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No 23

Breaks in monetary series

by

S L Topping

with S L Bishop

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The object of this Technical Series of Discussion Papers is to give wider circulation to research work carried out in the Bank, and to invite comment upon it; any comments on this paper should be addressed to the Money and Banking Aggregates Group, Financial Statistics Division, Bank of England, London EC2R 8AH.

This paper, prepared in the Financial Statistics Division, draws on the work of many members of the Division past and present. It is largely the work of Simon Topping of the Money and Banking Aggregates Group and Simon Bishop, a vacation student from Magdalen College, Oxford, working in the Bank during the summer of 1988, but a number of other members of the Division made an important contribution, in particular Colin Mann, and also John Thorp, Peter Bull and various members of the Money and Banking Aggregates Group and the Banks' Balance Sheets Group (principally Toby Davies and Philip Isaacs, a vacation student from St John's College, Oxford). The paper also benefited from comments from the Bank's Economics Division and from HM Treasury.

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BREAKS IN MONETARY SERIES: CONTENTS

LONG RUNS OF MONETARY DATA 1963-1988

A booklet containing long runs of monetary data has been produced as a companion piece to this paper and is available free of charge from the Money and Banking Aggregates Group, Financial Statistics Division, Bank of England EC2R 8AH. The data are also available in disk form, for which there is a charge of £25 plus VAT; further information on this service is obtainable by writing to the above address. A selection of the long run series also appeared in the January 1989 edition of 'Financial Statistics' published by the Central Statistical Office.

BREAKS IN MONETARY SERIES

INTRODUCTION

Most monetary data now cover a period of more than 25 years. Over that period there have been many changes in the banking field, as well as changes in the scope of the statistics collected from banks and other financial institutions. These changes have given rise to a number of breaks in the data series. The purpose of this paper is to bring together in one place information about these breaks so as to assist users of these data in interpreting the series.[1] The paper draws together existing information which was spread over a large number of individual publications, principally back copies of the Bank of England Quarterly Bulletin. It does not attempt to supply any essentially new information, although the process of bringing the information together should make it more illuminating; nor does it attempt to fill any gaps in data coverage, except to the extent that where possible it provides a consistent quantification of the breaks.

Section 1 of the paper considers the question 'What are breaks in series and why do they occur?', and explains how transactions series are constructed so as to eliminate as far as possible their effect on flows. The discussion covers each of the main types of break, such as changes in sectoral classification and changes in the reporting system or in the reporting population, and ends with a brief discussion of the treatment of foreign currency items, on which there is further detail in Annex 6.

Section 2 notes some further points about breaks, including the question of the calculation of growth rates around a break, which is considered in greater detail in Annex 7.

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1 There will no doubt be further changes in the future that will give rise to more breaks, and it is hoped that from time to time this paper can be brought up to date.

Section 3 notes some points about adjusting for breaks. No official break-adjusted series are produced, the choice of whether to or how to eliminate breaks being left to the individual.

Section 4 outlines the availability of monetary data. Many series are available in both levels and flows terms from 1963, while calendar-month series are available from mid-1982, and monthly average M0 from mid-1969.

Section 5 explains how the definition of a break which is adopted in the next sections of the paper was arrived at and outlines the size and nature of the major breaks.

The main statistical section of the paper follows as Annex 1. This is a series of tables showing all breaks of at least 0.1% in the respective series, including their 'sectorisation' into the economic sectors of 'other financial institutions' (OFIs), 'industrial and commercial companies' (ICCs) and 'persons'. Annex 2 then presents explanatory notes on the breaks. Temporary distortions to the series, such as the effects of share sales or privatisations, are considered in Annex 3. Strictly speaking, the distortions described in Annex 3 are not breaks, but they often occur at the same time as breaks, or are of equal interest to time series analysts, so they have been included for completeness.

Annex 4 shifts the focus on to "banking" rather than "monetary" series and outlines changes in the content and presentation of these series over a number of years ("banking" series are those which are derived from the aggregate banking balance sheet, as opposed to "monetary" series which concentrate on the monetary aggregates and may also incorporate information from sources other than the banking balance sheet). Annex 5 considers the 'special case' of the Trustee Savings Banks. Their inclusion in the monetary sector in 1981 caused the largest single break in most series. The presentation of their balance sheet prior to 1981 underwent several changes which makes analysis of their earlier figures difficult. Annex 5 catalogues these changes.

The paper concludes with a section listing further references, principally in the Bank of England Quarterly Bulletin.

WHAT ARE BREAKS IN SERIES AND WHY DO THEY OCCUR?

Breaks are most obvious when a series is presented both in terms of levels (that is, amounts outstanding) and flows (usually changes in the amounts outstanding). Typically a break is characterised by the flow not being equal to the difference between the levels at the beginning and end of the period to which the flow relates. But breaks are not always as obvious as this. The most common types of breaks in series are described in more detail below.

It is sometimes asked why series are not published which are free of breaks. One difficulty with this is that the evolution of the financial system is a continuous process. For example, the Trustee Savings Banks have changed from being an arm of the National Savings movement in the early 1960s to being a clearing bank in the 1980s. There is no exact moment when the TSBs became a bank for purposes of economic analysis (although in the statistics this moment is taken to be 1981; see Annex 5 for further detail). In general, there is no uniquely correct way to reflect such gradual evolutionary processes in the data.

Another difficulty is that there is more than one way of adjusting a series to try to remove the effect of breaks, and the choice of method depends upon the type of analysis which is to be applied to the series. One of the main purposes of this paper is to make it easier for the analyst to make the appropriate choice, and to supply the information that is required. But it would be a mistake to assume that it is possible to eliminate breaks altogether by astute use of this information.

The most common types of break arise from changes in sectoral classification, changes in the reporting systems of banks and other institutions, and sometimes both. Breaks can also occur as a result of a change in the definition of a variable.

Series of flows are constructed so as to measure transactions, rather than just changes in amounts outstanding. Thus, if the population of institutions reporting at the beginning and end of a particular period is different, there will be a change in the

amounts outstanding even if no net transactions have taken place in the economy. The series of flows are constructed so as to eliminate this effect. Usually, the flows are constructed by calculating the change in amounts outstanding for all those banks which reported at both the beginning and end of the reporting period. This practice means that changes in the reporting population are incorporated immediately in levels but are excluded until the next reporting period from the flows.

Small breaks in series occur in almost every period, because the population of the monetary sector, ie, of the institutions whose returns, together with those of the building societies, form the basis of the monetary statistics, is constantly changing. Large breaks occur less often; examples are the switch in 1981 from the "banking sector" to the "monetary sector" which was a response to the introduction of the Banking Act 1979, and the introduction of over 40 new contributors to the statistics in 1983. In this paper attention is concentrated mainly on the "large" breaks. To some extent the choice of what is a large or small break is arbitrary. The cut-off point chosen here is that the effect of the break should be to change the level of the amounts outstanding concerned by at least 0.1%.

Breaks can also originate outside the monetary sector, even when the reporting population of banks does not change. This is usually because there has been a change in the composition of some other economic sector. Typical examples of this are the transfer of entities from the public to the private sector, such as of British Telecom (in 1984), British Gas (in 1986) and British Steel (in 1988). In cases such as this, for example, the increases in private sector deposits that arose from these changes were excluded from the recorded flows. Changes in the residential status of a company would similarly affect the figures.

Breaks can also arise from changes in the reporting system itself. A change in the coverage of the reporting forms, or a change in the definition of the items on the forms, can lead to breaks in series.

A further type of reclassification which is particularly difficult to deal with is a change in the terms on accounts, causing them to

cross the boundary defining an aggregate (certain building society accounts, where the period of the notice required for withdrawal of deposits was significantly reduced, provide recent examples of such effects on M2).

Another event that can give rise to breaks is a change in the reporting dates themselves. This has not arisen with calendar quarterly series, which have always been constructed from end-quarter data, although sometimes estimates have been made based upon information obtained at other dates. But it has arisen, for example, with the change in 1986 from mid-month to end-month reporting dates for monthly series. This introduced breaks in the series of flows for the quarterly analysis of bank advances (which was previously constructed from mid-month reporting dates), because the period in which the change was made was longer than one quarter.

The discussion so far ignores another way in which the differences between amounts outstanding are not the same as the flows. This arises when a series expressed in sterling includes a component which is denominated in a currency other than sterling, or a variable price instrument, and hence can change in value with changing exchange rates or prices even if no transactions take place. Where practicable, the estimated effects of these changes in value are removed when the flows are calculated. For foreign currency items, end-period levels are adjusted for population changes and then broken down into 10 individual currencies. Each component currency is translated from its sterling value to its domestic currency using end-period exchange rates, the flows calculated and then translated back into sterling using average period exchange rates. The total foreign currency value adjusted flow is the sum of the value adjusted flows produced for the 10 individual currencies.

Such series are not usually thought of as containing breaks as such, and no attention is drawn to these effects in this paper. However, attention is drawn to the break that occurred at the time of the devaluation of sterling in 1967 (at a time when exchange rates were usually held fixed), and to the breaks in the flows series that occurred when the regime of "floating" exchange rates began in 1971 and when the current method of calculating flows was introduced, belatedly, in 1975 (see Annex 6).

OTHER POINTS TO NOTE ABOUT BREAKS

In deciding how to present a break in official publications, three considerations need to be kept in mind: first, the appropriateness of leaving a break in the series, or, alternatively, of smoothing it away by adjusting earlier statistics; second, the availability of information to smooth it away; and, third, the propriety of adjusting earlier statistics (a decision which must take into account the requirement not to reveal confidential information about individual reporting institutions and their customers).

It is usual to be able to estimate the amounts outstanding at the time of a break on both the old and new bases, but it is usually not possible to provide a run of figures on both bases. This is because the reporting burden on the reporting institutions of providing two sets of figures would be too great. Thus the old and new series of amounts outstanding usually overlap by only one observation. For example, for the major break in series in November 1981 when the banking/monetary sector was redefined, two sets of returns were completed and two sets of figures published. On occasions, however, there have been longer overlaps. When there was a change in the definition of PSL2 (now M5) in 1986 which did not require any new information from the reporting institutions, series on the old and new bases were calculated for an overlap period of two years (the series on the new basis has since been extended back to 1963). Similarly, in the case of the redefinition of the PSBR and monetary aggregates to exclude public sector deposits in early 1984, and to exclude public corporations' holdings of notes and coin in early 1988, it was possible to publish a long series of back numbers on the new basis.

In the case of institutions newly joining the reporting population it is not practicable to adjust earlier figures, for lack of information about their business. This consideration, however, would not have applied to the TSBs, which had been providing statistical returns for a number of years. But whether it would have been appropriate to adjust back figures for their business is open to question. Their statistical history in the 1970s (part national savings institution, part non-bank financial institution) suggests a long period of evolution towards banking status (see

Annex 5). It is possible to smooth them in from published material, if one wants to. But the official published monetary aggregates are based on returns from banking/monetary sector institutions as defined at the time and do not impose a path for their absorption into the sector.

Although the flows series exclude the effect of the break in the time period it occurs, there is nevertheless a break in the flows series itself, arising from the fact that the new reporting population may have different behavioural characteristics from the old. There is no easy way in which this can be corrected for, in the absence of any further information.

Because there is a "behavioural" break in flows series, there is also a problem in calculating growth rates over periods which span the break. For example, the growth in the year which starts six months before the break and ends six months after it will include, in the second six-month period, growth arising from the activities of the new reporting banks. It is also not clear what the appropriate level should be to act as the denominator in the calculation of the percentage growth rate. The current statistical practice is simply to sum the flows over the 12-month period, and divide by the level at the start of the period; but the level at the start of the period, which applies to the old reporting population, may be too low and lead to an overstatement of the 12-month growth rate. One alternative to this would be to compound the 1-month growth rates, each of which would accurately measure the growth in the month in question. This would solve the problem of which level to choose as the denominator, though not the problem of the change in behaviour of the series. The question of growth rates is considered in greater detail in Annex 7.

One problem that has not so far arisen in the monetary data is that of missing observations. There are however such problems in other financial data (for example, the gaps that appeared in some series at the time of the Civil Service strike in 1981).

ADJUSTING FOR BREAKS

If one decides to adjust a series to remove the breaks there is no unique way of doing so, as the choice of the approximation one chooses in eliminating the break may depend upon the use to which the figures are to be put.

Adjustment for breaks is usually retrospective; in other words it will change the series up to the break in some way or another. However, if the series is one that has been targeted or is assumed to have influenced expectations, then the adjusted series may be of less interest than the raw series itself. Some series' properties will be invariant to the process of adjustment. Proportional smoothing, for example, preserves growth rates, which may be why it has been used so frequently with the monetary series. It is clearly a useful device in the presentation of the properties of a single series if the focus is on growth rates. However it would be inappropriate to treat in this way a number of series (each with breaks) if there was a balance sheet constraint between them. Moreover, proportional smoothing assumes that the addition to the population at a break was growing at the same rate as the reporting population prior to the break. Usually it is impossible to know whether this assumption is correct or not as past data are not available for the new reporters. Proportional smoothing, also, is probably not the correct adjustment to make for breaks arising out of changed reporting practices.

Given these difficulties, official 'smoothed' series are not produced.

THE AVAILABILITY OF MONETARY DATA

The raw material from which the banking statistics are compiled is the regular statistical returns which individual banks complete for supervisory and statistical purposes. These are collected, checked and aggregated in the Financial Statistics Division of the Bank of England, together with statistics from building societies (some of which are collected and aggregated by the Building Societies Commission) and statistics of public sector transactions (some of which come from HM Treasury and other Whitehall departments).

Aggregate monetary and banking statistics are published in monthly press releases, in the Central Statistical Office's publications 'Financial Statistics', 'Economic Trends', 'Monthly Digest of Economic Statistics' and 'Annual Abstract of Statistics', and in the Bank of England Quarterly Bulletin. Some series are also reproduced in the International Monetary Fund publication 'International Financial Statistics'.

The database from which these statistics are produced, and on which the tables in Annex 1 of this paper are based, covers the period from 1963 to the present day.[2] However, because the same reporting requirements have not been in place for the whole of this period, a full back-run for many of the series in current use, and in particular the detailed sectoral breakdowns, is not available.

In general the main quarterly series are available in both levels and flows terms from the first quarter of 1963. (Nearly all items are reported by the reporting institutions as levels; the appropriate flows are then computed by taking the difference in levels between reporting dates and making adjustments for changes in the reporting population, etc.) The sectorisation of these series into 'other (ie non-bank and in the context of M4 and M5 non-building society) financial institutions', 'industrial and commercial companies' and 'persons' is rather more recent, and the earliest period for which there are both levels and flows is the second quarter of 1975 (in general, flows are available prior to that date but not levels). However, as the sectorisation of notes and coin is available in flows terms but not in terms of levels, it is possible to sectorise only the deposits element of each of the monetary aggregates.[3] Hence, to take an example, the sectorisation of M1 'deposits' is a sectorisation of sight deposits rather than a sectorisation of the sum of sight deposits and notes and coin.

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2 Details of the availability of long runs of data in paper and disk form are given at the bottom of the contents page.

3 It is hoped that this can be remedied soon and the appropriate levels series produced (although this will have to be essentially on the basis of an agreed convention, as no precise data exist).

The calendar-month reporting system for banking statistics was introduced in October 1986. However, on the basis of an abbreviated end-month return which had been completed by the 90 or so largest banks for several years beforehand and the existing end-quarter statistics, it was possible to construct satisfactory calendar-month series back to mid-1982. The levels series begin at end-June 1982 and the flows series in July 1982. Before this date no information about calendar months (other than quarter months) is available, and no monthly series have been interpolated. No sectorised figures are available on a monthly basis as this additional detail is reported only quarterly.

Building society figures (which are included in the calculation of M2, M4 and M5) are from January 1987 derived from figures prepared by the supervisory body the Building Societies Commission on the basis of returns made to it by individual societies. Betweeen mid-1982 and end-December 1986 the figures were derived from different returns made to the Building Societies Association. Although the coverage and definitions of these two sources is broadly the same there are some breaks in series in the January 1987 flows. Quarterly statistics, based on the figures from the monthly returns supplemented by a quarterly return processed by the Bank of England, are available back to 1963.

This description covers nearly all the monetary and banking statistics. M0, however, is a special case as it is compiled as an average of the levels on the Wednesdays of each calendar month, with the changes being the difference between the average levels. Levels have been compiled from June 1969 and flows from July 1969; there is no sectorisation.

DEFINING A BREAK

The starting point for this exercise was to compare the flows for each series with the 'raw' changes in levels. For a series such as quarterly M3, to take an example, this reveals that in only 31 of the 103 quarters from 1963 Q2 to 1988 Q4 are the two exactly the same. However, in both absolute and percentage terms the difference in most of the time periods is extremely small, as is shown below.

Quarterly M3: Comparison of flows and changes in levels

Difference (between flow and change in level) as a % of the level	Number of time periods (cumulative)
Over 1.0%	2
over 0.5%	6
Over 0.1%	13
Over 0.05%	20
Over 0.01%	43
Greater than 0	72
Total number of quarters: (1963 Q2 - 1988 Q4)	101

The dividing line between what is and what is not regarded as a 'major' break is necessarily arbitrary. For the purposes of this exercise the cut-off which has been set is that any difference between the flows and changes in levels of at least 0.1% of the amount outstanding is regarded as a break and any difference of less than this size is disregarded. This means that, for example, a difference in the M3 figures would currently have to be about £200 million to qualify as a break, but would have had to have been only around £10 million in 1963.

Tables 2a and 2b in Annex 1 set out the absolute and percentage differences between levels and flows for M1, M2, M3, M4 and M5 for each period in which there is a break of 0.1% or greater in at least one of them. Breaks in M0 are shown separately in Table 1. The sectorisations which then follow (in Tables 3-8) show every time period in which there is a 0.1% break in the total series or in any of the sectors (eg a time period in which there is a break of 0.1% in OFIs' deposits is shown even if the change in the total deposits series is less than 0.1%).

The breaks shown have been derived from the non-seasonally adjusted series. The breaks in the seasonally adjusted series should be the same, although there are in some cases small differences.

THE MAJOR BREAKS IN THE MONETARY AGGREGATES

As noted above, there are 72 quarters from 1963 Q2 to 1988 Q4 in which there is a difference between the recorded flows and the change in levels for M3. Thirteen of these qualify as 'major' breaks because the difference is greater than or equal to 0.1% of the level. But only two are 'really big', if we take this to mean being equal to at least 1.0% of the level. The number of breaks of this size is extremely small, even if we consider all the aggregates and the M3 and M4 lending counterparts:

Breaks of at least 1.0%

Percentages	M0	M1	M2	M3	M4	M5	M3 lending	M4 lending
1971 Q4		+3.9						
1972 Q1				+2.1	+1.3	+1.0		
1975 Q2		+4.2						
1976 Q1		-1.5						
1981 Aug	-2.6							
1981 Q4		+6.4		+10.1	+5.9		+5.9	+3.3
1982 Q4			+4.4					
1984 Q4			-1.0					

The biggest break is in the fourth quarter of 1981, this being when the "monetary sector" was introduced in place of the "banking sector"; amongst others, this brought the TSBs into the monetary sector. In the case of M3 the break exceeds 10.0%. The break in the first quarter of 1972 is similar because it is also an example of new contributors joining the reporting population, most notably five large finance houses which were treated as banks from that date on. The break in M1 in the fourth quarter of 1971 was the result of new sources of information becoming available, while that in the second quarter of 1975 followed from the introduction of new statistical returns, and that in the first quarter of 1976 from a change in the notes and coin series. There is only one break of at least 1.0% in M0, which occurs in August 1981 when new monetary control arrangements were introduced. There are two in M2, in the fourth quarter of 1982 and the fourth quarter of 1984, both due to changes in the reporting population.

More details of these breaks - and of the others between 0.1% and 1.0% of the level - are given in the tables that follow and in the notes which form Annex 2. In some cases the match between the numbers and the words is not precise because the earlier breaks especially were not always well documented. The notes also contain details of some breaks which fall below the 0.1% cut-off but which are included nevertheless because they may be of use when interpreting the series.

ANNEX 1: TABLES DETAILING THE MAJOR BREAKS

INDEX

TABLE 1: BREAKS IN MONTHLY AVERAGE M0, 1969-1988
£mns, (%)
+ sign denotes flow lower than change in level

	M0	of which: Notes and coin	of which: Bankers' balances
1975 NOV	+ 8 (+0.1)	+ 8 (+0.1)	
1976 NOV	+ 10 (+0.1)	+ 10 (+0.1)	
1979 MAY	+ 12 (+0.1)	+ 12 (+0.1)	
1979 JUL	- 12 (-0.1)	- 12 (-0.1)	
1981 AUG	-323 (-2.6)		-323 (-53.3)
1983 APR	- 20 (-0.2)	- 20 (-0.2)	

TABLE 2(a): BREAKS IN QUARTERLY M1, M2, M3, M4 & M5, 1963 - 1988
£mns, (%)
+ sign denotes flow lower than change in level

		M1		M2		M3		M4		M5	
1967	Q4	- 72	(-0.9)			+ 91	(+0.7)	+ 91	(+0.4)	+ 88	(+0.3)
1971	Q4	+ 403	(+3.9)			- 9	(-)	- 9	(-)	- 9	(-)
1972	Q1	+ 57	(+0.5)			+ 409	(+2.1)	+ 409	(+1.3)	+ 408	(+1.0)
1973	Q1					- 93	(-0.4)	- 93	(-0.2)	- 181	(-0.4)
1975	Q2	+ 618	(+4.2)			- 139	(-0.4)	- 139	(-0.3)	- 142	(-0.2)
1976	Q1	- 266	(-1.5)			- 266	(-0.7)	- 266	(-0.5)	- 266	(-0.4)
1976	Q2									+ 125	(+0.2)
1980	Q1									- 144	(-0.1)
1981	Q4	+2,081	(+6.4)			+7,437	(+10.1)	+7,437	(+5.9)	+1,109	(+0.8)
1982	Q4			+4,476	(+4.4)					+ 44	(-)
1983	Q1	+ 17	(-)	+ 5	(-)	+ 587	(+0.6)	+ 587	(+0.4)	+ 604	(+0.4)
1983	Q4	+ 6	(-)	+ 575	(+0.5)	+ 150	(+0.2)	+ 150	(+0.1)	+ 151	(+0.1)
1984	Q4	+ 102	(+0.2)	-1,248	(-1.0)	+ 407	(+0.4)	+ 407	(+0.2)	+ 408	(+0.2)
1985	Q3			+ 236	(+0.2)	+ 14	(-)	+ 14	(-)	- 4	(-)
1986	Q1	+ 254	(+0.4)	+ 289	(+0.2)	+ 269	(+0.2)	+ 269	(+0.1)	+ 270	(+0.1)
1986	Q2			+ 346	(+0.2)	- 3	(-)	- 3	(-)	- 7	(-)
1986	Q3	- 48	(-0.1)	- 192	(-0.1)	- 189	(-0.1)	- 190	(-0.1)	- 186	(-0.1)
1986	Q4	+ 383	(+0.5)	- 107	(-0.1)	+ 973	(+0.7)	+1,108	(+0.4)	+1,664	(+0.6)
1987	Q1	- 10	(-)	+ 754	(+0.4)	- 111	(-0.1)	+ 382	(+0.1)	- 491	(-0.2)
1987	Q2							- 277	(-0.1)	- 277	(-0.1)
1988	Q1			-1,535	(-0.8)	+ 111	(+0.1)	+ 111	(-)	+ 154	(-)

1988 01 -1,333 (0.0) [illegible]

TABLE 2(b): BREAKS IN MONTHLY M1, M2, M3, M4 & M5, 1982 - 1988
£mns, (%)
+ sign denotes flow lower than change in level

	M1	M2	M3	M4	M5
1982 OCT		+4,478 (+4.4)			
1983 MAR	+ 16 (-)	+ 4 (-)	+ 586 (+0.6)	+ 586 (+0.4)	+ 597 (+0.4)
1983 OCT		+ 468 (+0.4)			
1983 NOV	+ 360 (+0.8)	+ 98 (+0.1)	+ 360 (+0.4)	+ 360 (+0.2)	+ 360 (+0.2)
1983 DEC	- 354 (-0.8)	+ 9 (-)	- 210 (-0.2)	- 210 (-0.1)	- 210 (-0.1)
1984 OCT		- 694 (-0.5)			
1984 NOV		- 555 (-0.4)	+ 324 (+0.3)	+ 324 (+0.2)	+ 324 (+0.2)
1984 DEC	+ 103 (+0.2)		+ 84 (+0.1)	+ 84 (-)	+ 84 (-)
1985 AUG		+ 236 (+0.2)			- 7 (-)
1986 MAR	+ 255 (+0.4)	+ 290 (+0.2)	+ 270 (+0.2)	+ 270 (+0.1)	+ 270 (+0.1)
1986 MAY		+ 213 (+0.1)			
1986 SEP	- 49 (-0.1)	- 29 (-)	- 190 (-0.1)	- 190 (-0.1)	- 189 (-0.1)
1986 DEC	+ 377 (+0.5)		+ 965 (+0.6)	+1,101 (+0.4)	+1,658 (+0.6)
1987 JAN		+ 754 (+0.4)		+ 493 (+0.2)	- 379 (-0.1)
1988 MAR		-1,531 (-0.8)			
1988 DEC	+ 27 (-)		+ 294 (+0.1)	+ 294 (+0.1)	+ 293 (+0.1)

TABLE 3: BREAKS IN QUARTERLY 'M1 DEPOSITS' BY SECTOR, 1963-1988
£mns, (%)
\+ sign denotes flow lower than change in level

(No sectorisation of levels available prior to 1975 Q3)

(Sterling sight bank deposits held by the UK non-bank private sector; M1 itself includes also notes and coin held by this sector.)

	Total	of which OFIs	ICCs	Persons
1967 Q4	- 71 (-1.3)			
1971 Q4	+ 402 (+6.0)			
1972 Q1	+ 57 (+0.8)			
1975 Q2	+ 725 (+7.8)			
1981 Q4	+2,138 (+9.4)	+ 38 (+1.3)	+115 (+2.6)	+1,985 (+12.8)
1983 Q1	+ 22 (+0.1)	+ 2 (-)	+ 7 (+0.1)	+ 13 (+ 0.1)
1983 Q3		+ 8 (+0.2)	- 10 (-0.2)	+ 2 (-)
1983 Q4	+ 6 (-)	+ 10 (+0.2)	- 6 (-0.1)	+ 2 (-)
1984 Q1		+ 9 (+0.2)	- 12 (-0.2)	+ 3 (-)
1984 Q4	+ 102 (+0.3)	-119 (-1.9)	+106 (+1.5)	+ 115 (+ 0.5)
1985 Q1	+ 12 (-)		+ 12 (+0.1)	
1986 Q1	+ 254 (+0.5)		+254 (+2.8)	
1986 Q3	- 30 (-0.1)	+229 (+2.4)	- 53 (-0.6)	- 206 (- 0.6)
1986 Q4	+ 377 (+0.6)		+378 (+2.9)	- 1 (-)
1987 Q4	+ 81 (+0.1)		+ 81 (+0.5)	

TABLE 4: BREAKS IN QUARTERLY 'M3 DEPOSITS' BY SECTOR, 1963-1988
£mns, (%)

(Sterling bank deposits held by the UK non-bank private sector; M3 itself includes also notes and coin held by this sector.)

\+ sign denotes flow lower than change in level

(No sectorisation of levels available prior to 1975 Q3)

	Total	of which			
		OFIs	ICCs	Persons	
1967 Q4	+ 92 (+ 0.8)				
1972 Q1	+ 409 (+ 2.6)				
1973 Q1	- 92 (- 0.4)				
1975 Q2	- 32 (- 0.1)				
1975 Q4	- 14 (-)	- 3 (-)	- 10 (-0.1)	- 1 (-)	
1981 Q1	+ 50 (+ 0.1)		+ 50 (+0.4)		
1981 Q4	+7,494 (+11.7)	+ 339 (+4.3)	+1,079 (+6.7)	+6,076 (+15.2)	
1983 Q1	+ 592 (+ 0.7)	+ 12 (-)	+ 520 (+2.9)	+ 60 (+ 0.1)	
1983 Q3		+ 12 (-)	- 23 (-0.1)	+ 11 (-)	
1983 Q4	+ 150 (+ 0.2)	+ 9 (-)	+ 107 (+0.5)	+ 34 (+ 0.1)	
1984 Q1	+ 3 (-)	+ 14 (-)	- 28 (-0.1)	+ 17 (-)	
1984 Q4	+ 407 (+ 0.4)	- 191 (-1.1)	+ 483 (+2.1)	+ 115 (+ 0.2)	
1986 Q1	+ 269 (+ 0.2)		+ 269 (+1.0)		
1986 Q3	- 171 (- 0.1)	+1,174 (+4.3)	- 911 (-2.9)	- 434 (- 0.6)	
1986 Q4	+ 967 (+ 0.7)	- 3 (-)	+ 971 (+2.7)	- 1 (-)	
1987 Q1	- 111 (- 0.1)		- 111 (-0.3)		
1987 Q3	- 58 (-)		- 58 (-0.1)		
1987 Q4	+ 81 (-)		+ 81 (+0.2)		
1988 Q1	+ 111 (+ 0.1)		+ 111 (+0.2)		
1988 Q3	- 158 (- 0.1)		- 158 (-0.3)		
1988 Q4	+ 294 (+ 0.1)		+ 294 (+0.6)		

TABLE 5: BREAKS IN QUARTERLY 'M4 DEPOSITS' BY SECTOR, 1963-1988

£mns, (%)

\+ sign denotes flow lower than change in level

(Sterling bank and building society deposits held by the UK non-bank, non-building society private sector; M4 itself includes also notes and coin held by this sector.)

(No sectorisation of levels available prior to 1975 Q3)

	Total	of which OFIs	ICCs	Persons
1967 Q4	+ 92 (+0.5)			
1972 Q1	+ 409 (+1.5)			
1973 Q1	- 92 (-0.3)			
1975 Q4	- 14 (-)	- 3 (-)	- 10 (-0.1)	- 1 (-)
1978 Q2	- 59 (-0.1)			- 59 (- 0.1)
1981 Q1	+ 50 (-)		+ 50 (+0.4)	
1981 Q4	+7,494 (+6.4)	+ 339 (+5.8)	+1,079 (+6.5)	+6,076 (+ 6.4)
1983 Q1	+ 592 (+0.4)	+ 12 (+0.1)	+ 520 (+2.8)	+ 60 (+ 0.1)
1983 Q3		+ 12 (+0.1)	- 23 (-0.1)	+ 11 (-)
1983 Q4	+ 150 (+0.1)	+ 9 (-)	+ 107 (+0.5)	+ 34 (-)
1984 Q1	+ 3 (-)	+ 14 (+0.1)	- 28 (-0.1)	+ 17 (-)
1984 Q4	+ 407 (+0.2)	- 191 (-1.4)	+ 483 (+1.9)	+ 115 (-)
1986 Q1	+ 269 (+0.1)		+ 269 (+0.9)	
1986 Q3	- 172 (-0.1)	+1,174 (+5.7)	- 911 (-2.7)	- 434 (- 0.2)
1986 Q4	+1,102 (+0.5)	- 3 (-)	+ 971 (+2.6)	+ 134 (+ 0.1)
1987 Q1	+ 382 (+0.2)	+ 496 (+2.1)	- 111 (-0.3)	- 3 (-)
1987 Q2	- 277 (-0.1)		+ 1 (-)	- 278 (- 0.1)
1987 Q3	- 58 (-)		- 58 (-0.1)	
1987 Q4	+ 81 (-)		+ 81 (+0.2)	
1988 Q1	+ 111 (-)		+ 111 (+0.2)	
1988 Q3	- 158 (-0.1)		- 158 (-0.3)	
1988 Q4	+ 294 (+0.1)		+ 294 (+0.5)	

TABLE 6: BREAKS IN QUARTERLY M4 BUILDING SOCIETY DEPOSITS BY SECTOR, 1963-1988
£ mns, (%)
+ sign denotes flow lower than change in level

(No sectorisation of levels available prior to 1975 Q3)

		Total		of which					
				OFIs		ICCs		Persons	
1978	Q2	- 59	(-0.2)					- 59	(-0.2)
1986	Q4	+135	(+0.1)					+135	(+0.1)
1987	Q2	-278	(-0.2)					-278	(-0.2)

TABLE 7: BREAKS IN QUARTERLY M3 LENDING BY SECTOR, 1975-1988 (Sterling bank lending to the UK non-bank private sector.)
£mns, (%)
+ sign denotes flow lower than change in level

	Total	of which OFIs	ICCs	Persons
1975 Q4	- 108 (-0.4)	- 87 (-2.6)	- 2 (-)	- 19 (- 0.3)
1976 Q4	- 45 (-0.2)	- 45 (-1.4)		
1978 Q1	+ 34 (+0.1)	+ 24 (+0.6)	+ 10 (-)	
1978 Q3	+ 90 (+0.3)	+ 16 (+0.4)	+ 74 (+0.4)	
1979 Q1	- 52 (-0.1)	- 49 (-1.0)	- 3 (-)	
1981 Q4	+3,656 (+5.9)	- 285 (-3.0)	+1,763 (+5.8)	+2,178 (+10.1)
1983 Q1	+ 721 (+0.8)	+ 12 (-)	+ 618 (+1.5)	+ 91 (+ 0.3)
1983 Q4	+ 270 (+0.3)	+ 102 (+0.7)	+ 209 (+0.5)	- 41 (- 0.1)
1985 Q4	+ 3 (-)	+ 600 (+2.6)	- 381 (-0.7)	- 216 (- 0.4)
1986 Q1	- 232 (-0.2)		- 232 (-0.4)	
1986 Q3	- 125 (-0.1)	+ 508 (+1.7)	+ 596 (+1.0)	-1,229 (- 1.9)
1986 Q4	+ 203 (+0.1)	- 37 (-0.1)	- 119 (-0.2)	+ 358 (+ 0.5)
1988 Q1	+ 649 (+0.3)		+ 649 (+0.9)	

TABLE 8: BREAKS IN QUARTERLY M4 LENDING BY SECTOR, 1975-1988 (Sterling bank and building society lending to the UK non-bank, non-building society private sector.)

£mns, (%)

\+ sign denotes flow lower than change in level

	Total	of which OFIs	ICCs	Persons
1975 Q4	- 108 (-0.2)	- 87 (-2.6)	- 2 (-)	- 19 (-)
1978 Q3	+ 88 (+0.1)	+ 14 (+0.3)	+ 73 (+0.4)	+ 1 (-)
1981 Q4	+3,656 (+3.3)	-285 (-3.0)	+1,763 (+5.8)	+2,178 (+3.1)
1983 Q1	+ 721 (+0.5)	+ 12 (+0.1)	+ 618 (+1.5)	+ 91 (-)
1983 Q4	+ 270 (+0.2)	+102 (+0.7)	+ 209 (+0.5)	- 41 (-)
1985 Q3	- 409 (-0.2)	-402 (-2.0)	- 7 (-)	
1985 Q4	+ 3 (-)	+600 (+3.0)	- 381 (-0.7)	- 216 (-0.1)
1986 Q1	- 232 (-0.1)		- 232 (-0.4)	
1986 Q3	- 125 (-)	+508 (+2.0)	+ 596 (+1.0)	-1,229 (-0.7)
1988 Q1	+ 649 (+0.2)		+ 649 (+0.9)	

ANNEX 2: NOTES ON THE MAJOR BREAKS IN MONETARY SERIES

The following notes collect together details relating to breaks in the monetary aggregates which have appeared in the Bank of England Quarterly Bulletin and other publications, together with a quantity of previously unpublished material. Attempts are made to tie in this information with the breaks identified by the statistical exercise described above. The breaks identified in M0 appear separately from breaks in other series.

All figures are in £ millions

IDENTIFIED BREAKS IN M0 (Table 1)

November 1975 — Break of +8 (+0.1%) in the notes and coin component of M0 due to an adjustment to coin.

November 1976 — Break of +10 (+0.1%) in the notes and coin component of M0 due to an adjustment to coin.

May 1979 — Break of +12 (+0.1%) in the notes and coin component of M0 due to an adjustment to coin.

July 1979 — Break of -12 (-0.1%) in the notes and coin component of M0 due to the writing off of Bank of England notes.

August 1981 — New monetary control arrangements were introduced, replacing the average of 1 1/2% of eligible liabilities held by London clearing banks with the Bank of England by a uniform requirement on all monetary sector institutions above a minimum size to hold non-operational deposits with the Bank equal to 1/2% of each institution's eligible liabilities. In addition to the compulsory cash ratio deposits, the clearing banks also hold voluntary balances at the Bank of England and it is only these operational balances which are included in the definition of M0 as from the last week in August 1981, producing a break of -323 at this date (-53.3% of bankers' balances, -0.2% of M0).

April 1983 — Break of -20 (-0.2%) in notes and coin, due to the writing off of Bank of England notes.

IDENTIFIED BREAKS IN OTHER MONETARY AGGREGATES

1967 Q4 Table 2 (a)

13 new contributors joined the reporting population at end-December (named in March 1968 Quarterly Bulletin, pp 97-98). This increased current and deposit accounts by +107 and advances by +66, mostly in the 'industrial and commercial companies' sector. The size of the break in the M1, M3, M4 and M5 series was -72 (-0.9%), +91 (+0.7%), +91 (+0.4%) and +88 (+0.3%) respectively.

The devaluation of sterling took place on 18 November (March 1968 Quarterly Bulletin, p 97), causing breaks in all foreign currency series. This increased the sterling equivalent of UK residents' (largely companies') foreign currency current and deposit accounts by +35 and advances by +35.

1971 Q4 Table 2 (a)

Break in M1 of +403 (+3.9%) due to the incorporation of new information collected from the London clearing banks from mid-October 1971 on the sector split of current and deposit accounts (March 1972 Quarterly Bulletin, p 153). This reduced the amount of estimation involved in calculating M1. The previous assumptions are described in an article in the September 1970 Quarterly Bulletin, p 342.

1972 Q1 Table 2(a)

Five new contributors joined the reporting population (June 1972 Quarterly Bulletin, p 259). These were the five finance houses recognised or confirmed as banks in January 1972 (listed in Statistical Abstract No 2, p 67). This caused a break in the M1 series of +57 (+0.5%) and in the M3, M4 and M5 series of +409 (+2.1%), +409 (+1.3%) and +408 (+1.0%) respectively.

The old M2 series, which distinguished between deposits with the deposit banks and with other banks, was discontinued (March 1972 Quarterly Bulletin, p 153).

1973 Q1 Table 2 (a)

Breaks in the M3, M4 and M5 series of -93 (-0.4%), -93 (-0.2%) and -181 (-0.4%) respectively. These followed a number of changes to the reporting population (June 1973 Quarterly Bulletin, p 257).

1975 Q2 Table 2 (a)

New, more comprehensive, statistical returns introduced in May 1975 further reduced the estimation necessary to calculate M1 and M3, leading to a break in series at end-June (September 1975 Quarterly Bulletin, notes to Table 12). The breaks in M1, M3, M4 and M5 were of +618 (+4.2%), -139 (-0.4%), -139 (-0.3%) and -142 (-0.2%) respectively, and were eliminated from the flows with the help of partial information provided by the banks.

The definition of M1 was clarified by the replacement of 'current accounts' by 'sight deposits' and private sector deposits with the discount market were included in M1 if 'sight' (see article in June 1975 Quarterly Bulletin for more detail).

1975 Q4 Tables 4, 5, 7 and 8

One contributor left the reporting population, causing a negligible break in the deposits series but a more sizeable break in the lending series (M3 lending -108 (-0.4%), M4 lending -108 (-0.2%)). 87 of the break was in lending to 'other financial institutions'.

	Total	OFIs	ICCs	Persons
M3 deposits	- 14	- 3	-10	- 1
M4 deposits	- 14	- 3	-10	- 1
M3 lending	-108	-87	- 2	-19
M4 lending	-108	-87	- 2	-19

1976 Q1 Table 2 (a)

Break of -266 in notes and coin, representing a break of -1.5% in M1, -0.7% in M3, -0.5% in M4 and -0.4% in M5. This is due to the incorporation of data on public

corporations' holdings of notes and coin (an exercise which was carried out in mid-1988 but extended back to 1976; see July 1988 Economic Trends).

March 1976 to March 1978 — Certain public sector funds placed temporarily with banking institutions through the interbank market were excluded from the money stock (NB This has no effect on M3 as now defined.)

1976 Q2 — Table 2 (a)
Break of +125 (+0.2%) in M5 only.

1976 Q4 — Table 7
Break of -45 (-0.2%) in M3 lending, all to 'other financial institutions'.

The coverage of UK holders of US dollar certificates of deposit was expanded, resulting in a break in M3c (then known as M3).

1978 Q1 — Table 7
Break in the M3 lending series of +34 (+0.1%), mainly 'other financial institutions'.

1978 Q2 — Tables 5 and 6
Break of -59 in M4 (bank and building society) deposits and building society deposits. This was due to a break in the building society shares and deposits series, and is hence all in the 'persons' sector.

1978 Q3 — Tables 7 and 8
Break of +90 in bank lending reflected in a break of +90 (+0.3%) in M3 lending and +88 (+0.1%) in M4 lending.

	Total	OFIs	ICCs	Persons
M3 lending	+ 90	+ 16	+ 74	-
M4 lending	+ 88	+ 14	+ 73	+ 1

1979 Q1 — Table 7
Break of -52 (-0.1%) in M3 lending, mostly attributable to 'other financial institutions'.

1980 Q1 Table 2 (a)

Break of -144 (-0.1%) in the M5 series, composed of breaks in the non-bank non-building society sector's holdings of Treasury bills (-84) and local authorities' temporary debt (-60).

1981 Q1 Tables 4 and 5

Breaks in the M3 deposits and M4 deposits series, entirely in the 'industrial and commercial companies' sector, and due to the privatisation of British Aerospace in February 1981, which added 50 to time deposits held by the private sector. British Aerospace also held 15 of foreign currency deposits at the time of privatisation.

	Total	OFIs	ICCs	Persons
M3 deposits	+ 50	-	+ 50	-
M4 deposits	+ 50	-	+ 50	-

1981 Q4 Tables 2(a), 3, 4, 5, 7 and 8

The introduction of the monetary sector on 18 November 1981 created a break in the banking statistics series. All listed institutions in the Channel Islands and the Isle of Man (including the branches of listed mainland banks) were given the option of remaining in the sector and acceding to the monetary control arrangements described in "Monetary control - provisions", or of going outside it. The majority of such institutions opted to remain within the sector.

The extended sector which took effect from end-December 1981 for the purposes of national income and financial accounts therefore comprised:

(i) all recognised banks and licensed deposit takers (LDTs) (under the Banking Act 1979);
(ii) the National Girobank;
(iii) those listed institutions in the Channel Islands and the Isle of Man which opted to comply with the new monetary control arrangements;
(iv) the Trustee Savings Banks;
(v) the Banking Department of the Bank of England.

These changes in the population of the sector inevitably meant a break in many of the statistical series, including those for the sectors to which the new members of the monetary sector had hitherto belonged.
Institutions with eligible liabilities of less than £10 million and a total balance sheet of less than £100 million were no longer asked to provide monthly statistics. All institutions, however, were asked to complete end-quarter returns.
Returns were provided by the banks on both the old banking sector basis and the new monetary sector basis for mid-November 1981. The information was also used to construct split levels for end-December 1981. Changes in the series were calculated for the old banking sector up to and including 18 November 1981 for the monthly series and end-December 1981 for the quarterly series; after these dates, changes have been produced for the new monetary sector.
There were breaks in the M1, M3, M4 and M5 series of +2,081 (+6.4%), +7,437 (+10.1%), +7,437 (+5.9%), +1,109 (+0.8%) respectively.
The break in M1 comprised -57 in notes and coins, +740 in non-interest-bearing sight deposits and +1,398 in interest-bearing sight deposits. In addition to these, the breaks in M3 and M4 comprised +5,118 in time deposits and +238 in sterling certificates of deposit.
The breaks in M1 deposits, M3 deposits, M4 deposits, M3 lending and M4 lending are shown below, broken down by sector.

	Total	OFIs	ICCs	Persons
M1 deposits	+2,138	+ 38	+ 115	+1,985
M3 deposits	+7,494	+339	+1,079	+6,076
M4 deposits	+7,494	+339	+1,079	+6,076
M3 lending	+3,656	-285	+1,763	+2,178
M4 lending	+3,656	-285	+1,763	+2,178

1982 Q4 Tables 2 (a) and 2 (b)

Break of +4,478 (+4.4%) in the M2 series in October, in banks' interest-bearing retail deposits, caused by changes in the reporting population.

1983 Q1 Tables 2 (a) and 2 (b), 3, 4, 5, 7 and 8

Forty three new contributors joined the quarterly reporting population following the completion of the review of banking statistics.

	M1	M3	M4	M5
March	+ 16	+586	+586	+597
Q1	+ 17	+587	+587	+604

The break in M1 was comprised of -5 in notes and coin, +10 in non-interest-bearing sight deposits and +12 in interest-bearing sight deposits. The breaks in M3, M4 and M5 were substantially larger due to the break of +563 in time deposits.

The breaks in the deposits element of the aggregates, broken down by sector, are shown below. Nearly all of the effect is in the 'industrial and commercial companies' sector.

	Total	OFIs	ICCs	Persons
M1 deposits	+ 22	+ 2	+ 7	+13
M3 deposits	+592	+12	+520	+60
M4 deposits	+592	+12	+520	+60
M3 lending	+721	+12	+618	+91
M4 lending	+721	+12	+618	+91

1983 Q3 Tables 3, 4 and 5

Sale of British Petroleum in September.

No break in the main aggregates but a small switch in the sectoral breakdown between 'industrial and commercial companies' and 'other financial institutions' and 'persons'.

	Total	OFIs	ICCs	Persons
M1 deposits	-	+ 8	-10	+ 2
M3 deposits	-	+12	-23	+11
M4 deposits	-	+12	-23	+11

1983 Q4 Tables 2(a) and 2(b), 3, 4, 5, 7 and 8

Twenty contributors joined and seven left the sample of monetary sector institutions providing figures for interest-bearing retail deposits. This caused a break of +468 (+0.4%) in M2 in October and +575 (+0.5%) over the quarter as a whole.

In November there was a break of +360 in interest-bearing sight deposits which was offset by a fall of -363 in December. This was due to a change made by certain banks in the terms of some accounts.

	M1	M2	M3	M4	M5
Oct	-	+468	-	-	-
Nov	+360	+ 98	+360	+360	+360
Dec	-354	+ 9	-210	-210	-210
Q4	+ 6	+575	+150	+150	+151

A change in the sectoral classification of securities dealers from 'industrial and commercial companies'/ 'unincorporated businesses' to 'other financial institutions' took place (see September 1986 when this classification was first introduced comprehensively). This was backdated to 1983 Q4 for certain series.

The reclassification of leasing companies from 'industrial and commercial companies' to 'other financial institutions' also took place.

The breaks in sectoral composition were as follows:

	Total	OFIs	ICCs	Persons
M1 deposits	+ 6	+ 10	- 6	+ 2
M3 deposits	+150	+ 9	+107	+34
M4 deposits	+150	+ 9	+107	+34
M3 lending	+270	+102	+209	-41
M4 lending	+270	+102	+209	-41

1984 Q1 Tables 3, 4, 5

Six contributors joined the reporting population, causing breaks in the 'other financial institutions' and 'industrial and commercial companies' sectors of M1 deposits, M3 deposits and M4 deposits; there were no breaks in the main series.

	Total	OFIs	ICCs	Persons
M1 deposits	-	+ 9	-12	+ 3
M3 deposits	+ 3	+14	-28	+17
M4 deposits	+ 3	+14	-28	+17

1984 Q4 Tables 2(a) and 2(b), 3, 4 and 5

Privatisation of British Telecom in November; British Telecom held bank deposits of 426 (324 time deposits, 102 sight deposits, all assumed non-interest-bearing) at the time of privatisation.

Four contributors joined and one left the quarterly reporting population.

	M1	M2	M3	M4	M5
Oct	-	- 694	-	-	-
Nov	-	- 555	+324	+324	+324
Dec	+103	-	+ 84	+ 84	+ 84
Q4	+102	-1,248	+407	+407	+408

The sectorisation of the Q4 break is as follows:

	Total	OFIs	ICCs	Persons
M1 deposits	+102	-119	+106	+115
M3 deposits	+407	-191	+483	+115
M4 deposits	+407	-191	+483	+115

1985 Q1 Table 3

Six contributors left the reporting population and five joined. The only break was a small one (of +12, +0.1%) in the 'industrial and commercial companies' sector of the M1 deposits series.

1985 Q3 Tables 2(a) and 2(b) and 8

Four contributors joined the reporting population and five left. There was a break of +236 (+0.2%) in August in the banks' interest-bearing retail deposits component of M2, caused by changes in the reporting population.

	M1	M2	M3	M4	M5
Aug	-	+236	-	-	-7
Q3	-	+236	+14	+14	-4

There was also a break in M4 lending in Q3 of -409 (-0.2%), almost entirely attributable to the 'other financial institutions' sector.

1985 Q4 Tables 7 and 8

Change in the breakdown of M3 and M4 lending by sector resulting from the reclassification of securities dealers from 'industrial and commercial companies'/'unincorporated businesses' to 'other financial institutions' (see further details under 1986 Q3).

	Total	OFIs	ICCs	Persons
M3 lending	+3	+600	-381	-216
M4 lending	+3	+600	-381	-216

1986 Q1 Tables 2(a) and 2(b), 3, 4, 5, 7 and 8

Four contributors joined the reporting population and nine left. The main effect was a break of +254 in non-interest-bearing sight deposits, with +35 in banks' interest-bearing retail deposits and +15 in time deposits. The aggregates were affected as follows:

	M1	M2	M3	M4	M5
March	+255	+290	+270	+270	+270
Q1	+254	+289	+269	+269	+270

In each case the break was in the deposits of 'industrial and commercial companies'. The lending counterparts were similarly affected:

	Total	OFIs	ICCs	Persons
M3 lending	-232	-	-232	-
M4 lending	-232	-	-232	-

1986 Q2 Tables 2(a) and 2(b)

Break in banks' interest-bearing retail deposits resulting in a break in M2 of +213 (+0.1%) in May and +346 (+0.2%) in the quarter as a whole. This was due to changes in the reporting population.

1986 Q3 Tables 2(a) and 2(b), 3, 4, 5, 7 and 8

Three contributors joined the reporting population and

eight left, causing the following breaks in the aggregates:

	M1	M2	M3	M4	M5
Sept	-49	- 29	-190	-190	-189
Q3	-48	-192	-189	-190	-186

The break in M1 consisted of breaks in notes and coins, non-interest-bearing sight deposits and interest-bearing sight deposits of -18, -10 and -20 respectively. There was also a break of -141 in time deposits and of -164 in banks' interest-bearing retail deposits.

A change in the sectoral classification of securities dealers from 'industrial and commercial companies'/ 'unincorporated businesses' to 'other financial institutions' was carried out. This reclassification has been carried back to 1985 Q4 in the sectoral analysis of M3 and M4 lending (on the basis of survey information for mid-November 1985) and back to 1983 Q4 in the sectoral analysis of foreign currency lending (on the basis of the survey information and an assumption about the way the securities dealers financed their holdings of foreign currency securities).

The breaks in the deposits series below are largely the result of the reclassification of securities dealers.

	Total	OFIs	ICCs	Persons
M1 deposits	- 30	+ 229	- 53	- 206
M3 deposits	-171	+1,174	-911	- 434
M4 deposits	-172	+1,174	-911	- 434
M3 lending	-125	+ 508	+596	-1,229
M4 lending	-125	+ 508	+596	-1,229

1986 Q4 Tables 2(a) and 2(b), 3, 4, 5, 6 and 7

Six contributors joined the reporting population and one left.

The privatisation of British Gas took place in December; British Gas held sight and time deposits of 800 at the time of privatisation, causing breaks in M1, M2, M3, M4 and M5.

The breaks shown below include the effects of both the privatisation and the changes in the reporting population.

	Total	OFIs	ICCs	Persons
M1 deposits + 377	-	+ 378	- 1	
M3 deposits	+ 967	- 3	+ 971	- 1
M4 deposits	+1,102	- 3	+ 971	+134
Building society deposits	+ 135	-	-	+135
M3 lending	+ 203	-37	- 119	+358

1987 Q1 Tables 2(a) and 2(b), 4 and 5

British Airways was privatised in February and there were also changes to the reporting population (three contributors joined and eight left). But the main reason for the breaks (shown below) was the introduction of the new building society monthly reporting form (see page 10).

	M1	M2	M3	M4	M5
Jan	-	+754	-	+493	-379
Q1	-10	+754	-111	+382	-491

The break in M2 was due to a break in building society retail deposits. The January break in M4 was mainly due to a break in building society holdings of M3 due to a change in the treatment of transit items. This also affected the M5 series, in which there were additional breaks due to the non-bank non-building society sector's holdings of local authority temporary debt (-316) and CTDs (-556).

	Total	OFIs	ICCs	Persons
M3 deposits	- 111	-	- 111	-
M4 deposits	+ 382	+496	- 111	- 3

1987 Q2 Tables 2(a), 5 and 6

Break of -277 in M4 and M5 due to local authorities who started identifying their holdings of building society sterling certificates of deposit at this date. This caused a break in the non-bank non-building society sector's holdings of building society CDs (although it is not clear why the break should be in the 'persons' sector; it should probably have been in 'industrial and commercial companies').

	Total	OFIs	ICCs	Persons
M4 deposits	-277	-	+ 1	-278
Building society deposits	-278	-	-	-278

1987 Q3 Tables 4 and 5

BAA was privatised in July, but the statistical effect of reclassifying BAA as a private sector company was negligible. BAA held few bank deposits (and had little outstanding borrowing) at the time of privatisation. Three contributors joined the reporting population and five left, causing breaks in the non-bank private sector's holdings of time deposits (-92) and sterling certificates of deposit (+41).

	Total	OFIs	ICCs	Persons
M3 deposits	- 58	-	- 58	-
M4 deposits	- 58	-	- 58	-

1987 Q4 Tables 3, 4 and 5

Five contributors left the reporting population, causing a break of +80 in interest-bearing sight deposits, all attributable to 'industrial and commercial companies'.

	Total	OFIs	ICCs	Persons
M1 deposits	+ 81	-	+ 81	-
M3 deposits	+ 81	-	+ 81	-
M4 deposits	+ 81	-	+ 81	-

1988 Q1 Tables 2(a) and 2(b) 4, 5, 7 and 8

Nine contributors left the reporting population, the main effects being breaks of +119 in time deposits and +649 in bank lending (both attributable to 'industrial and commercial companies').

	Total	OFIs	ICCs	Persons
M3 deposits	+111	-	+111	-
M4 deposits	+111	-	+111	-
M3 lending	+649	-	+649	-
M4 lending	+649	-	+649	-

Also a break of -1,535 (-0.8%) in M2 due to the reclassification of certain building society accounts in March.

1988 Q3 Tables 4 and 5

Break of -159 in M3 deposits and M4 deposits, all in the 'industrial and commercial companies' sector, due to changes in the reporting population.

1988 Q4 Tables 2(a) and 2(b), 4 and 5

Break of +294 (+0.1%) in M3, M4 and M5, all in the 'industrial and commercial companies' sector, due to the privatisation of British Steel in December.

ANNEX 3: TEMPORARY DISTORTIONS TO SERIES 1975-1988

There are a number of ways in which monetary series can be distorted temporarily without suffering a permanent break. One obvious example of this is the sale of shares by a private sector company, which may temporarily distort the stocks of private sector deposits and borrowing. Usually in such a case only a pair of months or quarters is affected, in equal and offsetting ways.

Although strictly speaking distortions of this type are not breaks, they may in some circumstances be of equal interest in interpreting the series, particularly to time series analysts and econometricians. Often such distortions (or "special factors" as they are sometimes known) are noted in the monthly monetary aggregates press releases. The intention in doing this is normally to draw attention to large financial transactions which are unrelated to the variables normally used to explain monetary developments, causing significant changes in the series.

An oversubscribed share sale, with the returnable application monies held on suspense account on the day that reporting institutions make up their figures, is a good example of this. To exclude such a suspense account entirely from the monetary aggregates would produce a spuriously low increase, since some of the cheques paid into the suspense account will certainly have been drawn on deposits. To add it entirely to deposits would be equally spurious since it is probable that some of the cheques credited to it will have been financed by bank lending (particularly via overdrawn accounts). Normally, such suspense accounts are treated in the same way as transit items, ie it is assumed that 60 per cent of the cheques will have reduced bank (non-interest-bearing sight) deposits and 40 per cent will have increased bank lending. Therefore an adjustment is made to the figures for the monetary sector as a whole which adds back 60 per cent of a suspense account to bank deposits and takes 40 per cent off bank lending.

If the 60:40 convention accurately reflects the proportions in which the application cheques credited to the suspense account affect deposits and lending, then the procedure produces no distortion. However, if the proportions differ from 60:40, the figures for both deposits and lending will be distorted. For example, if a greater proportion comes from bank lending than the normal rules assume and a smaller proportion from deposits, the effect of applying the normal convention will be to push up both deposits and lending, because the adjustment will have added too much to deposits and taken too little off lending.

When suspense accounts are unusually high at the end of the quarter month, they may also distort the sectoral analysis of deposits and lending - because suspense accounts are conventionally allocated to the 'industrial and commercial companies' sector whereas oversubscriptions to share sales are more likely to have come from the personal and 'other financial institutions' sectors.

Oversubscription of share sales has been a regular occurrence in recent years and has probably caused a number of temporary distortions. But it is by no means the only cause, nor in earlier years was it so common.

The list of "special factors" which follows is drawn from the monthly monetary aggregates press releases from January 1975 to December 1988. The list is not exhaustive, but it may provide some items of information which are useful in interpreting the series. It needs to be borne in mind, however, that prior to October 1986 the monthly series which were compiled were for banking months, ie mid-month to mid-month, rather than for calendar months. No attempt has been made to assess how relevant the information now is to the calendar month or quarterly series.

More exhaustive information on privatisation proceeds is available from Table 2.8 of 'Financial Statistics'.

All figures are in £ millions unless otherwise noted.

Banking months

October 1975	Lending depressed by substantial repayment of debt to the banks out of the proceeds of British Leyland rights issue.
February 1977	Bank lending depressed by the reversal of short-term accommodation to jobbers and money brokers in January at a time of exceptionally high turnover in the gilt-edged market.
July 1977	Government revenue benefited from the sale of BP shares.
February 1979	Bank lending inflated due to distortions in the normal patterns of trade receipts and payments as a result of industrial disruption.
April 1979	CGBR exceptionally large, in part reflecting delays in government transactions resulting from Civil Service industrial dispute.
May 1979	Central government benefited from some unwinding of the effects of Civil Service industrial dispute.
July 1979	PSBR inflated by industrial dispute at the Post Office, delaying the despatch of telephone bills.
August 1979	External and foreign currency finance: net outflow of funds from the non-bank private sector, likely to have been associated in part with the recent relaxation of exchange controls.
September 1979	CGBR exceptionally large: included the effect of tax rebates from increased personal allowances and higher than usual lending to the rest of the public sector.

Bank lending: special factors likely to have reduced the demand for credit eg corporate liquidity will have benefited from the exceptionally high borrowing requirement of the government.
External and foreign currency finance: substantially contractionary; recent relaxation of exchange controls probably a factor.

October 1979 — Credit: special factors affecting September operating in reverse direction.

December 1979 — Lending erratically low: companies' need to borrow probably temporarily reduced because of smaller PAYE tax payments to Inland Revenue, reflecting reduction in tax rates announced in Budget.

April 1980 — Industrial action affected the clearing of cheques at the end of the banking month and this resulted in a higher than normal level of items in transit. Other items in the banks' balance sheet may also have been affected, but there are not thought to have been serious distortions to the monetary aggregates.

May 1980 — Some of the individual figures may have been affected by the unwinding of the effects of industrial action, which produced some distortion in April, particularly to items in transit.

July 1980 — The banking system re-adjusted its business following the ending of the Supplementary Special Deposits Scheme (the 'corset') which had been in operation since June 1978 and, consequently, the recorded increase in M3 during the month is of itself no guide to the underlying trend.

August 1980 — As in July, M3 substantially inflated by further adjustments following the ending of the 'corset'.

March 1981 — £ lending and M3 may have been distorted upwards by arbitrage, ie, borrowing, the proceeds of which are subsequently redeposited elsewhere in the banking system at advantageous rates.

April 1981 — Monetary aggregates heavily distorted by the Civil Servants' dispute.
Lending is likely to have been affected by the unwinding of arbitrage transactions that distorted lending in March as well as by the effects of the Civil Servants' dispute.

May 1981 — Again heavily distorted by Civil Servants' dispute.

July 1981 — £ lending: it is not possible to assess accurately the influence exerted by the Civil Servants' dispute and hence the underlying trend.

August 1981 — Civil Servants' dispute continued to the end of July.

September 1981 — The introduction of new arrangements for monetary control on 20 August tended to encourage the growth of the bill market and will have induced some switching from other forms of lending. But there also appeared to be some arbitrage possibilities on bills, particularly in the early part of the month, which may have inflated total lending.

October 1981 — PSBR still affected by the consequences of the Civil Servants' dispute. Non-deposit liabilities - the banks' capital and reserves -

fell by 140 reflecting the first instalment of the special tax on banking deposits announced in the Budget.

November 1981

Some part of the month's very heavy bank lending can no doubt be attributed to the public sector's exceptional surplus.

December 1981

Figures calculated on the basis of the new monetary sector. Figures continue to be distorted by the Civil Servants' dispute and it remains difficult to judge the extent to which this has affected bank deposits and lending, especially in individual months. Competition between banks and building societies may have inflated M3.

Sterling lending: as in November, the public sector's large surplus was probably a contributory factor, although this appears to have increased lending by much less in December than in November; in addition, the recorded lending total was inflated by banks acquiring 100 of acceptances previously held outside the banking system.

February 1982

The strength of loan demand, as in other recent months, was no doubt affected by the strongly contractionary effect of public sector transactions. In order to offset the cash shortages resulting from these transactions, the Issue Department again made substantial purchases of commercial bills from the banking system and these are included in the lending total.

March 1982

The public sector as a whole was in surplus, reflecting the recovery of delayed taxes, the refinance by the Trustee Savings Banks of export credit, and the sale of Amersham International.

April 1982	CGBR surplus: rebates from the European Community were a major factor.
October 1982	The monetary figures were heavily distorted at the end of banking October by the large flow of funds associated with the oversubscription of the sale of shares in Standard Telephones and Cables plc.
November 1982	Unwinding of the distortion associated with the STC share sale. Consequently, whilst the growth of the monetary aggregates over banking October was distorted upwards, their growth over banking November will have been distorted correspondingly downwards. The average of the two months taken together should be unaffected by the distortion.
August 1984	Within the increase in bank lending, there was a reduction of 450 in one bank's advances to a leasing subsidiary following adjustments in respect of deferred tax resulting from the implications of the Finance Act. There was a matching reduction in net non-deposit liabilities, offsetting the effect on money.
July & August 1984	Capital re-organisations to meet deferred tax liabilities.
November 1984	Broad money growth almost certainly erratically high: substantial building up of deposits in anticipation of British Telecom offer for sale.
December 1984	All of the aggregates are likely to have been affected by transactions associated with the sale of British Telecom. The growth in M0 was erratically high due to unusually high levels of bankers' operational deposits with the Bank of England during the period in which

subscription monies for the BT sale were in transit within the banking system; this effect expected to unwind in banking January.

January 1985 — Growth of M2 over the 12 months to mid-January 1985 includes 740 resulting from changes made by certain building societies in the terms of some accounts.

April 1985 — Sterling lending was substantially increased during banking April by borrowing to finance payments for investment brought forward to take advantage of the higher investment allowances prevailing up to the end of the last financial year.

April 1986 — Bank lending may have been substantially increased this month, as it was in banking April 1985, by borrowing to finance payments for investment brought forward to take advantage of capital investment allowances prevailing only to the end of the financial year.

Calendar months

October 1986 — M3 at the end of September was inflated by the heavily oversubscribed TSB share issue. The distortion unwound in the course of October as oversubscription monies were returned.

November 1986 — M3 at the end of November was inflated to some extent by the oversubscribed British Gas share issue.

June 1987 — Sterling lending includes some £0.4bn arising from the restructuring of a bank group. There is an offsetting increase in banks' capital, included as a negative item within "other counterparts". M3, M4 and M5 are unaffected by these transactions.

September 1987 — In September a rights issue by Midland Bank (£0.7bn) will have increased net non-deposit sterling liabilities (a negative contribution within "other counterparts").

October 1987 — Within the October PSBR, privatisation proceeds were expansionary by £0.6bn, comprising £1.5bn paid to British Petroleum plc in respect of a issue of new shares, offset by receipts of part of the first instalment from the sale of BP shares.

November 1987 — Within the November PSBR, privatisation proceeds from the sale of BP shares were contractionary by £1.5bn.

April 1988 — The PSBR was reduced in April by privatisation proceeds totalling some £1.8bn, reflecting receipt of the final payment for British Gas shares and repayment of some British Gas debentures.

May 1988 — The PSBR was reduced in May by privatistaion proceeds totalling some £0.9bn, reflecting receipt of the second payment for BAA shares and redemption of preference shares by British Telecom. Also, a rights issue by Barclays (£0.9bn) will have increased net non-deposit sterling liabilities (a negative contribution within "other counterparts").

August 1988 — The PSBR was reduced in August by privatisation receipts of £2.2bn, reflecting the second payment for BP shares.

September 1988 — Because of the postal dispute the Post Office itself temporarily held more cash than usual, affecting M0. It is not known to what extent the strike may have affected the other monetary or lending aggregates.

November 1988	Changed arrangements for the financing of certain banks' consumer and leasing credit activities may lead to an increase in sterling lending and in M3, M4 and M5 over the three months or so from 1 November. In November this probably increased sterling lending and broad money by some £0.3bn to £0.4bn.
December 1988	No additional net impact of the above in December.

ANNEX 4: NOTES ON BREAKS IN BANKING STATISTICS

BREAKS IN QUARTERLY BULLETIN TABLE 3

Table 3.1 aggregates the balance sheets of all monthly-reporting institutions. This is broken down into six further tables which provide the analysis by group. In addition, Table 3.8 aggregates the balance sheets of those institutions which report only quarterly.

All figures are in £ millions.

January 1961 — Until this date figures for the London clearing banks' balances with the Bank of England included Lloyds Bank's balances with Eastern reserve banks.

February 1961 — Re-financeable export credits due for repayment within eighteen months were transferred from "advances to customers and other accounts" to "bills discounted" (the figures for the Scottish banks showed this change from April 1961).

October 1961 — Due to the reclassification of certain assets approximately 40 was transferred from "advances to customers and other accounts" to "money at call and short notice".

Prior to this date the Scottish banks' balances with other banks (and cheques in the course of collection on) included business with the Republic of Ireland.

September 1962 — Several changes were made to the figures for overseas banks and accepting houses:

a) The figures included, in addition to the banks' deposit liabilities, their liabilities on loans and advances (including money at call and short notice) received from other UK banks, and their net liabilities on internal accounts to their offices overseas;

September 1962 (continued)

b) The advances figures were now shown without deduction of provisions for bad and doubtful debts, and excluded advances to other UK banks and local authorities as well as impersonal and internal accounts;

c) "Other assets" now included any foreign currency assets not included elsewhere and trade investments.

Also before this date figures for "other overseas banks in the UK" were not available.

March 1963

Prior to this date the figures for "notes outstanding" for Northern Irish banks were averages of the Saturday figures for four consecutive weeks. After this time they referred to the dates shown.

April 1963

Until this date the division of certain assets - balances with the Bank of England, money at call and short notice, Treasury bills and investments - between offices of the Northern Ireland banks in the UK and those in the Republic of Ireland was not known. Consequently, until March 1963, the figures of these assets represented a proportion of the banks' total holdings of such assets equal to the proportion of their total current and deposit accounts which was held at each date by offices in Northern Ireland. From 16 April 1963 the series included assets held by UK offices only.

Before April 1963 the figures for Northern Irish banks' notes outstanding included notes issued by the National Bank, which was otherwise excluded from the Northern Ireland banks table.

April 1963 (continued)

Before April 1963 Northern Ireland banks' balances with and other cheques in course of collection on other banks included some balances outside the United Kingdom.

December 1963

A new definition of "net deposits" - affecting the London clearing banks and the Scottish banks - was brought into operation (see December 1963 Quarterly Bulletin article "Banking Statistics").

March 1964

Seasonally adjusted figures for net deposits and advances (other than to nationalised industries) were added to the London clearing banks' table.

March 1966

From this date, the overseas banks' balances on inter-branch accounts were reported net, whereas previously they had been reported gross. Sterling deposits by, and advances to, overseas residents were thus each reduced by some £60m.

The figures were also affected by the transfer of the Irish business of the National Bank to the National Bank of Ireland; deposits with the National Bank fell by about 80 and advances and investments by about 40 and 20 respectively.

May-June 1966

Figures for Northern Ireland banks were not available owing to a strike by bank employees; the figures for March were therefore carried forward.

June 1966

From June 1966, deposits from overseas residents included negotiable certificates of deposit denominated in US dollars.

July 1967

With the nationalisation of the steel companies their overdrafts (totalling 79 on the vesting day, 28 July 1967) were repaid and replaced by centralised borrowing by the British Steel

Corporation. Furthermore September 1967 figures for the holding of British government stock were affected by the conversion of steel shares into 6.5% Treasury Stock 1971.

November 1967 — Currency revaluation on 18 November 1967 affected foreign currency items.

December 1968 — Figures for accepting houses, overseas banks and other UK banks now included banks' own holdings and issues of negotiable sterling certificates of deposits.

December 1969 — The London clearing banks, the Scottish clearing banks, and the three Northern Ireland banks based in Northern Ireland made certain changes in their accounting procedures in connection with the full disclosure of their profits:

a) Relating to the treatment of items in transit. This change produced a fall in gross deposits of some 350 for the London clearing banks and some 60 for the Scottish banks;

b) The introduction of amortisation of investments (all banks). This produced upward revisions of some 75 for the London clearing banks (60 on account of British government stocks), 15 for the Scottish banks and about 2 for the Northern Ireland banks;

c) Relating to inner reserves and certain sundry provisions. In round terms this reduced gross deposits by 500 for the London clearing banks, 60 for the Scottish banks and 15 for the Northern Ireland banks.

April-Nov 1970 — Figures for Northern Ireland banks were not available due to an industrial dispute involving bank employees.

September 1971

The tables for London clearing banks, Scottish clearing banks, accepting houses, overseas banks and other UK banks gave figures at common monthly dates beginning with mid-September 1971.

December 1971

Following the introduction on 16 September 1971 of new arrangements for the control of credit, the columns showing the total of liquid assets and the liquidity ratio were replaced by a column showing the reserve ratio (see article in September 1971 Quarterly Bulletin for details of the composition of the reserve ratio).

March 1972

Following the introduction in September 1971 of new credit control arrangements, some interim changes in banking statistics were made prior to the completion of the review of all statistical information provided by banking institutions. Specifically, to achieve a uniform series of statistics for all banks the figures for the London and Scottish clearing banks and the Northern Ireland banks were rearranged and brought into line with the figures for the accepting houses, overseas and other banks. The main changes from the previous presentation were: separate figures were now given both for assets and liabilities in currencies other than sterling and for inter-bank transactions; loans to local authorities were amalgamated under one heading; and a few miscellaneous items previously classified as call money were transferred to advances (figures in the old form are also given). Also, for the first time separate figures were given for the other deposit banks which are subject to reserve ratios.

For the first time statistics included figures for the five finance houses recognized or confirmed as banks in January 1972. These institutions were included within the "other banks" group.

May 1972

The figures for the London and Scottish clearing banks were shown after the transfer from "sterling bills discounted" to "advances" of 707 fixed-rate credit for exports and shipbuilding and short-term export finance. Of this, 634 (London clearing banks 597, Scottish clearing banks 37) was transferred from "other UK bills" and 73 (all London clearing banks) from "other bills": 386 (London clearing banks 349, Scottish clearing banks 37) was placed in "advances to UK residents" and 321 (all London clearing banks) in "advances to overseas residents"

April 1973

From this date figures for six new contributors (one of which was formerly a finance house) were included in the "other banks" group. Two sets of figures were shown for mid-April for Tables 8(i) and 8(ii) giving the various categories of liabilities and assets both before and after their inclusion. Both sets showed the new contributors treated by existing banks as "UK banks", whereas in mid-March they were treated as "other UK residents". In order to make the two sets of figures in the summary table comparable in May, 17 (sterling) and 19 (other currency) should be switched out of deposits from UK banks into deposits from "other UK residents"; and 138 (sterling) and 27 (other currencies) should be switched out of balances with "other UK banks" into advances to "UK residents"

June 1973

Loans to UK local authorities in foreign currency were shown separately from sterling loans.

June 1974

Advances to UK residents in foreign currency were apportioned between the public and private sectors.

July 1974

Figures for special deposits included supplementary deposits as well as general calls.

September 1975

A new series of banking statistics was introduced based upon the new, more comprehensive statistical returns introduced in May (full details in June 1975 Quarterly Bulletin). The main changes were as follows:

a) A full balance sheet for all banks;

b) A fuller distinction than hitherto between sterling and other currencies;

c) A distinction between funds placed through specialised financial markets, such as the local authority market, and loans and advances made in the course of ordinary banking business direct to customers;

d) A separate total for investments in assets leased to customers;

e) The inclusion of information about banks' eligible liabilities, reserve assets and reserve ratios hitherto shown separately in Table 9;

f) The group tables became somewhat less detailed than the combined aggregates;

g) A reclassification of the banks into 3 main groups, namely UK, overseas and consortium, instead of groups based primarily upon the various banking associations. The UK banks were subdivided into the London clearing banks, Scottish clearing banks, Northern Irish banks, accepting houses and other UK banks. The overseas banks were divided into the American banks, Japanese banks and other overseas banks.

October 1975 — Prior to this date, the Northern Ireland banks' figures were reported on different dates to the other UK banks. They were usually made up a day earlier.

December 1975 — Sight deposits were now shown for each group of banks. Previously only figures for total "current and deposit account" liabilities were shown.

March 1976 — In the summary table, market loans (other than reserve assets) in sterling to "other UK" were subdivided between "UK public corporations" and "UK private sector" for the first time. In addition the breakdown of bills (other than reserve assets) into "public sector" and "other" was no longer given.

June-Aug 1976 — Figures for Northern Ireland banks were not available because of industrial action by bank employees. The total for all banks as at mid-June, mid-July and mid-August thus uses figures for Northern Ireland banks as at mid-May.

December 1977 — The coverage of UK holders of US dollar certificates of deposits was expanded.

October 1978 — For the first time the tables included data for the National Girobank. Until this time, although included within the banking sector, it had been outside the normal credit control arrangements. This change increased UK banks' total liabilities/assets by 396.

Also all tables were rearranged to provide a breakdown between private and public sectors of UK sterling deposits and advances, and the summary table was changed so as to distinguish throughout between sterling and foreign currency items.

December 1978 — Northern Ireland banks' sterling sight deposits and market loans were affected by a change in accounting treatment with respect to offices in the Republic of Ireland.

July 1980 — Three contributors, with assets/liabilities of 167, were excluded from the series. The main net effects were estimated to reduce sterling deposits of the UK banking sector by 79; sterling capital and other funds by 88; sterling market loans to UK banks by 79; and other sterling investments by 48. Other net changes were negligible.

February 1981 — As a result of the privatisation of British Aerospace approximately 50 of time deposits were transferred from the public to the private sector.

August 1981 — After 19 August additional offsets against eligible liabilities were allowed in respect of balances with the Bank of England and secured money at call with listed discount market institutions and listed brokers.

November 1981 — The creation of the monetary sector on 18 November 1981 created breaks in the banking statistics series due the introduction of 70 new institutions into the monthly reporting network and the omission of a number of institutions which had previously been included (full details in March 1982 Quarterly Bulletin).

December 1981 — The tables now included figures for eligible liabilities and also incorporated minor revisions following the partial introduction of the new arrangements for monetary control. In particular, following the abolition of the reserve asset ratio, "eligible bills" comprised

all local authority and bank bills which were eligible for rediscount at the Bank of England. Previously, "reserve assets, other bills" only included those which qualified as reserve assets.

December 1982 — British government stocks were no longer classified according to maturity.

January 1983 — Prior to this date secured money placed with money brokers and gilt-edged jobbers was included with other market loans and shown as a separate item. This was now included within advances to the UK private sector.

Total foreign currency of "other UK" and "overseas" in Table 3.1 did not equal the sum of the corresponding items in Tables 3.2-3.10 for dates prior to January 1983 due to the partial correction for certain previously misclassified deposits. Whilst these deposits were now correctly classified in Table 3.1, it was not possible to correct Tables 3.2-3.10.

June 1983 — Other miscellaneous assets, with effect from 15 June 1983, included holdings of sterling certificates of deposit issued by building societies.

December 1983 — The group breakdown for the balance sheet changed. London clearing banks, Scottish clearing banks and Northern Ireland banks merged to form the "Retail banks" group.

March 1984 — Building societies' certificates of deposit and time deposits were identified separately within market loans.

January 1985 — Tables 3.1, 3.2 and 3.4 were affected for mid-January 1985 by the merger of Barclays Bank International Ltd with Barclays Bank plc. The main items affected were, for sterling, "capital

and other funds" and "investments", and for other currencies, the gross figures for inter-bank loans and deposits.

January 1986 — Tables 3.1, 3.2 and 3.4 were affected for mid-January 1986 by the merger of Lloyds Bank International Ltd with Lloyds Banks plc.

June 1986 — Promissory notes, bills and other short-term paper had been previously included within the UK monetary sector time deposits; these items were now included with certificates of deposit.

October 1986 — The reporting date was changed from the third Wednesday to the last working day of each month.

December 1986 — The balance sheet for the quarterly reporting institutions (Table 3.9) was initiated.

July 1987 — Separate figures for the Consortium group of banks were no longer published; the banks contributing to the "Consortium banks" group were now included within the "other overseas" group.

August 1988 — Investments in building societies were now shown separately. Such investments had been previously included in the "other" column within sterling assets and the "UK" column within foreign currency assets.

BREAKS IN QUARTERLY BULLETIN TABLE 5

Table 5 shows an analysis of bank lending to UK residents. All monthly reporting institutions complete Form Q3 which contains 37 categories classified by industry. These categories make up columns in the table.

February 1967 — The quarterly analysis of advances provided by members of the British Bankers' Association was superseded by a new analysis covering all banks in Great Britain. Although some of the headings in the new analysis were similar to those in the BBA series, the contents of most of the headings were by no means identical. This was due mainly to the new analysis being based upon the Standard Industrial Classification.

February 1968 — The February 1968 figures were affected by the revaluation of foreign currency advances at 18 November 1967, and by the inclusion of several new contributors. Together these accounted for some 260 of the increase over the quarter in total advances (UK residents +60 and overseas residents +200).

February 1968 — From this date figures for the Northern Ireland banks became available. Their figures were comparable with those provided by the other contributors to the table, but were in less detail.

May-Nov 1970 — Figures for the Northern Ireland banks were not available due to an industrial dispute involving bank employees.

May 1972 — 734 (London clearing banks 697, Scottish clearing banks 37) of fixed-rate credit for exports and domestic shipbuilding and short-term

export finance was transferred to advances. These credits were previously included in "bills discounted" in Table 8 and therefore excluded from earlier advance figures.

November 1973 — For the first time advances made by the six finance houses recognized or confirmed as banks in either January 1972 or January 1973 were included. The changes shown between August and November 1973 excluded advances for these banks because they could not be fully classified at the former date. At mid-August 1973 advances made by these institutions totalled 1,894.

March 1974 — The table now gave greater emphasis to quarterly changes in advances and was extended to provide greater detail about advances in foreign currency.

August 1974 — 95 of lending by "other banks in Great Britain" previously classified to "hire-purchase finance houses" was reclassified to "other personal".

September 1975 — The seasonal adjustment procedure was modified (from a multiplicative method to an additive one) so as to take sufficient account of the sharp increase in half-yearly interest charges, which tended to cause outstanding advances to be substantially higher in May and November compared with February and August.

December 1975 — This table was the first of a revised series and was derived from the new system of banking returns (see QB June 1975). The principal changes were:

a) The definition of advances to UK residents changed to coincide with that now used in the balance sheets. In particular, export lending

under the special medium-term scheme, which had been shown as lending to the UK exporter, was now regarded as lending to overseas. This produced lower figures for clearing banks' advances, particularly to manufacturing industries and construction. Lending to banks in the UK was also excluded from the analysis and came under the heading of market loans rather than advances.

b) The analysis was confined to lending to UK residents.

c) The foreign currency element of advances was now shown separately for each of the main headings.

d) Figures for Northern Ireland banks were integrated as far as possible into the main table.

March 1976 — The table was expanded to remove, as far as possible, the effect of changes in exchange rates on the sterling value of advances in foreign currencies.

August 1976 — Figures for Northern Ireland banks were not available because of industrial action by bank employees. Total figures for all banks for mid-August 1976 included those for Northern Ireland banks for mid-May 1976.

March 1977 — The analysis was expanded to show figures for each group of banks together with the sterling component of total advances by all banks for each of the 23 individual categories of borrower.

March 1979 — The table became less detailed in that there was no longer a breakdown according to bank group, but it now included acceptances as well as advances.

February 1982 — As a result of changes in the reporting population associated with the introduction of the monetary sector, the figures for this quarter (and subsequent ones) were not comparable with those for previous quarters.

February 1983 — From this date market loans to "UK public corporations" and to "UK private sector" were classified as advances. In November 1982 these accounted for 2,844 of "Total lending to UK residents", of which sterling accounted for 1,431. Changes for the quarter to February 1983 were therefore not shown, except for lending to persons which was thought not to be affected.

November 1983 — The introduction of a revised analysis, based upon the new 1980 Standard Industrial Classification (an increase from 23 to 36 categories), resulted in a break in the series; the figures shown were not comparable with those for August 1983 and earlier.

November 1984 — Figures for November 1984 were affected by a reclassification from "other financial" to "other services"

November 1986 — Up to and including August 1986, "securities dealers, stockbrokers, jobbers etc" were included within "business and other services". From November 1986, separate data were available.

The reporting date was changed from the third Wednesday in the month to the last working day in the month.

CHANGES IN LAYOUT OF TABLES

Dec 1960 Table 6 - London clearing banks
7 - Scottish banks
8 - Northern Irish banks
9 - Analysis of bank advances
10 - Overseas banks in London:
A British overseas
B American
C Other foreign
11 - Accepting houses

Mar 1961 All table numbers increased by 1

Mar 1963 Table 11D "Overseas banks: other" added

Dec 1963 All table numbers increased by 2

Mar 1964 All table numbers increased by 1

Jun 1964 "Overseas banks in the UK" moved from Table 14 to 16
"Accepting houses and other overseas banks" (new) became Table 14

Mar 1965 Table 10 - Domestic banks:
i) London clearing banks
ii) Scottish banks
iii) Northern Ireland banks
11 - Accepting houses and overseas banks in the UK
12 - Accepting houses
13 - Overseas banks in the UK:
i) British overseas and Commonwealth
ii) American banks
iii) Foreign banks and affiliates
iv) Other banks
14 - Analysis of bank advances

Mar 1966 All table numbers decreased by 1

Nov 1966 From this date, no new data were added to Table 13.1 - "Analysis of advances: British Bankers' Association"

Feb 1967 Table 13.2 "Analysis of advances: all banks in Great Britain" added

Jun 1968 Table 9 - Deposit banks:
1 London clearing banks
2 Scottish banks
3 Northern Ireland banks

10 - Accepting houses, overseas banks and other banks in the UK:
1 Summary
2 Accepting houses
3 Overseas banks:
British overseas and Commonwealth
American
Foreign banks and affiliates
Other overseas
4 Other banks

11 - Analysis of bank advances by banks in the UK

Jun 1971 Table 10 - Accepting houses etc:
1 Summary
2 Accepting houses
3 British overseas and Commonwealth
4 American
5 Foreign banks and affiliates
6 Other overseas
7 Other banks

Mar 1972 Table 8 - Banks in the UK:
1 Summary
2 Deposit banks: London clearing banks
3 Deposit banks: Scottish banks
4 Deposit banks: Northern Ireland banks
5 Deposit banks: Other
6 Accepting houses
7 British overseas and Commonwealth
8 American
9 Foreign banks and affiliates
10 Other overseas
11 Other banks in the UK

10 - Analysis of advances by banks in the UK

Oct 1975 Table 8 - Banks in the UK:
1 Summary
2 UK banks: London clearing banks
3 UK banks: Scottish banks
4 UK banks: Northern Ireland banks
5 UK banks: Accepting houses
6 UK banks: Other
7 Overseas banks: American
8 Overseas banks: Japanese
9 Overseas banks: Other
10 Consortium banks

Mar 1976 Table 8 renumbered to 2

Jun 1976	Table 10	renumbered to 4
Mar 1979	Table 4	renumbered to 5 and Table 2 renumbered to 3
Dec 1983	Table 3 - 1	Banks in the UK: balance sheet of monthly reporting institutions
	2	Retail banks
	3	Accepting houses
	4	Other British
	5	American
	6	Japanese
	7	Other overseas
	8	Consortium
Mar 1985	Table 5 renumbered to Table 5.1	
Dec 1986	Table 3.9 "Quarterly reporting institutions" added	
Feb 1989	Table 3.8 discontinued and the "Quarterly reporting institutions" Table (formerly 3.9) renumbered as 3.8	

ANNEX 5 THE STATISTICAL TREATMENT OF THE TRUSTEE SAVINGS BANKS AND NATIONAL SAVINGS WITHIN M5

During the 1960s and early 1970s, the TSBs acted in effect as a part of the National Savings movement, channelling deposits placed with them into public sector debt. By 1986, TSB Group plc had been "privatised" (in the sense that control passed to those who subscribed to its newly issued share capital), and was by then a banking group providing a wide range of retail banking services. The TSBs' evolution into a retail bank is reflected by various changes in the presentation of statistics relating to them.

Prior to November 1976 the TSBs were part National Savings institutions and part "other financial institution" (OFI). The TSBs deposits contributed to the total of "National Savings" in three ways: "Save as you earn", "ordinary departments" (comprising savings accounts and current accounts) and "special investment departments". This can be seen, for example, in Financial Statistics, March 1975, Table 26. At the same time, the TSB "special investment departments" were treated as an OFI (along with the National Savings Bank Investment Account). This can be seen, for example, in Financial Statistics, March 1975, Tables 64 and 65.

There was a different treatment between November 1976 and 1979 Q3. The TSBs' contribution to "Save as you earn" was amalgamated with other Department for National Savings figures. The TSB "new departments" were formed by amalgamating the "special investment departments" and the current accounts previously included in "ordinary departments". This can be seen, for example, in Financial Statistics, March 1977, Table 3.13. The "new departments" were treated as OFIs and a balance sheet was available; this can be seen, for example, in Financial Statistics, March 1979, Table 8.2. The amalgamation created some breaks in series in 1976 Q4 associated with certain TSBs (see the footnotes to Table 3.13 in Financial Statistics, March 1977).

Between 1979 Q3 and 1981 Q4 there was yet another treatment. The new and ordinary departments were amalgamated in November 1979. The combined departments were treated as an OFI and ceased to be included in "National Savings". This can be seen, for example, in Financial Statistics, March 1980, Table 8.2, where a TSB balance sheet is shown.

Finally, at the end of 1981 the TSBs joined the monetary sector and ceased to be OFIs. The Central Trustee Savings Bank joined at the same time (having previously been an OFI; no separate figures were shown for it, since it seems to have acted as an intermediary between the TSBs and the banks).

The way this affects the monetary aggregates is as follows. Up until 1976 Q3, deposits with ordinary departments and special investment departments are included in M5, but not in M3 and M4. From 1976 Q4 to 1981 Q4, deposits with ordinary and new departments are included in M5, but not in M3 and M4. Over the whole period up to 1981 Q4, the deposits placed <u>by</u> the TSBs with banks were included in M3 and M4. From 1982 Q1, deposits placed <u>with</u> the TSBs were included in M3, M4 and M5, and deposits placed <u>by</u> the TSBs with other banks were excluded.

It is also worth noting that over the entire period up to the present, M5 also includes holdings of the following National Savings instruments: British Savings Bonds (negligible after 1985); Defence and National Development Bonds (negligible after 1974); Premium Bonds; National Savings stamps and gift tokens; and the National Savings Bank ordinary account and investment account. None of these items is included in M3 and M4.

ANNEX 6: THE TREATMENT OF FOREIGN CURRENCY ITEMS

In the period 1963-1971 there was only one major change in sterling exchange rates. This was the sterling devaluation on 18 November 1967 (see the December 1967 Bulletin, p335). Consequently, with the exception of 1967 Q4, any change in banks' foreign currency deposits and loans (as measured in sterling terms) could be attributed to transactions undertaken by the banks or their customers. In 1967 Q4 part of the change in foreign currency deposits and loans was due to the change in the value of sterling; this effect is quantified below. Transactions in foreign currrency deposits and loans in 1967 Q4 were calculated after allowing for the effects of the change in value of sterling.

£ mns

	Current and deposit accounts	Advances
UK residents (largely companies)	+ 35	+ 35
Overseas residents	+575	+535

On 15 August 1971, it was announced that "temporarily" the dollar would no longer be convertible into gold or other reserve assets (see the September 1971 Bulletin p295). From that point on, exchange rates were no longer fixed, although an attempt was made to agree an international realignment of rates on 18 December 1971 (see the March 1972 Bulletin, p3); this arrangement broke down during 1972 (see the September 1972 Bulletin, p303).

Although exchange rates were no longer fixed after 1971 Q3, the statistics for transactions in banks' foreign currency deposits and loans continued to be calculated as the differences in amounts outstanding (as measured in sterling terms) at the beginning and

end of each month or quarter. This was because there was insufficient information available about the currency composition of banks' liabilities and assets and about the methods of valuation of these items in sterling terms being used by the banks. It was not until the introduction of a new reporting system in 1975 that the necessary information became available, and transactions could be estimated separately from changes in amounts outstanding (see the December 1975 Bulletin, p346).

Thus any series which purports to measure transactions in banks foreign currency liabilities and assets in sterling terms has, in effect, two breaks in it; one in 1971, when "floating" exchange rates came into being, and another in 1975 when the proper calculation of transactions began. This does not have a major effect on the monetary aggregates since, for example, the aggregate M3 contains only sterling items, and changes in M3c include both transactions and changes in value of UK residents' foreign currency deposits. But it should be borne in mind when interpreting other series; for example flow of funds matrix data are derived from the monetary and banking data and are thus similarly not adjusted for currency fluctuations before the second quarter of 1975.

ANNEX 7: THE CALCULATION OF GROWTH RATES AROUND A BREAK IN SERIES

When there is a large break in a series, the method that has conventionally been employed for calculating 12-month growth rates produces questionable answers for the 11 months following the break.

Our present practice for calculating growth rates is as follows:

(a) calculate flows in each month after adjusting for changes in population (ie calculate the flow for those banks reporting at both the beginning and end of the month);

(b) calculate the 1-month percentage change by dividing the flow (as in (a)) by the level at the start of the month;

(c) calculate the 3-month percentage change by summing the flows over the three months (each calculated individually as in (a)) and then divide by the level at the start of the three-month period;

(d) calculate the 6 and 12-month percentage changes by the same method as in (c).

There are two ways in which one could criticise this procedure:

First, stage (b) is inconsistent. It might be better to calculate the percentage change for those banks reporting at both dates, therefore dividing by the level at the start of the period for those banks reporting at both dates (ie not including in this level the contribution of those banks about to quit).

Second, stage (c) suffers in an additional way. If a large number of banks joins the population in months 2 or 3, then the level at the start of the period may be too low as a divisor; it might be better to scale it up in some way to be more representative of the end-period population.

Some hypothetical examples give an idea of the scale of the problem:

Example 1

start of month level = 100 (of which 5 contributed by banks not reporting at the end month)

end-month level = 97

The monthly flow = 97 - (100-5) = 97-95 = 2
(ie the contribution of banks present at both dates grows by 2)

The percentage change in the month is calculated as

$\frac{2}{100} = 2\%$

But it might be more sensible to calculate $\frac{2}{95} = 2.11\%$

This example probably exaggerates the problem, since retiring banks usually run down their business and are unlikely to account for 5% of the total just before they expire. But if one were calculating, say, the change in building society deposits in the month that a society were to leave the sector to become a bank, this factor would be highly significant.

Example 2

Suppose there is a big jump in series in month 2 (eg the TSB joining the monetary sector in 1981, or a building society joining in the future):

	levels	flows
month 0	100	
month 1 (old)	101	+ 1
(new)	112	
month 2	114	+ 2
month 3	117	+ 3

The quarterly flow is 1+2+3 = 6

The conventional calculation of the percentage change is

$$\frac{6}{100} = 6\%$$

But perhaps one ought to scale up the level of 100 in month 0 by the ratio 112/101, to 110.9; the percentage change would then be

$$\frac{6}{110.9} = 5.4\%$$

One might go further, and say that +1 is in some sense an underestimate of the flow in month 1 (it is a different concept from the flows in months 2 and 3). One might want to calculate the flow in month 1 as $+1 \times \frac{112}{101} = +1.11$

and hence derive the 3-month growth rate as $\frac{6.11}{110.9} = 5.5\%$

This might be the best calculation, since it approximates to the growth over the 3-month period on the new basis.

ALTERNATIVE METHODS OF CALCULATION

The first of the two criticisms, described in example 1, can be met only by changing the way in which the level which is used as the divisor is calculated.

The second criticism, described in example 2, can be met in more than one way:

(a) Use compound growth rates. This would mean calculating each of the 1-month growth rates (by the best possible method) and then compounding them to give a 3-month growth rate (eg if the 1-month rates in a quarter are 2%, 1% and 3%, the 3-month growth rate is (1+0.02) x (1+0.01) x (1+0.03) -1 = 0.0611 (ie 6.11%). In a series without breaks, this produces the same answer as the conventional method, and in a series with breaks it produces the same answer as the last version of the rate described in 3(ii) above (the one giving +5.5% as the answer). The same compounding

method could be used to derive 6 and 12-month percentage changes, or to calculate biannual and annual growth rates for series where the basic frequency is quarterly rather than monthly.

Example (around the +586/+0.6% break in M3 in March 1983 when the reporting population was expanded following the Banking Statistics Review).

	Level	Flow	1 month %	3 month %	
				conventional method	compound method
Feb	92,437				
Mar	94,251	1,228*	1.3		
Apr	94,738	516	0.5		
May	95,693	957	1.0	2.9**	2.8***

* 1,814 before adjustment for break

** $\frac{(1,228 + 516 + 957)}{92,437} \times 100 = 2.9\%$

*** $((1.013 \times 1.005 \times 1.01) - 1) \times 100 = 2.8\%$

(b) Use additional information, where it is available. There exist, for example, TSB figures prior to the 1981 break. These data could be used to construct alternative 1-month changes prior to a break, not for use as the 1-month rate itself, but only for use in calculating compound 3, 6 and 12-month rates after the break. This is complicated; it has to be remembered that these 1-month rates are calculated in a way that implies that the new institution is already in the sector, and are to be used only for the purpose of calculating 3, 6 and 12-month growth rates in periods after the break.

Superficially, the possibility of using methods (a) and (b) implies that it would be possible to construct a break-adjusted series. Simply take the series of 1-month growth rates and compound them, giving the cumulative growth since the start of the series. This is a sort of index, or a series of scaling factors; if it was expressed so as to take the value 1.0 after the last break, then it could be applied as a series of scaling factors to the published levels series. But there is a major snag: there are alternative measures of the 1-month growth rates in some periods (see (b)

above). Which of the alternatives should be used? At whatever point one switches from one alternative to another, a break is introduced into the compounded growth rate series. This is another way of stating the obvious: TSB was not a normal bank in the 1960s, it very clearly was a bank in the mid-1980s, but at what point did it become a bank (ie at what point should be its data begin to be included in the calculation of the growth of banking business)?

ANNEX 8: FURTHER REFERENCES

Articles covering various aspects of the monetary and banking series appear regularly in the Bank of England Quarterly Bulletin. The list below is not exhaustive, but covers all major articles; the article in September 1985 (referred to below) contains further detailed references.

Any changes in the definition of series and the content of tables are noted each quarter in notes to the tables in the "Statistical Annex". Full notes and definitions are included annually, latterly in the February issue. Notes and definitions also appear in the CSO's "Financial Statistics Explanatory Handbook".

ARTICLES IN THE BANK OF ENGLAND QUARTERLY BULLETIN

December 1962	p267	"New banking statistics" (accepting houses and overseas banks in London; improvements in series and new contributors)
June 1963	p98	"New series of external liabilities and claims in sterling" (introduction of new series and description of differences from its predecessor)
December 1963	p285	"Banking statistics" (including "new quarterly figures for the banking system")
March 1967	p48	"New classification of bank advances" (introduction of quarterly classification to replace that published by the British Bankers' Association)
June 1969	p176	"The UK banking sector 1952-67" (review of evolution, with statistics)

December 1969	p448	"The operation of monetary policy since the Radcliffe Report" (includes a brief account of institutional and statistical changes)
June 1970	p159	"The importance of money" (the function of money as a medium of exchange)
September 1970	p320	"The stock of money" (introduction of the first set of money supply tables)
December 1970	p432	"A revised presentation of external liabilities and claims in sterling" (new tables which group the statistics in a different way)
March 1972	p76	"Changes in banking statistics" (interim changes, pending full review, following introduction of new arrangements for control of credit; introduces monthly series for the money stock, including estimates of M3 back to April 1970; M2 discontinued)
December 1972	p512	"New money stock tables" (tables showing quarterly and monthly changes in M1 and M3)
December 1973	p453	"Banking sector balance sheets" (long run of figures from 1963-1972, with notes and definitions)
June 1975	p162	"New banking statistics" (new series of statistical returns to be introduced following review with the banks; change from 'current accounts' to 'sight deposits' as a component of M1)
December 1975	p346	"Banking sector" (part of "Financial Review") (details of changes in

statistics in 1975 following introduction of new reporting forms)

March 1977 p39 "DCE and the money supply - a statistical note" (introduction of sterling M3; redefinition of DCE; explanation of counterparts)

June 1978 p196 "Seasonal adjustment of monthly money statistics" (explanation of method used for seasonal adjustment of monthly money series, M1 and M3)

December 1978 p523 "External and foreign currency flows and the money supply" (effect on sterling M3 of external transactions)

September 1979 p278 "Components of private sector liquidity" (discussion of the categorisation of liquid assets)

March 1981 p59 "The monetary base - a statistical note" (describes possible components of the monetary base and provides statistics back to 1919)

June 1981 p200 "Seasonal adjustment of money and its counterparts" (describes methodological changes made in estimating seasonal adjustments for the money supply and its counterparts)

September 1981 p374 "Purposes of banking statistics" (background paper to general review of banking statistics)

December 1981 p531 "Money and banking figures: forthcoming changes" (statistical changes associated with new monetary control arrangements; change from "banking sector" to "monetary

		sector"; within external and foreign currency counterparts to sterling M3 the overseas sector's sterling business was split between that of banks and that of non-banks)
June 1982	p224	"Transactions balances - a new monetary aggregate" (introduction of new M2)
December 1982	p530	"Composition of monetary and liquidity aggregates, and associated statistics" (discussion of the categorisation of financial assets and the definition of monetary aggregates; discussion of the counterparts of sterling M3 and PSL2)
March 1983	p69	"Review of banking statistics" (details of modifications to system of banking statistics including supervision of recognised banks and LDTs, new areas of activity such as housing finance and improvements to international banking statistics)
	p78	"Changes to monetary statistics" (extension of M2 to include building society shares and deposits and deposits with the National Savings Bank ordinary account; split of term shares into with/without withdrawal facilities)
June 1983	p172	"Domestic Credit Expansion" (reasons why inclusion of DCE as a memorandum item in regular monetary statistics is to be discontinued)
	p256	"Seasonal adjustment of money and its counterparts" (changes in seasonal adjustments resulting from annual update)

December 1983	p525	"External flows and broad money" (introduction of the "wider sterling aggregate" and the alternative presentation of counterparts to sterling M3)
	p562	"Revised presentation of banking statistics" (explanation of changes in the presentation of balance sheet information in Table 3 of the statistical annex)
March 1984	p78	"Changes to monetary aggregates and the analysis of bank lending". (introduction of weekly averaged M0; redefinition of sterling M3 to exclude public sector deposits; introduction of new industrial classification for mid-quarterly analysis of banks' advances and acceptances)
June 1985	p185	"The statistical treatment of banks' foreign currency capital" (reclassified from net non-deposit liabilities to external and foreign currency counterpart)
September 1985	p392	"Developments in UK banking and monetary statistics since the Radcliffe Report" (survey of the provision of banking and monetary statistics from the 1960s)
March 1986	p30	"Analysis of bank lending - special survey covering lending in categories 'other financial' and 'other services'" (analysis of figures from banks accounting for over 80% of lending in residual categories)
June 1986	p186	"Operation of monetary policy" (includes redefinition of PSL2 to include term shares, SAYE, etc)

September 1986 p345 "Calendar month money and banking statistics" (trailer for the move of banks' monthly statistical returns from the middle to the end of the month)

December 1986 p478 "Reclassification of securities dealers" (reclassified from industrial and commercial companies or personal sector to 'other' financial institutions)

p499 "Financial change and broad money" (Governor's Loughborough speech examining the growth of broad money and the implications for inflation)

p519 "Banking and monetary statistics: a change in reporting dates" (implications for measurement of monetary and liquidity aggregates and for the timing of published statistics: presents calendar monthly series for main aggregates and bank lending constructed from end-month returns provided by largest banks since mid-1982)

May 1987 p212 "Measures of broad money" (introduction of M4, renaming of PSL2 as M5, sterling M3 as M3 and M3 as M3c)

OTHER REFERENCES

Bank of England Statistical Abstract No 1 (1970)

Bank of England Statistical Abstract No 2 (1975)

"Public sector bank deposits: redefinition of the PSBR and money stock", Economic Trends, February 1984.

"PSBR: new data on notes and coin", Economic Trends, July 1988.

CSO Financial Statistics Explanatory Handbook, 1988 Edition, March 1988.

The Development and Operation of Monetary Policy 1960-1983, Bank of England, 1984 (a selection of material from the Bank of England Quarterly Bulletin with introductory and linking passages).

Bank of England Discussion Papers

	Title	Author
1-5, 8, 11-14, 16-17, 19-22	*These papers are now out of print, but photocopies can be obtained from University Microfilms International (see below).*	
6	'Real' national saving and its sectoral composition	C T Taylor A R Threadgold
7	The direction of causality between the exchange rate, prices and money	C A Enoch
9	The sterling/dollar rate in the floating rate period: the role of money, prices and intervention	I D Saville
10	Bank lending and the money supply	B J Moore A R Threadgold
15	Influences on the profitability of twenty-two industrial sectors	N P Williams
18	Two studies of commodity price behaviour: Interrelationships between commodity prices Short-run pricing behaviour in commodity markets	 Mrs J L Hedges C A Enoch
23	A model of the building society sector	J B Wilcox
24	The importance of interest rates in five macroeconomic models	W W Easton
25	The effects of stamp duty on equity transactions and prices in the UK Stock Exchange	Mrs P D Jackson A T O'Donnell
26	An empirical model of company short-term financial decisions: evidence from company accounts data	Ms G Chowdhury C J Green D K Miles
27	Employment creation in the US and UK: an econometric comparison	I M Michael R A Urwin
28	An empirical model of companies' debt and dividend decisions: evidence from company accounts data	Ms G Chowdhury D K Miles
29	Expectations, risk and uncertainty in the foreign exchange market: some results based on survey data	M P Taylor
30	A model of UK non-oil ICCs' direct investment	E J Pentecost
31	What has the European Monetary System achieved?	M P Taylor M J Artis
32	The demographics of housing demand; household formations and the growth of owner-occupation	M J Dicks
33	Measuring the risk of financial institutions' portfolios: some suggestions for alternative techniques using stock prices	S G F Hall D K Miles
34	An error correction model of US consumption expenditure	I R Harnett
35	Industrial structure and dynamics of financial markets; the primary eurobond market	E P Davis
36	Recent developments in the pattern of UK interest rates	D K Miles

Papers presented to the Panel of Academic Consultants[a]

	Title	Author
8-10, 14-15, 17-20	*These papers are now out of print, but photocopies can be obtained from University Microfilms International (see below).*	
22	Monetary trends in the United Kingdom	Prof A J Brown Prof D F Hendry and N R Ericsson
23	The UK economic recovery in the 1930s	G D N Worswick P N Sedgwick Prof Michael Beenstock Dr Forrest Capie Prof Brian Griffiths
24	Employment, real wages and unemployment in the United Kingdom*	Prof J R Sargent Sir Bryan Hopkin

Technical Series

	Title	Author
1-11	*These papers are now out of print, but photocopies can be obtained from University Microfilms International (see below).*	
12	The development of expectations generating schemes which are asymptotically rational	K D Patterson
13	The arch model as applied to the study of international asset market volatility	R R Dickens
14	Modelling the UK economy in a stock-flow consistent manner	E P Davis
15	International comparison of asset market volatility: a further application of the ARCH model	R R Dickens
16	A three sector model of earnings behaviour	D J Mackie
17	Integrated balance sheet and flow accounts for insurance companies and pension funds	Raymond Crossley
18	Optimal control of stochastic non-linear models	S G Hall I R Harnett M J Stephenson
19	A multivariate GARCH in mean estimation of the capital asset pricing model	S G Hall D K Miles M P Taylor
20	The interest elasticity of consumers' expenditure	M J Dicks
21	Modelling the flow of funds	D G Barr K Cuthbertson
22	Econometric modelling of the financial decisions of the UK personal sector: preliminary results	D G Barr K Cuthbertson
23	Breaks in monetary series	S L Topping with S L Bishop

* These papers are no longer available from the Bank, but photocopies can be obtained from University Microfilms International, at White Swan House, Godstone, Surrey RH9 8LW.

(a) Other papers in this series were not distributed.