Effects of Changes in Banking and Exchange Control Legislation in the United Kingdom on the Significance of the Money Aggregates as Indicators 1971-81 *

I. Introduction

In the decade 1971-81 there were several changes made to banking legislation in the United Kingdom. In September 1971 the banking system was deregulated. At the end of 1973 the "corset" was introduced; it was removed in early 1975, reintroduced at the end of 1976, then removed in mid-1977 until mid-1978, when it was reintroduced. It was then finally abolished in June 1980. Until 1979, too, exchange controls, principally directed at discouraging resident outflows, were in operation. In October 1979 these controls were completely abolished.

These developments had important implications for the significance of the various money aggregates as indicators of the thrust of the monetary sector. This paper will try to review the ways in which the monetary aggregates have been "distorted" as indicators by the changes in legislation which have occurred.

We consider the distortions to the money aggregates, created by changes in legislation, under three headings: (a) the effects of Competition and Credit Control (CCC), (b) the effects of the Supplementary Special Deposits Scheme ("corset") and (c) the effects of the removal of exchange controls.

To put the matter in historical perspective there are eight relevant phases:

1. From the implementation of Competition and Credit Control (CCC) in September 1971 to the introduction of the corset in December 1973.

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2. Corset (I) - December 1973 (effective April 1974) to February 1975.

3. No corset - February 1975 to November 1976.

4. Corset II - November 1976 (effective February 1977) to August 1977.

5. No corset - August 1977 to June 1978.

6. Corset IIIA - June 1978 (effective August 1978) to November 1979 (end of exchange controls).

7. Corset IIIB - November 1979 to June 1980.

8. Post-corset, post exchange controls from June 1980.

II. Competition and Credit Control (CCC)

The principal changes introduced by CCC in September 1971 were the following: controls over bank interest rates were lifted; lending ceilings, which had been the principal method of monetary control up to then, were discontinued; the 8 per cent minimum cash ratio and the 28 per cent minimum liquid asset ratio were both replaced by a 1½ per cent cash ratio and a 12½ per cent minimum reserve asset ratio, respectively.[1]

From our standpoint the freeing of controls over bank lending and interest rates was the most important development. Table 1 tries to provide a detailed indication of how the money aggregates would have been distorted by deregulation.

It is evident from a close examination of the table that the effects are very complicated. We concentrate on the effects of deregulation, i.e., the effects of the banks' competitive bidding for funds which followed deregulation.[2]

To begin, the banks can attract funds out of currency into interest-bearing deposits. In this case, M_1 will fall but SM_3 and M_3 will

[1] Eligible assets here are balances with the Bank of England, Treasury bills, local authority bills, money at call with discount houses and listed brokers, commercial bills, and government securities with one year or less to maturity. Previously eligible liquid assets were cash, money at call with discount houses, commercial bills, and Treasury bills.

[2] This became particularly acute from end-1972.

TABLE 1

COMPETITION AND CREDIT CONTROL, SEPTEMBER 1971
EFFECTS ON SIGNIFICANCE OF MONEY AGGREGATES (M_1, SM_3, and M_3) [1]

Potential Source of Funds to Banks	Effects on Bank Reserves	Implications for Money Aggregates as Indicators
1. Currency	Increase	M_1 down. SM_3 and M_3 unaffected. SM_3 and M_3 better as indicators than M_1.
2. Resident switches from foreign currency [2]	Increase	SM_3 up. M_1 and M_3 unaffected. M_3, M_1 better indicators than SM_3.
3. Non-resident inflow [2]	Increase	M_1, SM_3 and M_3 all unaffected. All three good indicators.
4. Demand deposit	None	M_1 down, SM_3 and M_3 unaffected. M_1 distorted – inferior as an indicator.
5. Other financial assets (finance houses, building societies, local authorities)	None	M_1 down,[3] SM_3 and M_3 same. SM_3 and M_3 distorted. M_1 probably better indicator.
6. Reduced free reserves	None	Increase in SM_3, M_3. Assumed no effect on M_1. SM_3 and M_3 indicators.
7. Advances ("round tripping")	None	Increase in SM_3, M_3. No change in M_1. M_1 better indicator.
8. Multiple expansion from excess reserves	None	Assumed increase in SM_3, M_3. SM_3, M_3 better indicators.

[1] Assumes the monetary authorities take no monetary action following deregulation.
[2] Assumes fixed exchange rates.
[3] Indirect effect of shift.

be unchanged. Clearly, M_1 will now be a poor indicator, since there has not been any change in private sector liquidity.

In principle, too, the banks could attract funds from overseas:[3] if residents switch from foreign deposits SM_3 will rise but M_3 and M_1 will be unchanged. Now SM_3 will be a poor indicator while M_1 and M_3 will be better indicators.

The inflow into interest-bearing deposits may also come from demand deposits. In this case M_1 will be distorted.

The higher interest rates offered on interest-bearing deposits may also attract funds from outside the banking system (e.g., from finance houses, building societies, etc.). This forces up market interest rates; the probable end result is some fall in M_1 while SM_3 remains unchanged.

[3] In the post-CCC environment with sterling relatively weak this could not have been important.

Now, however, SM_3 will be a poor indicator because although SM_3 is unchanged the thrust of the monetary sector is now restrictive (i.e., there is now an increase in the demand for M_3, which is deflationary). In this case M_1 might be the better indicator.

If the interest rate on advances adjusts upward more slowly than the interest rate on time deposits there is a possibility that the latter will be higher than the former, encouraging "round tripping", i.e., borrowing to place funds in interest-bearing deposits. Now SM_3 and M_3 will record an increase while M_1 will be unchanged. Although round-tripping creates additional deposits, these are, by definition, held idle and hence have no significance for aggregate demand. Now SM_3 and M_3 are distorted while M_1 is the better indicator. This round-tripping did in fact become significant in the United Kingdom in the course of 1973.

Finally, there is the potential multiple expansion of deposits from excess reserves. Deregulation itself created some excess reserves: principally from shifts out of currency; but as we also noted CCC lowered reserve requirements which would have led to some deposit creation. Much of the deposit creation would have ended up in the form of interest-bearing deposits. So now SM_3 and M_3 would be much better indicators than M_1.

To summarise then, CCC would have distorted the money aggregates in many ways. In some cases M_1, in other cases SM_3, would have been distorted. It is evident from the analysis that neither M_1 nor M_3 would, other things being equal, have been very good indicators in the post-CCC environment. But the analysis undertaken above does leave a strong presumption that, on balance, SM_3 would probably have been a superior indicator.

The growth of M_1 in 1972 and 1973 was much more modest than the growth of SM_3 (Table 2). From some 14 per cent growth in 1971, SM_3 grew at some 25 per cent in the subsequent two years. The growth of M_1, however, fell from 17 per cent in 1971 to some 13 per cent in 1972, then fell sharply again to 5 per cent in 1973 (Table 2). The very sharp acceleration in inflation which occurred in 1974 and 1975 is clearly much better related to the behavior of SM_3 than M_1 and this is largely consistent with our own interpretation of the money aggregates.

Our own analysis suggests that, following CCC, one would have expected (a) a fall in the currency to total deposit ratio, (b) a fall in the cash deposit ratio, (c) a fall (rise) in the sight (interest bearing) to total deposit ratio, and (d) a rise in the SM_3 money multiplier. These expectations were in fact completely fulfilled in the relevant years (Table 3). From end-1970 to end-1973 the currency to total deposit ratio fell from 22 per cent to some 16 per cent. Over the same period the cash deposit ratio fell from 7.5 per cent to 4.5 per cent, while the sight (interest-bearing) to total deposit ratio fell (rose) from 44 (52) per cent to 32 (65) per cent.[4] Finally, the money multiplier rose from 4.1 to 5.7.

TABLE 2

UNITED KINGDOM: GROWTH OF MONEY AGGREGATES AND PER CENT CHANGE IN CONSUMER PRICES

Year	B[1]	M_1[1]	SM_3[1]	M_3[1]	Pc[2]
1971	8.5	17.0	14.6	13.8	9.4
1972	11.1	13.4	26.4	27.6	7.1
1973	8.2	5.1	26.0	27.6	9.2
1974	17.0	10.8	10.2	12.6	16.0
1975	12.6	18.6	6.5	7.6	24.2
1976	11.5	11.3	9.5	11.2	16.5
1977	13.9	21.5	10.0	9.8	15.8
1978	14.9	!6.4	14.9	14.9	8.3
1979	8.4	9.1	12.7	12.3	13.4
1980	2.6	3.9	18.6	18.7	18.0
1981	5.1	9.8	13.6	18.0	11.9

B = base money.
[1] From end year to end year.
[2] Per cent change in consumer prices.
Source: Bank of England Quarterly Bulletin.

III. The Supplementary Special Deposits Scheme ("Corset")

1. *Background*

The corset was first introduced in December 1973.[5] Its principal aim was to contain the growth of sterling M_3 which, as we have seen, had been growing very rapidly in the previous two years. It laid down

[4] This is a broad agreement with the analysis in HOWARD (1981).
[5] For details and analysis of the corset see *Bank of England Quarterly Bulletin* (1982).

TABLE 3

1 Year	2 $\frac{M_1}{B}$	3 $\frac{SM_3}{B}$	4 $\frac{M_3}{B}$	5 $\frac{BC}{TD}$	6 $\frac{PNC}{TD}$	7 $\frac{PSSD}{TD}$	8 $\frac{PSTD}{TD}$	9 $\frac{PBSD}{TD}$	10 $\frac{RDF}{TD}$
1970	2.2	4.1	4.2	7.5	22.4	44.0	52.5	3.5	3.5
1971	2.4	4.3	4.4	6.4	21.7	45.8	51.1	3.2	2.6
1972	2.4	4.9	5.1	5.1	19.1	40.2	56.9	2.9	3.8
1973	2.4	5.7	6.0	4.4	15.8	32.3	65.1	2.6	5.2
1974	2.3	5.4	5.8	4.8	16.8	32.0	65.9	2.2	7.9
1975	2.4	5.1	5.5	4.6	18.6	36.5	60.5	2.9	9.4
1976	2.4	5.0	5.5	4.4	19.5	37.0	60.3	2.7	11.5
1977	2.5	4.8	5.3	4.4	20.5	42.5	54.1	3.4	11.4
1978	2.6	4.8	5.3	4.3	20.6	43.2	53.8	3.0	11.4
1979	2.6	5.0	5.5	4.0	19.8	41.5	55.9	2.6	10.9
1980	2.6	5.8	6.4	2.6	17.6	35.2	62.1	2.7	10.8
1981	2.7	6.3	7.1	2.3	16.2	34.2	63.4	2.4	15.7

Note: Last six columns as per cent.
B = Base money
BC = Bankers' deposits with Bank of England and bankers' notes and coins
PNC = Notes and coins in circulation with public
PSSD = Private sector sterling sight deposits
PSTD = Private sector sterling time deposits
PBSD = Public sector sterling deposits
RDF = Residents' deposits in other currencies
TD = PSSD + PSTD + PBSD (total deposits in sterling)
B = BC + PNC
M_1 = PNC + PSSD
SM_3 = PNC + PSSD + PSTD + PBSD (sterling M_3)
M_3 = PNC + PSSD + PSTD + PBSD + RDF

1 $$\frac{B}{TD} = \frac{BC}{TD} + \frac{PNC}{TD}$$

2 $$\frac{M_1}{TD} = \frac{PNC}{TD} + \frac{PSSD}{TD}$$

3 $$\frac{SM_3}{TD} = \frac{PNC}{TD} + \frac{PSSD}{TD} + \frac{PSTD}{TD} + \frac{PBSD}{TD}$$

4 $$\frac{M_3}{TD} = \frac{PNC}{TD} = \frac{PSSD}{TD} = \frac{PSTD}{TD} + \frac{PBSD}{TD} + \frac{RDF}{TD}$$

5 $$\frac{M_1}{B} = \frac{\frac{PNC}{TD} + \frac{PSSD}{TD}}{\frac{BC}{TD} + \frac{PNC}{TD}}$$

6 $$\frac{SM_3}{B} = \frac{\frac{PNC}{TD} + \frac{PSSD}{TD} + \frac{PSTD}{TD} + \frac{PBSD}{TD}}{\frac{BC}{TD} + \frac{PNC}{TD}}$$

7 $$\frac{M_3}{B} = \frac{\frac{PNC}{TD} + \frac{PSSD}{TD} + \frac{PSTD}{TD} + \frac{PBSD}{TD} + \frac{RDF}{TD}}{\frac{BC}{TD} + \frac{PNC}{TD}}$$

certain penalties for banks whose interest-bearing eligible liabilities grew at a faster-than-prescribed rate. The penalty, which took the form of lodgment of noninterest-bearing deposits with the Bank of England, was progressive, ranging from 5 per cent to 50 per cent depending on the degree of infrigement.

2. *How the corset distorted the money aggregates*

As would be expected, whenever a control system comes into operation, the imposition of the corset generated a variety of reactions by the banking system and their customers aimed at offsetting or relieving the effects of the new legislation.

First, the corset induced some "onshore" disintermediation. One important form this took became known as the "bill leak". Banks would accept bills issued by customers and then sell these to nonbank holders. The bills, which did not appear as liabilities on the books of the banks, were similar to the certificates of deposit whose growth was being restricted by the legislation.

There are two questions to ask here. First, how significant was this leak? Second, given its scale, what did it imply about the meaning of the money aggregates as indicators?

During the first corset period (1974 to February 1975) bills held outside the banking system rose from £ 350 million to some £ 500 million. During the second corset period (end-1976 to August 1977) these bills increased from £ 320 million (to which they had dropped in the intervening period) to some £ 430 million. During the third corset (mid-1978 to June 1980) period the bills rose from a new low base of some £ 150 million to some £ 2,700 million. These again fell dramatically soon after the abolition of the corset.[6] It is evident, then, from the fluctuation in these bills that they bore a consistent relationship with the imposition and abolition of the corset.

What significance should be attached to these figures and what do they imply for the meaning of the money aggregates as indicators?

It is difficult to see the bill leak as a "complete" offset to the corset as if, in other words, those bills were the exact equivalent to the growth

[6] These figures are taken from the *Bank of England Quarterly Bulletin* (1982) p. 82. For difficulties in measuring this leak see COGHLAN (1979). It is also worth noting that the banks had an incentive to run down these bills and increase their eligible liabilities in anticipation of the corset.

of SM_3. The reason is that with banks restrained the growth of borrowing and lending outside the banking system requires some increase in interest rates and hence implies some restriction.

This is not to say, however, that they ought to be totally discounted. They represented in effect a form of "financial innovation" induced by the controls and so probably served to increase the interest elasticity of the demand for money. So while it would be illegitimate to treat the bill leak as the equivalent of sterling M_3, it nevertheless did constitute some leak.

One way of approaching this is to add the bill leak to SM_3 to see how it changes its rate of growth. This would provide an absolute upper limit to the offset, recognizing that in reality it would be less than this. In the first period SM_3 rose by some 10 per cent; with the bill leak the figure is roughly 10.5 per cent. In the second period the growth in SM_3 was some 1.5 per cent; with the bill leak this becomes 1.8 per cent. In the third period the growth of SM_3 was 32 per cent; with the bill leak the growth becomes some 37 per cent. Thus, the bill leak was "significant" only in the last period. During the operation of the corset, then, the bill leak would have understated both M_1 and M_3 as indicators.

Second, the corset, after the abolition of exchange controls in November 1979, also induced some "offshore" disintermediation. U.K. residents were now able to place sterling deposits in banks overseas. These then lent them on to U.K. residents, who had been denied loans by the operation of the corset. What happens here is that the ownership of a sterling deposit shifts from one U.K. resident to another, so, although SM_3 in unaffected, additional lending is generated.

It would seem that in the first half of 1980, after the abolition of exchange controls but before the removal of the corset, U.K. residents' Eurosterling deposits more than doubled to £ 2.7 million.[7] These fell sharply after the removal of the corset, suggesting some relationship with the corset.

If we treat these as having effects similar to those of the bill leak, then in the last period of the corset these would have, at most, added a further 2-2½ percentage points to the growth of SM_3. So again, the money aggregates would have been distorted downward.

[7] See *Midland Bank Review* (1981).

Third, the corset, again after the abolition of exchange controls, induced some offshore "pure intermediation" by the banking system. Now banks could borrow and lend in foreign currency to U.K. residents who in the absence of exchange controls could switch into sterling by selling the foreign currency to other U.K. residents. Thus, the ownership of a sterling deposit would change hands from one U.K. resident to another. So SM_3 would be unchanged but there would be more lending in sterling. Although precise figures are not available, it seems that foreign currency lending by the banks to the U.K. private sector also increased substantially in the first half of 1980 and then fell in the second half.[8] So again this would have understated the significance of the money aggregates.

Fourth, as a means of evading the corset the banks may have been able to induce their customers to increase their noninterest-bearing balances (e.g., by the offer of free banking services). A switch of this kind, to the extent it occurs, reduces the significance of M_1 as an indicator but leaves SM_3unchanged. However, the Bank of England has argued that there is "no evidence of this having occurred on any large scale". [9]

Fifth, and finally, in calculating the limits for eligible liabilities, banks could deduct monies lent to the discount houses, as long as these were not designated as a reserve asset.[10] If banks held excess reserves they would arrange to run these down by converting these from money at call, which was a reserve asset, to money not at call, which was not a reserve asset. In this way net eligible liabilities would fall.[11]

Banks did in fact hold excess reserves during the first two periods when the corset was in operation and for a while in the third period, so there was scope for "evasion" in this form although how much actually occurred is unknown. This form of evasion probably distorts M_1 more than SM_3 since it allows "room" for expansion of interest-bearing liabilities.

[8] See *Midland Bank Review* (1981).

[9] *Bank of England Quarterly Bulletin* (1982).

[10] Money lent to the discount houses was a reserve asset if it was on call and secured.

[11] The precise mechanisms here are not very clear. The *Bank of England Quarterly Bulletin* (1982) on page 79 says that "The banks would increase their nonreserve asset lending to discount houses and the funds could then be used by the houses to purchase commercial bills or other assets from the banks. In this way a fall in interest-bearing eligible liabilities could be arranged without falls in reserve assets in nonbank deposits with the banking sector or in lending to the nonbanks by the banking sector. In effect, lending to nonbanks could be shifted from the banks to the discount houses". In this case, as distinct from the other case in the text, liabilities and assets of the houses increase. The banks are in effect selling nonreserve assets to the discount houses and at the same time extending their lending to them.

3. *The effects of the removal of the corset in June 1980*

Because from mid-1979 the corset was producing substantial distortions to banking behavior and the money aggregates, its removal produced equally dramatic reversals. The basic analysis underlying the removal of the corset is somewhat similar to the analysis underlying the introduction of Competition and Credit Control (see again Table 1).

In the (banking) month of July alone sterling M_3 grew by 5¼ per cent while interest-bearing liabilities (IBEL) rose by some 14 per cent; at the same time the bill leak fell by £ 1,000 million. The growth of the key money aggregates in the second half of 1980 is shown in Table 4. The growth of both base money and M_1 slowed down (sharply in the last case); the growth of SM_3 and M_3, however, accelerated significantly while there was little change in the growth of private sector liquidity.

What appears to have happened is the following. There was a sharp fall in private sector holdings of money market instruments (principally in the form of bank bills). SM_3 grew most rapidly because of the very sharp increase in IBELs; the ratio of sight (interest-bearing) to total deposits fell (rose) while at the same time the SM_3/base money multiplier rose and the cash/deposit ratio fell sharply. As one would have expected, these developments almost exactly parallel the developments in 1972-73 after the banking system was first deregulated (Table 3).

What does all this imply for the money aggregates, as indicators? We concluded earlier that, while the corset was on, because of the disintermediation process, SM_3 tended to understate the thrust of the monetary sector. The removal of the corset reversed this. As a result of the reintermediation process, SM_3 now tended to overstate the thrust of the monetary sector. This view was in fact widely held and indeed allowed for at the time the corset was removed. At the same time M_1 was also significantly distorted. The shift into interest-bearing deposits sharply reduced the demand for M_1, so now M_1 understated the thrust of the monetary sector.[12]

[12] It is widely held that M_1 growth in 1980/81 is a better indicator of the thrust of the monetary sector than SM_3 growth. The reasoning seems to be based on the observed fact that inflation fell sharply in 1982, hence that there must have been some earlier slowing down in the growth of some money aggregate. We have argued that M_1, and indeed base money, are also distorted downwards. The fall in inflation may have more to do with non-monetary factors (e.g., until 1981 the rise in sterling, the fall in commodity prices in 1982, the restrictive fiscal policies and the world recession, the fall in interest rates and the effects of the dishoarding of labour on wage demands) than monetary factors.

TABLE 4

UNITED KINGDOM: MONETARY AGGREGATES
(In millions of pounds; end of period; amounts outstanding) [1]

End of Period		Monetary Base	Per cent Change[2]	M_1	Per cent Change[2]	Sterling M_3	Per cent Change[2]	M_3	Per cent Change[2]	Measures of Private Sector Liquidity			
										PSL_1	Per cent Change[2]	PSL_2	Per cent Change[2]
1975		6,914	10.8	17,483	18.6	37,595	6.5	40,573	7.6	39,406	...	66,695	...
1976		7,671	10.9	19,467	11.3	41,160	9.5	45,129	11.2	43,115	9.4	73,897	10.8
1977		8,961	16.8	23,639	21.5	45,290	10.0	49,565	9.8	46,715	8.3	82,479	11.6
1978		10,121	12.9	27,535	16.4	52,062	15.0	56,964	14.9	53,943	15.5	94,825	15.0
1979	1st qtr.	9,968	15.9	27,495	13.3	51,677	11.4	56,372	10.7	56,136	13.9	98,456	13.2
	2nd qtr.	10,240	12.6	27,892	12.6	54,248	12.7	59,370	11.3	58,550	16.8	101,947	14.8
	3rd qtr.	10,518	12.5	28,957	11.2	55,850	13.1	60,687	11.8	60,664	16.9	104,719	14.3
	4th qtr.	11,172	10.4	30,046	9.1	58,677	12.7	63,996	12.3	62,752	16.3	107,749	13.6
1980	1st qtr.	10,744	7.8	29,173	6.1	58,118	12.5	63,859	13.3	64,135	14.2	110,519	12.3
	2nd qtr.	11,101	8.4	29,743	6.6	62,459	15.1	68,272	15.0	67,698	15.6	114,730	12.5
	3rd qtr.	11,484	9.2	29,791	2.9	64,845	16.1	70,726	16.5	69,971	15.3	118,060	12.7
	4th qtr.	11,785	5.5	31,230	3.9	69,591	18.6	75,974	18.7	72,895	16.2	122,256	13.5
1981	1st qtr.	11,500	7.0	31,633	8.4	68,794	18.4	76,813	20.3	73,371	14.4	125,291	13.4
	2nd qtr.	11,711	5.5	32,787	10.2	73,165	17.1	83,011	21.6	76,472	13.0	129,995	13.3
	3rd qtr.	12,043	4.9	33,352	12.0	75,830	16.9	87,410	23.6	80,006	14.3	134,672	14.1
	4th qtr.[3]	12,222	3.7	32,446	7.6	75,841	13.5	86,966	19.7	79,095	11.5	133,987	11.5

Source: Bank of England Quarterly Bulletin.

[1] The monetary aggregates are unadjusted. The private sector liquidity aggregates are seasonally adjusted.

[2] Rate of change over same period in previous year.

[3] Data for this quarter are for banking month December rather than end of quarter, and percentage changes are over the corresponding month in 1980.

PSL_1 is the sum of sterling M_3, money market instruments (Treasury bills, bank bills, deposits with local authorities and finance houses) and certificates of tax deposits.

PSL_2 is the sum of sterling M_3, money market instruments, savings institution deposits and securities, certificates of tax deposits (adjusted for holdings by Building Societies).

IV. The Removal of Exchange Controls

The removal of exchange controls induced U.K. residents to increase their holdings of Eurosterling deposits and as well of foreign currency deposits. On the former, it is worth noting that since the abolition of exchange controls, the ratio of U.K. residents' Eurosterling deposits to domestic deposits rose from 1 per cent to 2 per cent. Eurostanding deposits are not included in either SM_3 or in M_3 so a significant increase in these holdings presumably distorts all money aggregates including M_1, SM_3 and M_3.

On the latter, Table 5 shows that, on a transactions basis, there was a significant increase in 1980/81 in foreign currency holdings. However, if we also take account of valuation effects resident holdings of foreign currency did not increase significantly until 1981.[13] M_3 includes foreign currency holdings valued in sterling, so it is sensitive to valuation changes. On this basis the removal of exchange controls may have distorted M_1 and SM_3 but possibly not until 1981.

TABLE 5

CHANGES IN U.K. RESIDENTS' DEPOSITS IN OTHER CURRENCIES

(In millions of pounds)

Year	Transactions basis (excluding valuation changes)	As per cent of M_3 (end-previous year)	Resident holdings of foreign currency as per cent of M_3 (end-year)
1977	+ 778	1.7	0.8
1978	+ 910	1.8	0.9
1979	+ 802	1.4	0.9
1980	+ 1,515	2.4	0.9
1981	+ 2,609	3.4	1.2[1]

[1] End-third quarter revisions to data in fourth quarter.
Source: Bank of England Quarterly Bulletin.

[13] In 1980 the rise in sterling held down the value of foreign currency holdings.

V. Some Tentative Conclusions

The principal conclusions appear to be the following:

1. Competition and Credit Control, introduced in September 1971, had significant effects on the monetary aggregates as signals of the thrust of the monetary sector. These effects, however, were very complex, sometimes distorting one aggregate, sometimes distorting another. Our own conclusion was that it almost certainly distorted M_1 more than SM_3, so the latter was a better, albeit still misleading, indicator of the monetary thrust.

2. The corset was introduced at the end of 1973, removed early in 1975, reintroduced at the end of 1976, then removed in mid-1977, until mid-1978 when it was reintroduced. We have argued that over period (from end-1973 to mid-1978), while certain distortions may have occurred, these would have been very small. This is not surprising considering that in the first two periods when the corset was in use there were only minimal penalties actually paid and most of the time banks were below their allowable limits.

However, during the third period (particularly from mid-1979) banks were running up against their limits and indeed paying substantial penalties for infringement, so, not surprisingly, the corset did then begin to bite. We have argued that the operation of the corset acted to understate SM_3 as an indicator. This effect was reinforced over the period when the corset was in force and exchange controls removed. By contrast, after the corset was removed SM_3 tended to overstate SM_3 or an indicator.

3. The important point that needs to be made is that whenever a particular monetary aggregate is made scarce by a system of controls, the financial system will tend to adjust, in part at least, by creating substitutes (Goodhart's Law). This in turn will weaken the significance of the money aggregate both as an indicator and as a target. What happened in the United Kingdom as a consequence of the corset would most likely have also happened if instead of controlling SM_3 by the corset some other form of control (e.g., base money control) had been used.

4. A most striking feature of the U.K. is the divergences which appear in the growth in the money aggregate (Table 2). This is particularly

noticeable for M_1 and SM_3. With the possible exception of 1979, the two money aggregates flash conflicting signals in every other year. In many of the years the two money aggregates actually moved in opposite directions. Some of these conflicts, as we have seen, could be explained in terms of changes in banking legislation but by no means all. Indeed, the discrepancies persisted in years (1974-77) when legislation was only having a minimal effect; moreover, they continued (in 1981) even after all controls were abandoned.

5. It is worth noting that the money multiplier appears to be more stable for M_1 than for SM_3 (Table 3). It is also particularly noteworthy in our context that, in 1972-73 and again in 1980 when the money multipliers for SM_3 rose very sharply, the multiplier for M_1 remained relatively stable. The reason for the latter is that, in those years, the fall in the bank cash deposit ratio and as well in the currency deposit ratio was offset by the sharp fall in the sight deposit to total deposit ratio (see Equations 5 and 6 in Table 3).

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