since this is the opportunity cost of holding them rather than assets earning an explicit return. On this view, supposing the system to be in equilibrium initially, an increase in the money supply (narrowly defined) will lead holders to switch their excess balances into other assets and increased expenditure. Activity expands and prices rise until the demand and supply of money are equilibrated.

6. This brief description of two complex approaches does not do justice to either but may serve to make the following points:

a. There is no conclusive reason and certainly no conclusive evidence for adopting either to the exclusion of the other; both the wide and narrow definitions of the money supply may offer worthwhile information to the authorities.

b. Fluctuations in wider liquidity measures can be expected

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to have a fairly direct effect on activity although this may be eroded over time as new channels develop through which funds can flow;

c. Fluctuations in the money supply, more narrowly defined, will have an impact on output and prices extending into the longer term. This impact will depend on how close a substitute narrow money is for other financial assets and thus on how large changes in interest rates are, as well as on the interest elasticity of expenditure;

d. It would be unlikely that the behaviour of wide and narrow definitions of the money stock - once allowance has been made for the effects of interest rate changes - would differ greatly other than in the short term.

A M1 - the narrow definition of the money supply

7. M1 is used as a target and indicator of monetary stance in the United States, in most South American countries and elsewhere. Econometric work by the Bank of England suggests that the relationship between M1, nominal income and interest rates is closer and more stable than similar relationships for £M3 , which need also to take account of the rate of interest on time deposits and the behaviour of the banking system. Interpreting such evidence is difficult. Hitherto in the United Kingdom M1 has been seen as demand determined; using M1 as a policy variable might lead to this apparently stable relationship breaking down. The United States has placed considerable emphasis on M1 as a monetary target, in part at least because of the closeness of its relationship with nominal income. Their experience in the past year has illustrated the problems which arise when previously established behavioural relationships break down; as a result the monetary authorities have found the movements in M1 difficult to interpret, and policy decisions therefore more complicated.

8. The case made for considering a narrow definition of the money supply as a policy variable follows from the arguments in paragraphs 4-6 above. By concentrating on deposits which are transferable or withdrawable on demand without interest penalty, it serves as the monetary aggregate which in the main measures the amount of funds

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immediately available for transactions, and it reduces the area of confusion between the demand for transactions balances and the demand for financial assets as part of a wider demand for forms of holding wealth. There is in principle a fairly clear cut distinction between M1 and wider definitions. But in practice this is more blurred than it seems; there is a substantial interest bearing element in M1 as presently defined and some other balances - eg clearers seven day deposits and credit facilities such as Access and Barclaycard are close substitutes

9. The chief short term method of controlling M1 open to the monetary authorities is through buying and selling public sector debt in order to vary interest rates. Advocates of M1 see this as an advantage: if the money supply is growing too rapidly interest rates should be raised. There can, however, be lags between interest rate changes and changes in M1; and other methods of seeking to influence financial conditions (cutting the PSBR or restricting bank advances) have no clear effect on M1, either in the short or the long term. It is therefore hard to control M1 by any route with any short run precision.

10. In countries where monetary policy is operated to some extent independently of fiscal policy, there is a tendency to favour M1 as a target variable because it is rather more susceptible to control through strictly monetary measures than wider definitions of the money supply. Such arguments are not relevant in the UK, where the development of monetary and fiscal policy is in general closely articulated.

B M2

11. M2 would consist of M1 plus "retail" sterling time deposits of UK residents. It would exclude certificates of deposit and other large "wholesale" deposits on the grounds that these should be seen primarily as financial assets rather than transactions balances (in addition the volume of these large deposits may at times be strongly affected by the banks' behaviour without the underlying liquidity of the system being affected); thus M2 would comprise broadly the transactions balances and first line liquidity of the personal and industrial and commercial company sectors which influence real output and expenditures. It can be argued that M2

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could be developed as a more attractive measure of transactions balances than M1 - though it might be necessary to consider changes in its definition: for example there could be a case for excluding all public sector deposits (which do not, after all, affect public expenditure decisions) and for including building society deposits (which play a part in influencing personal sector expenditure).

12. This definition of the money supply, however, does include financial assets which pay rates of interest that are both significant and variable. As such it may be seen as a compromise variable: the two approaches to the transmission mechanism between money and nominal income outlined above emphasising transactions balances and liquidity can both find something attractive in this definition of the money supply (and, by the same token, both will find that it either goes too far or not far enough). Some outside observers, including Greenwells, have urged the development and adoption of an M2 target and it may be worthwhile, when opportunity offers, to discuss with the banks the feasibility of collecting the necessary data on a monthly basis. However, statistics on M2 in the United Kingdom have not been collected since 1971. It could not be used as a target variable until a back series had been calculated, or until a run of figures had been accumulated over the next three or four years and careful study would be needed to see whether the econometric evidence supported the a priori arguments for choosing it as a target.

C £M3 - the wider definition of the money supply

13. Sterling M3 is the aggregate to which policy has mainly been directed in Britain and with which British commentators and analysts are most familiar. It consists of M1 plus all other sterling deposits (including time deposits) of UK residents in both the private and public sectors, including sterling certificates of deposit. It is relatively easy to define being confined to the banking system. Moreover the relationship between monetary and other aspects of economic policy is at its closest when £M3 is the target variable, which is why most emphasis was placed on it when monetary guidelines were introduced. Movements in £M3 can be directly linked to the PSBR (as a measure of the Government's

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fiscal stance), external flows (essentially the private sector balance of payments on current and capital account), bank lending and debt sales. However, these links are through identities rather than behavioural relationships so that a change in the PSBR cannot be expected to result in a one-for-one change in £M3 . Moreover, it is clear that bank advances, at any rate in the short run, can grow more quickly than M1 or even M2; and that neither of the two narrower definitions of the money supply adequately measures the liquidity constraints on the economy.

14. There are technical and conceptual difficulties in using £M3 , which arise either because of rigidities in bank behaviour or because of the close substitutability between bank deposits and other liquid assets which are liabilities of the government rather than the banks. The most extreme example was "round-tripping" - companies took advantage of lower interest rates on their overdraft facilities (related to bank base rates) than the interest rates they could earn on wholesale time deposits and CDs (related to money market rates) to borrow money and lend it back to the banks, thus inflating the money supply. This situation arose when monetary policy was tightened by calls for special deposits and banks reacted by liability management - selling CDs in order to bid for reserve assets - rather than by reducing lending and raising base rates promptly. Even without the added difficulties created by the banks' slowness in adjusting base rates, a tightening of monetary policy can still have perverse consequences, since banks will prefer in the short run to bid for reserve assets held outside the banking system rather than cut back on lending to customers. As a result of the personal and company sectors substituting bank deposits for Treasury bills, very short gilts etc, £M3 tends initially to grow more rapidly as a consequence of moves by the authorities to tighten bank liquidity.

15. To overcome this problem of the perverse response of £M3 the authorities have developed a direct control on the growth of banks' balance sheets as an addition to the more conventional methods of monetary control. The use of supplementary special deposits which are based on movements in banks' interest-bearing liabilities (ie those within £M3 but mostly outside M1) helps the short run growth of £M3 to be controlled over a period. Given

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the weight that markets place on seeing monetary targets achieved, this may be important. There are however drawbacks to the use of SSDs: they restrict competition and encourage the development of parallel mechanisms for channelling funds other than through the banking system. Moreover, to the extent that they cause the personal and company sectors to reduce their bank deposits (and CDs) and take up instead other assets which fall outside £M3 but within Wider Liquidity, it is questionable whether there is any underlying change in economic conditions.

16. A further problem with the use of £M3 is that it does not include deposits of the public with the building societies despite the fact that in parts of the United Kingdom these deposits are interchangeable, from the viewpoint of their holders, with bank deposits. As far as the holders are concerned it is hard to see how building society deposits should be regarded as having less of the attributes of money than time deposits in banks; building society deposits are equally liquid, generally earn better interest, and building society offices are open longer hours than banks.

17. A rather different complaint against £M3 (and also against M3 on which attention was formerly concentrated) is that econometric work on the relationships between it and macroeconomic variables has shown that these do not amount to a simple and stable demand function. Work done by the Bank of England has tended to support the findings of other researchers that there has been a break in these relationships since about 1972 or 1973. Recent rapid changes in the structure of financial institutions and in the way the authorities seek to influence or control them, combined with the sharp acceleration in inflation in recent years, seem all too likely to have invalidated previously satisfactory reduced form approaches. Thus targets for £M3 have to be set in the context of a detailed "structural" approach to forecasting financial flows alongside forecasts of output, expenditure and prices, in which allowance can be made for both the demand and supply factors affecting this broad definition of money.

D M5 - Wider Liquidity

18. Wider Liquidity (M5) consists of M3 plus short term financial assets such as Treasury and local authority bills, building

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society deposits and National Savings. If liquidity is viewed as the route by which monetary policy affects the rest of the economy, then M5 is both an appropriate indicator of monetary stance and the appropriate policy variable to operate to make that policy effective.

19. There are three drawbacks to the use of M5, two practical and one theoretical. Information on all the components of M5 is not available in respect of the same periods (other than calendar quarters), so that any attempt now to produce a monthly series is bound to rely on a conflation of inconsistent elements (banking months for the component falling within £M3 and calendar months for the rest). Secondly, the linkages between M5 and movements in external flows, the PSBR etc are less clear than those with £M3 but this reflects in part the emphasis given to £M3 in the past.

20. The objection based on economic theory to using M5 as an indicator of monetary stance is that it encompasses elements of financial assets held as wealth rather than for transactions purposes. These assets, though short term in themselves, are held on a long term basis as part of decisions on portfolio allocation. As such they are, at least arguably, different from money, and the relationship between this possibly large element of M5 and economic activity and prices will be different from the relationships between the latter and money more narrowly defined. However, the force of this objection should not be overstated; the significance of financial assets is bound to be influenced by the type of financial institution responsible for their creation and the sectoral distribution of their holders as well as their maturity. Real spending can equally well be influenced by the deposits of small investors in building societies (in M5 but not £M3) as by large firms' holdings of longer dated CDs (in £M3 but in fact less liquid than building society deposits).

E The Monetary Base

21. The IMF raised with us the possibility of monitoring the growth of the money supply through the use of a monetary base concept*.

*A paper on this topic was prepared by the Bank of England in response to this suggestion and is available.

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However, for such an indicator to serve as the major focus of attention monetary control would have to rest on the volume of central bank liabilities to the commercial banking system, which would in its turn reflect either monetary financing of the CGBR or the operation of the Exchange Equalisation Account. Since only the London clearing banks are required to keep deposits with the Bank of England, and since the required average level of these deposits is adjusted only at monthly intervals, the assets falling within the definition of monetary base do not in practice serve as a useful indicator of monetary developments more generally or play any large part in UK monetary control.

22. This is in sharp contrast with arrangements in Germany where the Bundesbank places the main emphasis on the behaviour of "central bank money" (a concept which weights differently the components of the money supply widely defined). The Bundesbank are able to do this because they have regular information about changes in central bank money (and the balance sheet changes which give rise to these); and the creation of central bank money is not mixed up (as it is in the UK) with residual finance of the central government. Since it would be absurd for us to announce the introduction of a target variable which has no operational significance, our use of a target rate of growth for the monetary base would require a major change in our system of controlling the money supply.

F Domestic Credit Expansion - DCE

23. The ceilings to which we are officially committed by our agreement with the IMF relate to DCE. This is intended to provide a measure of domestically created money supply. DCE can be defined as the PSBR, less sales of public sector debt outside the banks plus bank lending in sterling to the private and overseas sectors. The difference between DCE and M3 is - broadly speaking - the balance of payments of the private sector. So, if a country is in balance of payments deficit, DCE will be greater than M3 and vice versa.

24. The importance of DCE thus depends on the external position. If the supply of domestically created money is kept below the amount which the public wants to hold it would induce inflows

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from overseas. By one route or another restricting DCE would contribute towards a process of bringing about an improvement in the balance of payments. It is thus an important policy variable when monetary policy is directed primarily to external objectives. M3 would have the disadvantage in these circumstances that a growth objective for it could be met in part - for a time at least - by increasing the external deficit.

25. When the external position is as strong as it has been during the past year DCE ceases to become an effective constraint. Moreover it is not always easy to disentangle the direction of causality. A very strong external position creates good conditions for selling public sector debt and reduces the need for domestic bank lending; it thus brings about conditions in which DCE may be relatively low. On the other hand, if the growth of DCE is kept below the growth in the demand for money, the external position will tend to strengthen further.

26. In practice both effects can operate at the same time and interact with each other; but as long as we have specific objectives for the balance of payments and the exchange rate DCE can provide useful information about the relation of monetary policy to those objectives.

G Global Credit Expansion - GCE

27. The Italian authorities have defined a concept known as global credit expansion: it consists of the total public sector borrowing requirement plus the gross increase in total domestic, industrial, commercial and private sector borrowing. It is not, however, a sort of "DCE for M5", because the instruments used to finance this borrowing may be long term ones. This is a concept which fits in with flow of funds analysis for the economy as a whole. It is probably true that the problems of managing the economy are increased the larger is GCE as a proportion of GDP; but an analysis of this sort is only tenuously related to the fixing of objectives for the growth of monetary aggregates.

	Relevance given concentration on internal objectives (output and prices)	Controllability in a way which helps policy	Articulation with other policies	Availability of timely statistics	Robust Econometric Relationships
M1	M	M	L	H	M/H
M2	M	M	M	none	(no data)
M3	M	M	H	H	L/M
M5	M	M	M	L	(studies needed)
MB	none	none	L	H	(not relevant)
DCE	L	M	H	H	L/M
GCE	L	uncertain	L	L	(no information)

H = high

M = medium

L = low