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C Goodhart Esq
Bank of England
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9 July 1981

Dear Charles,

STABILITY OF M1 EQUATIONS

Following your strictures about M1 equations, we have been taking a look at the stability of our own new M1 equations. As you know, there are two versions, both of which include wealth (gross financial) as well as income (or TFE): the Norman Cumming equation, which is the simpler of the two, has been programmed on the model and was used for the last forecast. I must admit I was personally a little sceptical about including wealth, but it does seem to help: and I am somewhat comforted by the fact that both the short and long run wealth elasticities are lower than those we found for £M3 (for the Cumming equation, about 0.3 after a year, and only marginally more in the long run). Both equations are described in full in the forthcoming Grice/Bennett TES Working Paper.

As you will see from the attached note by Adam Bennett, Norman's equation does seem to be reasonably stable. It missed the slowdown in M1 in the second half of 1980 quite badly, but it came back on track in the first quarter. The picture for 1980/81 may look a bit different when we have more up to date wealth data. Adam's equation has not fared too well since the end of 1978, however, which is one reason why we rejected it in favour of Norman's simpler formulation (the other reason being the rather curious simulative properties imparted by the disaggregation of TFE).

Given your views on our £M3 equation, I imagine you will have some reservations about this approach to M1. Certainly it raises the same problems about forecasting wealth. Without claiming too much, however, perhaps it suggests that the situation on M1 is not entirely hopeless.

C Goodhart Esq   9 July 1981

Copies of this letter go to Alan Walters and Andrew Britton.

Best wishes

Rachel

RACHEL LOMAX

cc: Mr Middleton
Mr Monck
Mr Riley
Mr P Davies
Mr Grice
Mr Shields
Mr Bennett

[illegible] TIONS

[illegible] to report on the structural stability of M1 equations [illegible] by [illegible] myself.

[illegible] (NC) EQUATION

[illegible] equation was developed in response to the [illegible] of the [illegible] equations describing the components of M1. Originally the NC [illegible] only real personal disposable income as the principal regressor (as [illegible] of [illegible], interest rates). But in view of the successful use of wealth in [illegible] the NC equation ended up by including both income and wealth. The NC equation currently programmed on the model was estimated up to 1980 Q2 but used [illegible] for 1979 Q1 to 1980 Q2 which is highly provisional. Accordingly, the [illegible] tests that I have carried out involve estimation only up to 1978. The [illegible] is reported in table 1. Here is shown estimation from 1965 Q1 - 1978 Q4, and in addition estimation over two subperiods. The equation differs from the model version both in the different estimation period and also in respect of one restriction made to the model version to smooth the rather jagged response to wealth in the unrestricted version. Neither of these differences is likely to matter very much as far as the tests are concerned. As can be seen from the residuals from the bottom of table 3 they are very small until 1980 Q3, which is outside the estimation period of the model equation. Thus an equation which leaves out 1979 Q1 to 1980 Q2 is not likely to differ greatly from one which includes this period.

Table 3 reports the usual test statistics. First of all, the NC equation has a respectable standard error of 1.15% (respectable from the stand point of most other M1 equations we know of). NC passes the Chow test for parameter stability. It passes the Dhrymes test for structural stability. This is a version of the post sample forecasting test. The NC equation also passes the Lagrange Multiplier test for serial correlation of the error. Finally, the residuals from the NC equation as programmed on the model, are impressively tiny for the period 1979 Q1 - 1980 Q2. 1980 Q3 and Q4, on the other hand, are very large and negative. By 1981 Q4, however, the equation looks like it is back on track. The predicted values for 1979 and the first half of 1980 are, of course, as reliable as the provisional wealth data used for this period. For the second half of 1980 and first of 1981 they are conditional on the wealth [illegible] of the model. In a sense these latter residuals are the true [illegible] of the equation since they show up the dependence of the equation on the [illegible] wealth.

[illegible] (AB) equation

[illegible] equation was developed in line with the other [illegible] by [illegible] and myself on the relationship between wealth and the demand for money. [illegible] wealth as the main demand variable, but includes [illegible] divided into its private sector components, [illegible], as well as personal disposable income (see Table 2). The [illegible] is the standard error of 0.7[illegible]. [illegible], it passes all the usual tests (see Table 3). [illegible] up to 1978, [illegible] of this equation [illegible] from that 48 show that the equation [illegible] in 1979 and 1980. The feeling is that this equation has been "overfitted" to the sample period.

Conclusion

The NC equation in particular suggests that a stable demand function for M1 does [illegible] exist, notwithstanding the problems with the last two quarters of 1980. The AB equation, on the other hand, whilst being stable within its own estimation period look as if it may break down in the future. But the AB equation also indicates that the determination of M1 is more complex than the NC equation would have us believe.

A Bennett

A BENNETT
FEU
8 July 1981

TABLE II

NO. EQUATION	k	[illegible]	$\ln\left[\frac{M1_{-1}}{M1_{-2}}\right]$	$\ln\left[\frac{P}{P_{-4}}\right]$	$\ln YPDY$	$\ln\left[\frac{YPDY}{YPDY_{-5}}\right]$	$\ln GW$	$\ln\left[\frac{GW}{GW_{-5}}\right]$	$\ln\left[\frac{GW_{-1}}{GW_{-2}}\right]$	$\ln\left[\frac{GW_{-3}}{GW_{-4}}\right]$	RSHORT	TIME
[illegible] (4)	[illegible] ([illegible])	[illegible] ([illegible])	−0.092 (1.2)	0.127 (1.1)	0.140 (1.4)	0.250 (2.9)	0.163 (1.9)	0.173 (2.4)	−0.209 (1.4)	−0.455 (3.2)	−0.0002 ([illegible])	[illegible] (1.2)
	SE 1.45 %											
1965 (1) − 1971 (4)	[illegible] (1.2)	0.286 ([illegible])	−0.013 (0.06)	0.403 (0.9)	−0.387 (1.0)	0.524 (2.0)	0.361 (1.0)	0.149 (0.5)	−0.227 (0.6)	−0.044 ([illegible])	−0.0090 (1.7)	[illegible] (0.2)
	SE [illegible] %											
1972 (1) − 1973 (4)	−[illegible] ([illegible])	[illegible] ([illegible])	−0.170 (2.6)	0.148 (0.9)	0.030 (0.6)	0.304 (3.5)	0.245 (2.0)	0.083 (1.0)	0.132 (0.8)	−0.648 (5.5)	−0.0063 (7.9)	[illegible] ([illegible])
	SE [illegible] %											

TABLE 1

EQUATION	$\ln[\cdot]_{-1}$	$\ln[\cdot]$	$\ln[\cdot]_{-1}$	$\ln[\cdot/P]_{-4}$	$\ln[Gwd/P]_{-5}$	$\ln[Gwd/\Delta P]_{-6}$	$\ln[C/C]_{-1}$	$\ln[C_{-1}/C_{-3}]$	$\ln[I/I_{-2}]$	$\ln S_{-2}$	$\ln S_{-3}$	$\ln S_{-4}$	$\ln[E_{-1}/E_{-6}]$	$\ln[E_{-2}/E_{-6}]$	$\ln[E_{-3}/E_{-6}]$	$\ln[E_{-5}/E_{-6}]$	$\ln[YPDY/YPDY_{-}]$	$\ln[P_{-5}/P_{-6}]$	$RSTR_{-1}$	h
[illegible] – 1978 (4)	0.531	0.443	-0.500	0.524	-1.118	0.514	0.185	-0.252	0.600	0.478	-0.692	0.439	0.225	0.086	-0.661	0.476	0.449	-0.632	-0.012	0.776
	(0.3)	(7.0)	(1.4)	(3.4)	(6.2)	(6.6)	(3.2)	(6.5)	(4.3)	(4.2)	(5.6)	(4.2)	(2.0)	(0.8)	(5.8)	(1.6)	(3.7)	(4.6)	(4.5)	(2.5)
	SE 0.754 %																			
[illegible] – 1970 (4)	0.514	0.749	-0.604	0.741	-1.129	0.610	0.126	-0.144	0.120	0.721	-0.669	0.399	0.312	-0.148	-0.454	0.005	0.188	0.781	-0.011	1.305
	(3.2)	(2.6)	(1.7)	(1.8)	(3.0)	(1.8)	(1.3)	(2.4)	(0.4)	(2.5)	(2.1)	(1.3)	(1.4)	(0.7)	(2.2)	(0.02)	(1.3)	(1.8)	(2.5)	(0.3)
	SE 0.924 %																			
[illegible] – 1978 (4)	0.30	0.544	-0.234	0.441	-0.126	0.541	0.143	0.254	0.754	0.372	-0.729	0.309	0.062	0.419	-0.875	0.148	0.258	-0.627	-0.013	0.651
	(2.1)	(4.0)	(1.0)	(1.7)	(3.1)	(3.5)	(2.3)	(5.1)	(4.7)	(2.1)	(4.3)	(1.6)	(0.4)	(2.3)	(4.2)	(0.8)	(3.4)	(2.4)	(4.1)	(1.7)
	SE 0.755 %																			

TABLE 5 TEST STATISTICS

	NC EQUATION		AB EQUATION
STANDARD ERROR			
	1.15 %		0.76 %
[illegible] PARAMETER STABILITY (F TEST)			
	1.29 (2.08)*		1.07 (2.19)*
[illegible] TEST FOR STRUCTURAL STABILITY (F TEST)			
Equation estimated to			
73 Q4	0.52 (2.03)*		1.22 (2.19)*
74 Q4	0.53 (2.03)		0.72 (2.15)
75 Q4	0.63 (2.07)		0.62 (2.15)
76 Q4	0.49 (2.22)		0.30 (2.27)
77 Q4	0.73 (2.61)		0.47 (2.65)
LAGRANGE MULTIPLIER TEST FOR SERIAL CORRELATION OF THE ERR			
LM (1)	0.35 (3.84) *		2.49 (3.84)*
LM (2)	3.25 (5.99)		3.36 (5.99)
LM (3)	3.97 (7.81)		6.25 (7.81)
LM (4)	4.01 (9.49)		6.72 (9.49)
RESIDUALS FROM WHIT 48 (£mn) [% in parentheses]			
1979 Q1	92 (0.33)		-101 (0.37)
Q2	-117 (0.41)		250 (0.89)
Q3	18 (0.06)		-765 (2.14)
Q4	1 (0.00)		-18 (0.06)
1980 Q1	-145 (0.49)		-1477 (5.03)
Q2	-80 (0.27)		105 (0.35)
Q3	-1349 (4.53)		-1056 (3.55)
Q4	-789 (2.58)		-169 (0.55)
1981 Q1	-105 (0.33)		422 (1.33)

* critical values in parentheses

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NOTE OF A MEETING IN THE CHANCELLOR OF THE EXCHEQUER'S ROOM, HM TREASURY ON THURSDAY 16 JULY 1981 AT 2.30 p.m.

Present

Chancellor of the Exchequer (in the chair)
Chief Secretary
Financial Secretary
Sir Douglas Wass
Mr Burns
Sir Kenneth Couzens
Mr Middleton
Mr Britton
Mr Monck
Mrs Lomax
Mr H J Davies
Mr Ridley

MONETARY CONTROL

The meeting was held to consider the papers prepared for the Prime Minister's seminar on 31 July.

2. It was noted that the Prime Minister was still thinking in terms of an early move to Monetary Base Control (MBC). She thought of MBC as a tap which could readily be adjusted by the authorities; and she interpreted what Dr Zijlstra had said to her as confirming that it was possible through MBC to have a satisfactory measure of control over the money supply while maintaining a degree of discretion over the level of interest rates. Mr Walters, by contrast, appeared to accept that an early move to MBC was ruled out; he still wanted Mo ultimately to be the only determinant of changes in interest rates, but for the time being he wanted to move to a system under which interest rates were set so as to achieve an M1 objective over a period of 6-9 months.

3. It was generally recognised that the Prime Minister's concept of MBC related to the narrow base (bankers' balances), whose significance was uncertain; that this system of control would

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have to be directed at an M2 target (for which statistics were as yet not available); and that this option had been rejected - at least for the time being - in the discussions leading up to the Chancellor's statement in November 1980. Such a system would be consistent neither with the November statement, nor with the further account of the proposed evolution of monetary managed given in the 1981 Budget Speech. The meeting agreed that it would be better not to confront this issue directly in the material presented to the seminar.

4. Nor was precise short run control of the wide monetary base (i.e. including notes and wins) feasible because of fluctuations in the demand for cash by the general public. Any attempt to achieve such control would be likely to result in sharply fluctuating interest rates. In any case the strongest advocates of MBC (e.g. Professors Brunner and Meltzer) were not advocating such a system; they recognised that it would always be necessary to adjust their sights by reference to the current situation; Meltzer had accepted that it would have been disastrous to have pursued a steady path for Mo during the post 1929 recession. It would be helpful if some way could be found of directing the Prime Minister's attention to Dr Zijlstra's remarks to the BIS annual meeting about monetary control and exchange rates, which gave a much clearer indication of the approach he was recommending to her.

5. In these circumstances there was general agreement that the best course was to press ahead with the new arrangements for money market operations, which would allow interest rates to be determined within a band set from time to time by the authorities but not announced. It would be for consideration at what point MLR should be suspended. It was noted that a decision would be required how, under this system, interest rates would in practice be determined.

6. Two possibilities were considered:

(i) to set interest rates by reference to a short-term target for M1; and

(ii) to set interest rates by reference £m3 while taking into account a variety of factors, which could include both movements in the narrow aggregates and the path of the exchange rate.

It was accepted that course (i) would hardly be consistent with the present stance of policy, with the emphasis on a £m3 target in the context of the MTFS. Maintenance of a £m3 target for the medium term, combined with a target for the movement of M1 for the current year would not resolve the problem; there would be a serious risk that the targets could not be reconciled with each other. The Prime Minister had in any case indicated her wish to retain £m3 as the primary target.

7. However, £m3 had not in practice proved a satisfactory bench mark for the purpose of determining interest rates. In part this reflected the fact that it was more influenced by the structure of relative interest rates than by their absolute level; and it was not impossible that it might serve as a more reliable guide in circumstances less extreme than those of 1980 resulting from the abolition of the corset and the exceptional financial pressure on the company sector. It was far from certain that any other aggregate would be better, once it had to bear the weight of being the operational target. It was an illusion to suppose that interest rates could ever be left to be set by some form of automatic pilot.

8. It was agreed, therefore, that the present practice (in effect course (ii) in paragraph 6 above) of fixing interest rates by reference to £3 together with a variety of factors, including the narrow monetary aggregates and the exchange rate, should be maintained. Within this framework the greater role for the markets should be signalled by the suspension of MLR at the same time the new arrangements came into force on 20 August.

The question was raised whether the authorities would then have sufficient scope for securing desired changes in the level of interest rates in response, for example, to sharp changes in sentiment in the foreign exchange markets. It was noted that there could be circumstances in which the authorities were unable to force changes in market rates purely through direct market intervention: would it then matter if there were no longer a posted MLR? Further discussion suggested that there need be no serious difficulty; it would still be open to the authorities to announce their intention to enforce an upward movement in interest rates as soon as they were in a position to do this, and this would be enough.

Conclusion

10. The Chancellor asked Mr Middleton to revise the covering paper, which would serve as an annotated agenda for the Seminar, to take account of the points made in the discussion. The next step would be a preparatory meeting with the Governor on his return from Ottawa, before the papers were sent to the Prime Minister on 24 July.

R.I.T.,
for,

(A.J. WIGGINS)
20 July 1981

Distribution

Those present

Mr Turnbull

21.7.81.

Chancellor of the Exchequer

cc Chief Secretary
Financial Secretary
Minister of State (L)
Minister of State (C)
Sir Douglas Wass
Mr Ryrie
Mr Burns
Sir Kenneth Couzens
Mr Hancock
Mr Britton
Mr Monck
Mr Kemp
Mrs Lomax
Mr Turnbull
Mr H Davies
Mr Lavelle
Mr Peretz
Mr Riley
Mr Grice
Mr Shields
Mr Bennett
Mr Ridley

MONETARY BASE CONTROL

1. At your meeting last week to discuss the papers for the Prime Minister's seminar, I said that we had prepared a separate note setting out the arguments for and against monetary base control. The note has been discussed with the Bank (who are in broad agreement with it), but not with Mr Walters. There seemed to be no point in raising potentially contentious issues with him when he had agreed that an immediate move to MBC, in any of the forms we discussed last autumn, was not a starter. For the same reason I would not recommend sending the note forward for the seminar.

2. The note, which has been prepared by Mrs Lomax, will however serve as briefing for the seminar. And it has been drafted in such a way that it could be tabled if absolutely necessary.

3. If I may summarise the key points:

a. A mandatory monetary base system, involving a new compulsory cash ratio and close week by week (or month by month) control of the supply of base money to the banks is not an immediate option:

i. It cannot be used to control £M3 without causing disintermediation overseas. The new M2 series, which may reduce this risk, is not yet ready and it will be a long time before we can tell whether it is a suitable target aggregate.

ii. Even then it will be difficult to ensure that such a scheme did not operate to a large extent by diverting financial flows into other channels.

b. Non mandatory MBC, in the sense of a quantity rule for the Bank's money market operations, to achieve close short term control of the narrow base (bankers' balances at the Bank of England) would be possible, but:

i. we have no reason to suppose there is a close link between the narrow base and the wide monetary aggregates. So we would probably have to abandon the annual target for £M3.

ii. There is no guarantee that our control over monetary conditions in general would be improved. There is little we can tell about the demand for narrow base from past experience. The base might be very unstable, in which case it would be a very poor fulcrum for influencing monetary conditions.

iii. It could involve very volatile short term interest rates which could destabilise the exchange rate and have far reaching implications for financial institutions.

c. More generally, controlling the monetary base as the sole means of controlling inflation would be regarded as a very narrow approach. It has not many supporters. A move to a fully fledged regime would inevitably be regarded as an extreme move, and a step away from the position you took in the Budget which was designed to widen the range of factors taken into account.

d. The argument has therefore become one about whether to control the wide base (including notes and coins held by the public) over a longish period of 6-9 months, using broadly the same money market techniques as we now use to control £M3 -

ie with discretionary changes in interest rates.

e. There would be no need for changes in institutions or techniques if we did this.

f. But it is tantamount to treating the monetary base as another target aggregate, probably as an alternative to £M3, at least over periods as short as a year.

g. Work summarised in the paper on the narrow aggregates for the Prime Minister's seminar suggests that the base has some serious drawbacks when looked at from this point of view:

i. It is in many ways inferior to other narrow aggregates such as M1. Only the currency component of the base appears to show any systematic relationship to money incomes, or prices, but since this is entirely demand determined, it provides no firm evidence of a causal link.

ii. The relationship of the wide base to interest rates is not well determined and looks to be pretty unstable; the greater the instability of the interest rate response the more far reaching the implications for base rates and mortgage rates.

iii. It is certainly not possible to control £M3 or any other wide aggregate simply by acting on the wide base.

h. This certainly does not rule out taking the base into account among the other factors which determine interest rates.

4. Whatever Zjilstra may have said, MBC in any of its many guises, is definitely not a way of combining quantitative control over cash with discretionary control over interest rates. The two are quite incompatible.

5. I have more sympathy than most with monetary base control. But there are great risks in making the change. We could perhaps have taken these risks two years ago; but I do not see how it could be wise for the Government to take them now. The pain -

- if there is, to be any - in terms of unpredictable interest rate movements, would be immediate and the benefits distant. If we get into another monetary crisis, the balance of argument might change, but otherwise the risks seem disproportionate to the rewards.

pp E A Clark

P E MIDDLETON
21 July 1981

Enc