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ANNUAL MONETARY REVIEW
SUPPLEMENT 1

HOW TIGHT WAS MONETARY POLICY IN 1980?

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SUMMARY : THE PROBLEM

NARROW MEASURES OF 'MONEY' HAVE GROWN MUCH MORE SLOWLY THAN BROAD MEASURES OF MONEY IN THE UNITED KINGDOM DURING 1980. AT THE SAME TIME INTEREST RATES HAVE BEEN HIGH AND THE POUND STRONG. A LARGE PART OF NATIONAL INCOME HAS BEEN SAVED RATHER THAN SPENT, AND REAL NATIONAL PRODUCT HAS FALLEN. THIS CONJUNCTION OF EVENTS RAISES FOUR VITAL QUESTIONS

HAS MONETARY POLICY BEEN TIGHT, RATHER THAN EASY?

HAVE THE AUTHORITIES BEEN WRONG TO TARGET THE BROAD MONETARY AGGREGATE, STERLING M3?

ARE THE DIFFERENCES BETWEEN THE GROWTH RATES OF ALTERNATIVE TYPES OF MONEY DUE LARGELY TO THE CHANGE IN THE LEVEL OF PRIVATE SAVINGS?

HAS THIS MONETARY SQUEEZE CAUSED THE RECESSION?

FROM THE TEXT OF THE RECENT FINANCIAL STATEMENT WHICH ACCOMPANIED THE MARCH 10 BUDGET, IT IS CLEAR THAT THE GOVERNMENT WOULD ANSWER ALL THESE QUESTIONS IN THE AFFIRMATIVE. THIS ARGUMENT HAS ALSO FOUND FAVOUR WITH INFLUENTIAL COMMENTATORS OUTSIDE GOVERNMENT, AND WITH THE PRESS.

IN THIS PAPER, WE SHOW THIS INTERPRETATION OF EVENTS TO BE COMPLETELY WITHOUT FOUNDATION.

MONETARY POLICY HAS IN FACT BEEN EASY, AND IS POTENTIALLY INFLATIONARY. STERLING M3 IS STILL THE BEST MEASURE OF MONEY. THE SCALE OF SAVINGS DOES NOT TEND TO DRIVE M1 AND M3 GROWTH RATES APART. AND THE RECESSION HAS OCCURED NOT BECAUSE OF A TIGHT MONETARY POLICY, BUT IN SPITE OF A LAX MONETARY POLICY.

SUMMARY: THE ARGUMENT

OUR ARGUMENT STARTS WITH A REVIEW OF RECENT DEVELOPMENTS IN THE REAL AND MONETARY ECONOMY.

WE THEN CONSIDER IN PRINCIPLE WHETHER SOME MONETARY AGGREGATE SHOULD BE PREFERRED TO THE INTEREST RATE OR EXCHANGE RATE AS AN INDEX OF THE TIGHTNESS OF MONETARY POLICY.

DATA ON UNITED KINGDOM EXPERIENCE OVER THE PAST FIFTEEN YEARS IS THEN USED TO TEST STATISTICALLY TWO KEY PROPOSITIONS. FIRST, DOES SAVINGS BEHAVIOUR CONTRIBUTE ANYTHING TO THE EXPLANATION OF DIVERGENCES BETWEEN NARROW AND BROAD MONEY GROWTH ; OR CAN THESE BE WHOLLY EXPLAINED BY INTEREST RATE MOVEMENTS? SECOND, WHICH MONETARY AGGREGATE GIVES THE BEST EARLY-WARNING OF INFLATION ; AND DOES IT MATTER FOR INFLATION WHETHER MONEY GROWTH IS PRIMARILY DUE TO THE ACCUMULATION OF LIQUID FORMS OF SAVINGS, RATHER THAN THE GROWTH OF TRANSACTIONS BALANCES ?

LOGIC AND EXPERIENCE SUPPORT THE FOLLOWING CONCLUSIONS :

- IT IS WRONG TO JUDGE THE TIGHTNESS OF MONETARY POLICY BY LOOKING AT INTEREST RATES OR EXCHANGE RATES. SOME MONETARY AGGREGATE MUST BE USED.
- NARROW AND BROAD MEASURES OF MONEY HAVE IN THE PAST GROWN AT DIFFERENT RATES FROM YEAR TO YEAR PRIMARILY BECAUSE OF THE BEHAVIOUR OF INTEREST RATES. IN 1980, STERLING M3 GREW FASTER THAN M1 PRIMARILY BECAUSE INTEREST RATES WERE HIGH, AND PARTLY ALSO BECAUSE OF THE ENDING OF THE 'CORSET' CONTROL SCHEME. THE BEHAVIOUR OF PRIVATE SAVINGS DID NOT GIVE ANY ADDITIONAL BOOST TO STERLING M3 GROWTH.

- IN CHOOSING BETWEEN NARROW AND BROAD AGGREGATES AS POLICY TARGETS; THE RELEVANT CRITERION IS - WHICH CAUSES INFLATION? ON THIS CRITERION, OUR EXPERIENCES OVER THE PAST FIFTEEN YEARS SHOW STERLING M3 TO BE A MORE SUITABLE TARGET THAN, SAY, M1.
- VARIATIONS IN SAVINGS BEHAVIOUR DO NOT AFFECT THE WAY MONEY GROWTH FEEDS INTO SUBSEQUENT INFLATION.

SUMMARY: POLICY IMPLICATIONS

THESE FINDINGS HAVE STRONG IMPLICATIONS FOR THE CONDUCT OF MONETARY POLICY :

- THE TREASURY SHOULD NOT BE TEMPTED TO USE M1 RATHER THAN STERLING M3 AS AN INTERMEDIATE POLICY TARGET.
- THE TREASURY SHOULD NOT SET TARGETS FOR TWO OR MORE MONETARY AGGREGATES AT THE SAME TIME. THESE TARGETS WILL BE COMPATIBLE ONLY BY CHANCE, AND CANNOT BE MET IF RELATIVE INTEREST RATES ARE TO BE ALLOWED TO MOVE FREELY.
- THIS CHOICE OF STERLING M3 AS AN INTERMEDIATE TARGET DOES NOT PREJUDICE THE CHOICE BETWEEN INTEREST RATES AND THE MONETARY BASE AS ^{THE} DAY-TO-DAY OPERATING TARGET WHICH THE TREASURY SHOULD SET FOR THE BANK OF ENGLAND. WE HAVE ARGUED THE CASE FOR BASE CONTROL ELSEWHERE.
- WHATEVER CONTROL DEVICE IS USED BY THE BANK, IT SHOULD NOT - LIKE THE CORSET - DISTORT THE MEASUREMENT OF THE INTERMEDIATE TARGET WITHOUT CHANGING UNDERLYING GROWTH IN THAT TYPE OF MONEY. INFLATION OVER THE PAST FIFTEEN YEARS IS MORE CLOSELY ASSOCIATED WITH A BROAD MONEY STOCK MEASURE WHICH IS NOT AFFECTED BY SUCH DISTORTIONS, THAN IT IS WITH THE STERLING M3 FIGURES OFFICIALLY RECORDED.

SECTION I THE ECONOMIC BACKGROUND

THE MAJOR INDICATORS OF REAL GROWTH AND INFLATION IN THE UNITED KINGDOM IN THE PERIOD 1978-80 ARE SUMMARISED IN TABLE 1. SINCE THE MIDDLE OF 1979, THE REAL PERFORMANCE OF THE ECONOMY HAS CLEARLY DETERIORATED, AND AN OBVIOUS SCAPEGOAT FOR THIS RECESSION IS THE AVOWEDLY 'MONETARIST' POLICY OF THE THATCHER GOVERNMENT WHICH CAME TO POWER IN MAY 1979. INDEED, MANY MONETARIST GURUS SUCH AS PROFESSOR HAYEK HAVE ENCOURAGED THE PUBLIC TO BELIEVE THAT OUR CURRENT TRAVAIL IS A PRICE WHICH MUST BE PAID TO REDUCE INFLATION. THIS THEME HAS BEEN TAKEN UP BY THE PRIME MINISTER HERSELF.

TABLE 1

TABLE 1 THE UK IN RECESSION

INDICATOR	GROWTH THROUGH		
	1978	1979	1980
THE 'REAL' ECONOMY			
GROSS DOMESTIC PRODUCT	3.0	1.0	-2.5
MANUFACTURING PRODUCTION	0.7	0.8	-14.2
UNEMPLOYMENT RATE	5.5	5.2	8.7
THE 'NOMINAL' ECONOMY			
RETAIL PRICES	8.1	17.2	15.2
INTEREST RATES	12.4	17.1	14.8
EXCHANGE RATE	- 1.8	9.7	11.1

SOURCE : CSO ECONOMIC TRENDS

BUT HAS THERE BEEN A MONETARY SQUEEZE AT ALL? DIFFERENT DEFINITIONS OF MONEY GIVE DIFFERENT ANSWERS. AS TABLE 2 SHOWS, NARROW MONETARY AGGREGATES SUCH AS THE MONETARY BASE AND M1 HAVE GROWN VERY SLOWLY INDEED. OTHER, VERY BROAD, MEASURES OF PRIVATE SECTOR LIQUIDITY SUCH AS PSL1, AND PSL2 HAVE GROWN MUCH FASTER; AND THE GOVERNMENT'S OWN CHOSEN MEASURE, STERLING M3 HAS GROWN FASTEST OF ALL. THROUGH 1980, STERLING M3 GREW BY 20 PER CENT, AS AGAINST A TARGET OF 7-11 PER CENT. ON THIS DEFINITION OF MONEY, POLICY HAS BEEN EASY, NOT TIGHT; THE GOVERNMENT HAS NOT BEEN FOLLOWING MONETARIST POLICIES; AND THE RECESSION HAS OCCURRED, NOT BECAUSE OF MONETARY POLICY, BUT IN SPITE OF IT.

TABLE 2 WHICH MONEY SUPPLY?

MONEY SUPPLY MEASURE	GROWTH THROUGH		
	1978	1979	1980
M0	15.2	9.7	5.3
M1	16.6	9.0	5.8
STERLING M3	15.0	12.6	19.6
PSL1	15.6	16.8	16.4
PSL2	15.1	13.7	15.7

SOURCE : CSO FINANCIAL STATISTICS

THE REACTION OF MANY MONETARISTS TO THIS CONUNDRUM IS TO REJECT STERLING M3 AS A RELIABLE INDICATOR OF MONETARY CONDITIONS. PROFESSOR WALTERS, THE PRIME MINISTERS PERSONAL ECONOMIC ADVISOR, HAS ARGUED THAT THE HIGH LEVEL OF THE STERLING EXCHANGE RATE AND THE HIGH LEVEL OF INTEREST RATES MEAN MONEY MUST BE TIGHT, SO MONETARY POLICY SHOULD BE DIRECTED AT CONTROLLING NARROW DEFINITIONS OF MONEY. THIS IDEA HAS FOUND FAVOUR WITH THE CHANCELLOR OF THE EXCHEQUER. THE RECENT FINANCIAL STATEMENT AND BUDGET REPORT 1981-2 STATES

'THE HIGH EXCHANGE RATE AND HIGH REAL INTEREST RATES HAVE ENSURED MONETARY CONDITIONS REMAINED TIGHT AND THAT PROGRESS IN REDUCING INFLATION IS MAINTAINED' (P.16, PARA.10)

AND FURTHER THAT

'SOME OF THE FACTORS WHICH HAVE BEEN IDENTIFIED AS CONTRIBUTING TO THE RAPID GROWTH OF £M3 IN 1980-81 MEAN THAT IT SHOULD NOT HAVE THE IMPLICATIONS FOR FUTURE INFLATION WHICH GENERALLY FOLLOW AN INCREASE IN MONEY SUPPLY' (IBID).

A SIMILAR SUGGESTION HAS BEEN MADE, ON SLIGHTLY DIFFERENT GROUNDS, BY PROFESSOR MELTZER IN HIS PAPER, TESTS OF INFLATION THEORIES FROM THE BRITISH LABORATORY. BOTH THE OFFICIAL VIEW OF THE RELATIVELY FAST STERLING M3 GROWTH, AND THE MELTZER VIEW, ASCRIBE IT TO A PERMANENT ONCE-OFF RISE IN THE STOCK OF PRIVATE SECTOR LIQUID ASSETS.

SPECIFICALLY, THE FINANCIAL STATEMENT ARGUMENT IS THAT IN 1979 THE PRIVATE SECTOR WAS CONFRONTED WITH A RATE OF INFLATION HIGHER THAN IT EXPECTED - DUE, SAY, TO THE VAT INDUCED PRICE RISE, AND THE OIL PRICE RISE TOWARDS THE END OF THAT YEAR. AS A RESULT IT ENTERED 1980 WITH STOCKS OF LIQUID ASSETS WHICH WERE, IN TERMS OF THEIR REAL PURCHASING POWER, LOWER THAN DESIRED. A LARGE PART OF THE INCOMES EARNED BY INDIVIDUALS AND COMPANIES IN THE PRIVATE SECTOR WAS THEREFORE, CHANNLED INTO FORMS OF SAVING - DEPOSIT ACCOUNTS, BUILDING SOCIETIES

AND THE LIKE. BY THE END OF 1980, THIS ADJUSTMENT WAS COMPLETE. THE MELTZER ARGUMENT IS THAT IN 1979 TAXES ON CONSUMPTION OF GOODS WERE RAISED RELATIVE TO TAXES ON SAVING, THROUGH THE INCREASE IN VAT AND THE FALL IN INCOME TAXATION. A RATIONAL RESPONSE, HE ARGUES IS TO HOLD MORE WEALTH IN THE FORM OF REAL SAVINGS AND LESS AS CONSUMPTION GOODS. SO IN 1980 THE RATIO OF SAVINGS TO INCOME ROSE AS INDIVIDUALS AND COMPANIES ADJUSTED THE PATTERN OF THEIR ASSET HOLDINGS.

BOTH ARGUMENTS ARE CONSISTENT WITH THE OBSERVED RISE IN THE PERSONAL SECTOR SAVINGS RATIO FROM 13 PER CENT EARLY IN 1979 TO 17 PER CENT IN 1980. BOTH ARGUMENTS IMPLY A FAST RISE IN STERLING M3 RELATIVE TO M1 BECAUSE THE FORMER INCLUDES INTEREST-BEARING DEPOSITS HELD AS ASSETS WHEREAS THE LATTER COVERS ONLY 'TRANSACTIONS BALANCES' (SEE PANEL 1). AND BOTH ARGUMENTS ALSO IMPLICITLY ASSERT THAT MONEY GROWTH IS NOT INFLATIONARY IF IT TAKES THE FORM OF AN ADJUSTMENT TO THE STOCK OF WEALTH, RATHER THAN AN ADJUSTMENT TO THE STOCK OF MONEY HELD TO FACILITATE TRANSACTIONS IN GOODS.

SECTION II - THE INDICATOR OF MONETARY POLICY

AT A TIME WHEN DIFFERENT MONETARY INDICATORS GIVE DIFFERENT READINGS OF THE CURRENT THRUST OF MONETARY POLICY, IT IS IMPORTANT TO BE CLEAR REGARDING THE CRITERIA WHICH WE USE IN PREFERRING ONE INDICATOR TO ANOTHER. THE MOST PREFERRED MONETARY INDICATOR IS THAT WHICH BEST PREDICTS THE FUTURE RATE OF GROWTH OF EITHER MONEY INCOME OR THE RATE OF INFLATION. THIS IN TURN POSES TWO QUESTIONS: FIRST SHOULD WE CHOOSE A QUANTITY (MONEY, MONETARY BASE, PSL) OR A PRICE (THE INTEREST RATE OR EXCHANGE RATE) AND, SECOND, SHOULD WE CHOOSE ONE TARGET (SUCH AS THE GOVERNMENT DID IN LAYING OUT THE MTF5) OR MULTIPLE TARGETS (AS THE FEDERAL RESERVE HAVE DONE IN THE US) AND IF THEY DIVERGE HOW SHOULD WE FORM A JUDGEMENT?

THE ANSWER TO THE FIRST QUESTION IS THAT IT MAKES NO DIFFERENCE WHETHER WE CHOOSE A QUANTITY OR A PRICE, PROVIDING WE DO NOT HAVE EITHER CHANGING RATES OF INFLATION OR CHANGES IN 'REAL' FACTORS IN THE ECONOMY. CONSIDER USING INTEREST RATES AS AN INDICATOR OF MONETARY POLICY. INTEREST RATES CAN BE AFFECTED BY REAL FACTORS SUCH AS THE PRODUCTIVITY OF INVESTMENT, OR BY A NOMINAL FACTOR, THE EXPECTED RATE OF INFLATION. THE MARKET RATE IS THE SUM OF THE REAL RATE AND THE EXPECTED INFLATION RATE. BECAUSE IT IS THE REAL RATE THAT MATTERS FOR ECONOMIC DECISIONS, IT IS THIS RATE RATHER THAN THE MARKET RATE WHICH POLICY-MAKERS SHOULD CONTROL. CAN ONE INFER ANYTHING ABOUT THE REAL RATE FROM THE BEHAVIOUR OF THE MARKET RATE?

THE REAL INTEREST RATE FACING ANY INVESTOR IS THE EXPECTED MONEY TERMS INTEREST RATE OVER THE PERIOD OF THE LOAN MINUS THE EXPECTED RATE OF INFLATION OVER THAT PERIOD. CALCULATIONS OF "REAL" INTEREST RATES BASED ON ANY OTHER DEFINITION ARE TOTALLY MISLEADING.

IT IS PLAINLY FAR FROM STRAIGHTFORWARD TO CALCULATE THE REAL INTEREST RATE CORRECTLY. EVEN IF ONE IS WILLING TO LOOK AT CURRENT INTEREST RATES AND CURRENT INFLATION, AN ENORMOUS RANGE OF THE CALCULATED "REAL" RATES CAN BE PRODUCED. DOES ONE TAKE A LONG RATE, REGARDING THAT AS APPROXIMATING EXPECTED RATES OVER THE PERIOD OF THE LOAN, OR A SHORT RATE AS REPRESENTING THE CURRENT COST OF IT? AND FOR INFLATION, DOES ONE TAKE THE LATEST MONTH, SIX MONTHS, A YEAR, OR WHAT?

IN OTHER WORDS, THE REAL INTEREST RATE IS AN IMPORTANT ECONOMIC CONCEPT - BUT IT IS FAR FROM EASY TO QUANTIFY. A RECOMMENDATION TO CHANGE THE STANCE OF MONETARY POLICY ON THE BASIS OF AN ESTIMATE OF THE REAL RATE OF INTEREST RESTS ON VERY FRAGILE FOUNDATIONS INDEED AND A RECOMMENDATION BASED ON MARKET RATES IS WITHOUT ANY FOUNDATION WHATSOEVER.

OR CONSIDER THE EXCHANGE RATE. CAN THE BEHAVIOUR OF THE EXCHANGE RATE TELL ONE ANYTHING ABOUT THE STANCE OF MONETARY POLICY? USUALLY IT CAN. THE EXCHANGE RATE MEASURES THE EXTERNAL VALUE OF A CURRENCY JUST AS THE PRICE LEVEL MEASURES ITS INTERNAL VALUE. IT IS THEREFORE NOT SURPRISING THAT MONETARY GROWTH GENERALLY AFFECTS BOTH THE INTERNAL AND THE EXTERNAL VALUE OF A CURRENCY, AND THAT WHEN A CURRENCY IS STRONG ON THE FOREIGN EXCHANGES MONEY IS USUALLY TIGHT. INDEED, WHEN THERE IS AN UNEXPECTED TIGHTENING OF MONEY THE EXCHANGE RATE WILL JUMP UPWARDS IF THAT TIGHTENING IS EXPECTED TO PERSIST, THE RATE WILL JUMP BECAUSE SOME OF THE EXPECTED CONSEQUENT CHANGE IN THE PRICE LEVEL WILL BE CAPITALISED INTO THE CURRENT EXCHANGE RATE. UNDER THESE CIRCUMSTANCES, THE FORWARD RATE WILL ALSO RISE, PRESERVING INTEREST PARITY.

THERE ARE, HOWEVER, CIRCUMSTANCES - ALBEIT NOT COMMON - WHEN AN EXCHANGE RATE HAS JUMPED WITHOUT ANY CHANGES IN MONETARY POLICY. IF THERE IS A SUDDEN INCREASE IN THE DEMAND FOR ASSETS DENOMINATED IN SOME CURRENCY, THAT CURRENCY'S FOREIGN EXCHANGE VALUE WILL RISE WITHOUT ANY CHANGE IN ITS MONETARY POLICY. THERE IS EVERY REASON TO BELIEVE THAT THAT HAS HAPPENED TO STERLING. THE UK IS NOW SUBSTANTIALLY INSULATED FROM OIL PRICE (OR SUPPLY) SHOCKS. THAT HAS MADE UK ASSETS MORE ATTRACTIVE THAN BEFORE TO INVESTORS, AND THUS RAISED THE DEMAND FOR STERLING ON THE FOREIGN EXCHANGES.

MARKET PRICES, THEREFORE, ARE NOT GOOD INDICATORS OF THE CURRENT THRUST OF MONETARY POLICY BECAUSE OF CHANGING REAL FACTORS IN THE ECONOMY AND BECAUSE OF THE DIFFICULTY OF ESTIMATING THE EXPECTED RATE OF INFLATION. IT IS NOT SURPRISING, THEREFORE, THAT IT IS DIFFICULT TO FIND A GOOD CORRELATION BETWEEN EITHER INTEREST RATES OR THE EXCHANGE RATE AND THE FUTURE GROWTH OF INFLATION.

THE MONEY SUPPLY, HOWEVER, IS FREE FROM BOTH OF THESE DEFICIENCIES. ITS NOMINAL MAGNITUDE IS UNAFFECTED BY EITHER CHANGING REAL FACTORS OR CHANGES IN THE EXPECTED RATE OF INFLATION. THE CHOICE BETWEEN A NARROW AND A BROAD MONEY SUPPLY THEN DEPENDS ON WHICH IS BETTER RELATED TO THE GROWTH OF MONEY INCOME OR INFLATION. IT IS THIS, RATHER THAN THE BEHAVIOUR OF THE REAL ECONOMY, OR THE LEVEL OF INTEREST RATES OR EXCHANGE RATES, WHICH SHOULD DETERMINE THE CHOICE OF MONETARY INDICATOR. THIS ALSO DETERMINES THE ANSWER TO THE SECOND QUESTION. THE PROBLEM WITH THE GOVERNMENT ADOPTING A VARIETY OF MONETARY TARGETS IS THAT IT IS HIGHLY PROBABLE THAT OVER A PARTICULAR TIME PERIOD AT LEAST ONE OF THE INDICATORS WILL HAVE BEHAVED TOLERABLY WELL. BUT THAT IS NOT GOOD ENOUGH. WHAT MATTERS IS THE BEHAVIOUR OF THAT MONETARY VARIABLE MOST CLOSELY ASSOCIATED WITH THE FUTURE RATE OF INFLATION.

SECTION III - WHY HAVE M1 AND STERLING M3 DIVERGED?

TWO TYPES OF EXPLANATION CAN BE OFFERED FOR THE DIVERGENCE BETWEEN THE GROWTH RATE OF THE BROAD MONEY STOCK, STERLING M3, AND THE NARROW MONEY STOCK, M1, IN 1980. FIRST, THE GROWTH OF STERLING M3 HAS BEEN AFFECTED, AFTER JULY, BY THE LIFTING OF THE 'CORSET' RESTRICTIONS ON BANKS ISSUING INTEREST BEARING ELIGIBLE LIABILITIES. SECOND, THE DEMAND FOR THESE INTEREST BEARING TYPES OF MONEY MAY HAVE INCREASED RELATIVE TO THE DEMAND FOR NON-INTEREST-BEARING CHECKING ACCOUNTS. THIS MAY HAVE HAPPENED SIMPLY BECAUSE OF THE LEVEL OF INTEREST RATES; OR IT MAY HAVE HAPPENED - AS DISCUSSED ABOVE - BECAUSE OF THE PREFERENCES OF PRIVATE SAVERS TO HOLD ANY INCREASES IN THEIR ASSETS IN THE FORM OF INTEREST BEARING DEPOSITS. WE CONSIDER THE IMPACT OF THESE FACTORS IN TURN.

THE EFFECTS OF THE CORSET

THE CORSET ENCOURAGED A DIVERSION OF FUNDS OUT OF THE BANKS BALANCE SHEETS. MUCH OF THE BORROWING AND LENDING ACTIVITY WHICH WOULD HAVE TAKEN PLACE IN THE ABSENCE OF THE CORSET STILL CONTINUED, HOWEVER. IN PART THIS WAS EFFECTED THROUGH AN INCREASE IN BANK ACCEPTANCES OF BILLS DRAWN ON COMMERCIAL BORROWERS. IN PART ALSO THIS EVASION OF THE MONETARY CONTROL MECHANISM WAS EFFECTED, AFTER EXCHANGE CONTROLS WERE ABOLISHED IN NOVEMBER 1979, BY UK BANKS LENDING IN THE EUROSTERLING MARKET.

IT IS HARD TO QUANTIFY THIS LAST SOURCE OF 'DISINTERMEDIATION'.

IT IS, HOWEVER, RELATIVELY SIMPLE TO QUANTIFY THE 'BILL LEAK',

BY ADDING BANKERS ACCEPTANCES TO THE MONEY STOCK FIGURES.

A COMPARISON OF OFFICIAL STERLING M3 GROWTH IN THE PERIOD 1978-80 WITH THE CORRESPONDING GROWTH IN AN ADJUSTED STERLING M3 FIGURE

WHICH INCLUDES BANKERS ACCEPTANCES, IS VERY REVEALING. THE RESULTS ARE SUMMARISED ON TABLE 3. THEY SHOW THAT WHILE 'THE CORSET' APPEARED TO DEPRESS THE MONETARY GROWTH RATE BETWEEN JUNE 1978 AND JUNE 1980, THE EFFECT WAS MORE APPARENT THAN REAL. THE GROWTH RATE OF THE UNDERLYING 'ADJUSTED' MONEY SUPPLY CONTINUED AT A RATE OF 15-16 PER CENT PER ANNUM, AS AGAINST AN 11-12 PER CENT GROWTH IN THE OFFICIAL FIGURES. AFTER THE CORSET WAS REMOVED IN MID-1980, THE DISINTERMEDIATED FUNDS FLOWED BACK, FROM BANKERS ACCEPTANCES, INTO BANK LOANS AND DEPOSITS. THE RESULT WAS A VERY RAPID GROWTH IN THE OFFICIAL DEFINITION OF STERLING M3. IN THIS IMMEDIATE POST-CORSET PHASE, HOWEVER, STERLING M3 IS JUST AS MISLEADING AN INDICATOR OF UNDERLYING MONETARY CONDITIONS AS IT WAS UNDER THE CORSET. THE 'ADJUSTED' STERLING M3 FIGURES SHOW THAT MONETARY GROWTH DID ACCELERATE IN 1980, BUT TO AROUND 16-17 PER CENT, RATHER THAN THE OFFICIALLY RECORDED 19-20 PER CENT PER ANNUM.

THE UNDERLYING GROWTH RATE OF STERLING M3 HAS, THEN, BEEN LESS THAN THE OFFICIAL FIGURES SUGGEST. IT HAS GROWN AT ROUGHLY THE SAME RATE AS THE BROAD INDICATORS PSL1 AND PSL2 SHOWN ON TABLE 2. CONSEQUENTLY, WHILE THE CORSET DISTORTION HAS EXAGGERATED TRUE STERLING M3 GROWTH IN 1980, IT DOES LITTLE TO EXPLAIN THE WIDE DIVERGENCE BETWEEN NARROW DEFINITIONS OF MONEY AND BROAD DEFINITIONS OF MONEY.

THE EFFECTS OF INTEREST RATES AND SAVINGS

THE ALTERNATIVE SET OF EXPLANATIONS FOR THIS PHENOMENON RELIES ON DIFFERENCES IN THE MOTIVES PEOPLE HAVE FOR HOLDING M1 AND, SAY, STERLING M3. THE TRADITIONAL VIEW IS THAT SINCE STERLING M3 INCLUDES INTEREST-BEARING TIME DEPOSITS AND CERTIFICATES OF DEPOSIT, WHEREAS M1 PAYS HOLDERS NO INTEREST, THEN AT TIMES OF HIGH INTEREST RATES THERE WILL BE A SWITCH FROM THE LATTER TO THE FORMER. THE VIEW

 TABLE 3 M3 UNDER THE CORSET, 1979-80

M3 MEASURE	GROWTH OVER 12 MONTHS ENDING					
	1978		1979		1980	
	JUNE	DEC	JUNE	DEC	JUNE	DEC
OFFICIAL STERLING M3	16.1	13.3	11.1	11.7	11.6	19.5
		'THE CORSET'				
ADJUSTED STERLING M3	17.8	15.2	14.1	15.1	15.9	16.8

SOURCE : CSO FINANCIAL STATISTICS, CBIF

EXPRESSED BY THE TREASURY AND BY MELTZER IS THAT AS PEOPLE ACCUMULATE MORE AND MORE WEALTH THROUGH SAVING, THEY TEND TO HOLD A LARGER AND LARGER PROPORTION OF THEIR NEW WEALTH IN THE FORM OF INTEREST-BEARING ASSETS LIKE TIME DEPOSITS AND STERLING CERTIFICATES OF DEPOSIT, RATHER THAN SIMPLY HOLDING PROPORTIONATELY MORE NON-INTEREST BEARING MONEY.

WE CAN TEST WHETHER EITHER OF THESE EXPLANATIONS IS CORRECT BY EXAMINING WHETHER, IN THE LIGHT OF PAST MOVEMENTS IN MONEY, INTEREST AND SAVINGS, THE ASSUMPTIONS THAT ARE MADE ABOUT THE RELATIVELY HIGH 'INTEREST ELASTICITY' AND 'SAVINGS ELASTICITY' OF STERLING M3 ARE CORRECT. TO CARRY OUT THESE TESTS THOROUGHLY, IT HELPS TO HAVE A SIMPLE MATHEMATICAL FORMULATION OF THE IDEAS MOOTED ABOVE. THE SIMPLEST POSSIBLE FRAMEWORK IS SET OUT ON PANEL 2. BRIEFLY, EQUATION (1) STATES THAT THE DEMAND FOR STERLING M3 AS A PROPORTION OF TOTAL WEALTH DEPENDS ON TIME (I.E. THERE MAY BE A TREND IN TASTES TOWARDS OR AWAY FROM THIS ASSET), ON THE YIELD ON CERTIFICATES OF DEPOSIT (POSITIVELY, SO $c_3 > 0$), AND ON THE SCALE OF WEALTH ITSELF (I.E. AT HIGH LEVELS OF WEALTH THE RATIO $M3/W$ MAY BE HIGHER THAN AT LOW LEVELS OF WEALTH). EQUATION (2) IMPUTES SIMILAR BEHAVIOUR TO THE DEMAND FOR M1, EXCEPT THAT IT IS - IF ANYTHING - NEGATIVELY RELATED TO INTEREST RATES ($c_1 < 0$), AND IS PERHAPS - IF MELTZER'S CONJECTURE IS TRUE - LESS SENSITIVE TO CHANGES IN WEALTH THAN IS STERLING M3.

SIMPLE MANIPULATIONS LEAD TO EQUATION (6), WHICH STATES THAT - IF BOTH THE TRADITIONAL INTEREST-SENSITIVITY HYPOTHESES AND THE MELTZER SAVINGS HYPOTHESIS ARE CORRECT - THE DIFFERENCE BETWEEN THE GROWTH RATES OF STERLING M3 AND M1 SHOULD DEPEND POSITIVELY ON THE CHANGE IN INTEREST RATES AND POSITIVELY ON THE REAL LEVEL OF SAVINGS.

THE ACTUAL SIZES OF THE PARAMETERS B, C AND D CAN BE ESTIMATED BY REGRESSION METHODS, USING DATA ON THE UK IN THE PERIOD 1963-80. THE RESULTS ARE SHOWN ON TABLE 4.

TABLE 4 THE M3 - M1 RELATIONSHIP

DEPENDENT VARIABLE	COEFFICIENT ON:			STATISTICS	
	CONSTANT	CHANGE IN C.D.RATE	LEVEL OF SAVINGS RATIO	R ²	ρ
	B	C	D		
M3 GROWTH <u>LESS</u>	0.35	3.56	0.54	0.37	0.36
M1 GROWTH	(0.03)	(5.21)	(0.11)	7.60	(3.19)
M3 GROWTH <u>LESS</u>	1.59	3.55		0.37	0.36
M1 GROWTH	(1.13)	(5.26)		7.54	(3.16)
M3 GROWTH <u>LESS</u>	2.22		-3.64	0.12	0.36
M1 GROWTH	(1.31)		(0.75)	8.93	(3.24)

OLS ESTIMATES, QUARTERLY DATA 1963-1980

BENEATH EACH OF THE ESTIMATED COEFFICIENTS B, C AND D THERE IS A FIGURE IN BRACKETS. THIS T-STATISTIC MEASURES WHETHER THE ESTIMATED COEFFICIENT IS SIGNIFICANTLY DIFFERENT FROM ZERO. ROUGHLY, A VALUE ABOUT 1.8 IS NECESSARY. LOOKING AT THE FIRST EQUATION ON TABLE 4, IT IS CLEAR THAT B AND D ARE NOT SIGNIFICANTLY NONZERO BUT THAT C IS VERY SIGNIFICANT. IN PLAIN TERMS, THE REGRESSION TELLS US THREE THINGS :

1. THERE IS NO DIFFERENTIAL TREND IN TASTES TOWARDS EITHER STERLING M3 OR M1.

2. STERLING M3 WILL GROW SIGNIFICANTLY FASTER THAN M1 IF INTEREST RATES RISE. ROUGHLY, A 1 PER CENT RISE IN THE STERLING CD RATE THROUGH ONE YEAR WILL CAUSE A 3-4 PER CENT (POSITIVE) DIFFERENCE BETWEEN THE GROWTH RATES OF BROAD AND NARROW MONEY IN THAT YEAR.
3. THERE IS NO TENDENCY FOR INCREASES IN THE SAVINGS RATIO TO CAUSE A RELATIVELY FAST GROWTH IN STERLING M3. ALTHOUGH THE COEFFICIENT D IS POSITIVE IN THE FIRST EQUATION OF TABLE 4, IT IS NOT SIGNIFICANTLY DIFFERENT FROM ZERO.

THE REMAINING EQUATIONS ON TABLE 2 CHECK OUT WHAT HAPPENS WHEN EITHER THE SAVINGS RATIO OR THE INTEREST RATE IS DROPPED FROM OUR MODEL OF EQUATION 6. THE FIRST SHOWS THAT THE ESTIMATE OF THE INTEREST RATE EFFECT REMAINS UNCHANGED, AND THAT THE FIT OF THE EQUATION (AS MEASURED BY THE STATISTIC \bar{R}^2) DOES NOT DETERIORATE. THE SECOND SUBSIDIARY REGRESSION IS INTERESTING SINCE IT COULD BE ARGUED THAT THE COMPLETE MODEL OBSCURES THE SAVINGS EFFECT - INTEREST RATES MIGHT RISE AS THE DEMAND FOR INTEREST-BEARING MONEY RISES, AND SO APPEAR TO BE CAUSING THE M3 GROWTH, WHEREAS THE TRUE ORIGIN OF THE GROWTH WAS THE SAVINGS RATIO RISE. INTUITIVELY, THIS ARGUMENT IS PERVERSE - IF THE DEMAND FOR STERLING CERTIFICATES OF DEPOSIT RISES, FOR EXAMPLE, ONE WOULD EXPECT TO FIND THEIR YIELD FALLING, NOT RISING. EMPIRICALLY, THIS TURNS OUT TO BE THE CASE. WHEN RELATIVE M3 GROWTH IS REGRESSED ON SAVINGS RATIO CHANGES ALONG, THE COEFFICIENT ACTUALLY GOES NEGATIVE, THOUGH IT IS STILL NOT STATISTICALLY SIGNIFICANT.

SECTION IV - M3 AND M1 AS EARLY WARNING SYSTEMS

ESTABLISHING THE REASON FOR THE DIVERGENT BEHAVIOUR OF STERLING M3 AND M1 DOES NOT, OF COURSE, HELP US CHOOSE WHICH AGGREGATE SHOULD BE TARGETTED. THIS DEPENDS ON THE DEGREE TO WHICH EACH IS HELPFUL IN GIVING AN EARLY INDICATION OF THE FUTURE COURSE OF INFLATION.

TO ASSESS THE RELATIVE MERITS OF THE TWO MONETARY AGGREGATES AS INTERMEDIATE TARGETS WE HAVE CONDUCTED TWO EXPERIMENTS. IN THE FIRST, WE HAVE SIMPLY REGRESSED CURRENT INFLATION ON CURRENT AND PAST MONETARY GROWTH, UP TO A LAG OF 20 QUARTERS, USING EACH DEFINITION OF MONEY IN TURN (SEE PANEL 3, EQUATION 7). WE HAVE ALSO INVESTIGATED WHETHER INCLUSION OF THE SAVINGS RATIO IMPROVES THIS REGRESSION. IN THE SECOND EXPERIMENT WE HAVE REGRESSED CURRENT INFLATION ON CURRENT AND PAST MONEY GROWTH, AND ON PAST INFLATION ITSELF (PANEL 3, EQUATIONS (9) AND (10)). THE CONTRIBUTION OF THE MONEY GROWTH TERMS IN THIS REGRESSION GIVE US SOME IDEA OF WHETHER MONEY GROWTH IS 'CAUSING' INFLATION, OR WHETHER BOTH ARE THE PRODUCTS OF SOME MORE FUNDAMENTAL FORCES IN THE ECONOMY. THIS EXPERIMENT WAS CONDUCTED ON ALL DEFINITIONS OF MONEY, INCLUDING THE MONETARY BASE AND THE PRIVATE SECTOR LIQUIDITY AGGREGATES. IN ADDITION, THE EXPERIMENT HAS BEEN CONDUCTED IN REVERSE (PANEL 3, EQUATIONS (11) AND (12)); THAT IS, WE HAVE EXAMINED WHETHER PAST INFLATION HAS IN ANY SENSE 'CAUSED' MOVEMENTS IN PARTICULAR DEFINITIONS OF MONEY, SO THAT THESE CANNOT BE CONSIDERED GENUINELY CONTROLLABLE GIVEN THE CURRENT MONEY SUPPLY PROCESS IN THE UNITED KINGDOM.

INFLATION AND PAST MONEY GROWTH

THE RESULTS OF THE FIRST EXPERIMENT ARE SUMMARISED ON TABLE 5. THE ESTIMATED RELATIONS BETWEEN INFLATION AND THE TWO MONEY SUPPLY MEASURES DIFFER IN FOUR RESPECTS: ON ALL COUNTS, THE EQUATION USING

STERLING M3 MUST BE CONSIDERED SUPERIOR TO THAT USING THE NARROW AGGREGATE M1.

TABLE 5 M1 AND M3 AS PREDICTORS OF INFLATION

DEPENDENT VARIABLE	MONEY MEASURE	COEFFICIENT ON:		STATISTICS	
		CONSTANT	PAST MONEY GROWTH ^A	\bar{R}^2	D
RETAIL PRICE INFLATION	M1	5.64 (2.68)	0.78 (3.77)	0.35	1.44
	STERLING M3	1.85 (0.69)	0.92 (3.82)	0.47	1.63

A. COEFFICIENTS SHOWN ARE THE SUMS OF COEFFICIENTS ON MONEY GROWTH IN THE PRECEDING 20 QUARTERS. THE AVERAGE LAG BETWEEN MONEY GROWTH AND INFLATION IS 17 QUARTERS FOR THE M1 EQUATION, AND 10 FOR THE STERLING M3 EQUATION.

OLS ESTIMATES, QUARTERLY DATA 1963-1980.

FIRST, THE STERLING M3 EQUATION EXPLAINS A GREATER PROPORTION (ABOUT ONE HALF) OF THE VARIATIONS IN QUARTER TO QUARTER INFLATION RATES THAN DOES THE M1 EQUATION (ABOUT ONE THIRD). TO BE PRECISE, THE \bar{R}^2 FOR THE FORMER IS 0.47; FOR THE LATTER ONLY 0.35. SECOND, THERE ARE SIGNS THAT THERE IS A SYSTEMATIC PATTERN IN THE INFLATION SERIES WHICH IS LEFT UNEXPLAINED BY MOVEMENTS IN M1, AS EVIDENCED BY THE LOW DURBIN-WATSON D-STATISTIC. THERE IS LESS EVIDENCE OF UNEXPLAINED SYSTEMATIC MOVEMENT IN THE STERLING M3 EQUATION.

ON BOTH FIT AND DYNAMIC SPECIFICATION NEITHER EQUATION PROVIDES A

TOTAL EXPLANATION FOR ALL MOVEMENTS IN INFLATION. BUT THIS IS NOT PART OF THE MONETARIST ARGUMENT. INDEED, THE VERY LACK OF ANY MECHANISTIC CONNECTION BETWEEN MONEY, ACTIVITY, AND PRICES IS PART OF THE ARGUMENT FOR STICKING TO A MONETARY RULE RATHER THAN TRYING TO TAILOR MONEY GROWTH TO SUIT CIRCUMSTANCES. THERE IS LITTLE DOUBT, FOR EXAMPLE, THAT INCOMES POLICIES CAN DRIVE INFLATION TEMPORARILY BELOW THE TRENDS WHICH WOULD BE PREDICTED BY THE ABOVE EQUATIONS, NOR THAT INFLATION IS SUBJECT TO MANY RANDOM SHOCKS DUE TO CHANGES IN DEMAND AND SUPPLY CONDITIONS IN THE ECONOMY. BUT THE EQUATIONS SHOW THAT, FROM THE EXPERIENCE OF THE PAST FIFTEEN YEARS, STERLING M3 CAN BE RELIED ON TO DELIVER A REASONABLE PREDICTION OF THE TREND IN INFLATION TWO TO THREE YEARS INTO THE FUTURE.

THE THIRD POINT TO NOTE IN THE COMPARISON OF THE M1 AND STERLING M3 RELATIONS OF TABLE 4 IS THAT THE CONSTANT TERM OF THE FORMER IS SIGNIFICANTLY POSITIVE, WHEREAS THE CONSTANT TERM IN THE LATTER IS EFFECTIVELY ZERO. THE FIRST SUGGESTS INFLATION HAS A SPONTANEOUS TREND OF OVER 5-6 PER CENT PER ANNUM, IRRESPECTIVE OF THE BEHAVIOUR OF MONEY. THE LATTER SUGGESTS INFLATION HAS NO TREND INDEPENDENT OF THE TREND IN MONEY GROWTH, A MUCH MORE THEORETICALLY PLAUSIBLE STATEMENT. THE FOURTH POINT IS THAT THE RELATION BETWEEN M1 GROWTH AND PRICE INFLATION IS LESS THAN ONE-TO-ONE; A 10 PER CENT GROWTH IN M1 WILL - AFTER A SPECTACULARLY LONG LAG, INCIDENTALY - DELIVER A 7.8 PER CENT RATE OF INFLATION. FOR STERLING M3, HOWEVER, THE RELATION BETWEEN INFLATION AND MONEY GROWTH IS VIRTUALLY ONE-TO-ONE. THUS NOT ONLY IS THE EQUATION RELATING INFLATION TO PAST STERLING M3 GROWTH STATISTICALLY MORE ROBUST THAN THE EQUATION USING M1, IT ALSO CONTAINS MORE PLAUSIBLE COEFFICIENT ESTIMATES.

THE OFFICIAL STERLING M3 SERIES HAS, HOWEVER, BEEN SERIOUSLY DISTORTED FROM TIME TO TIME, AS THE CORSET SCHEME HAS BEEN ALTERNATELY IMPOSED AND REMOVED IN THE PERIOD 1973-80. IF OUR ARGUMENTS ABOVE ARE CORRECT, WE SHOULD REALLY BE CONDUCTING OUR TESTS OF THE DETERMINANTS OF INFLATION USING AN ADJUSTED SERIES RATHER THAN THE OFFICIAL SERIES. UNFORTUNATELY WE CAN ONLY MAKE ADJUSTMENTS TO THE SERIES FOR A SHORT RUN OF YEARS, AND THIS DOES NOT PROVIDE US WITH ENOUGH DATA TO INVESTIGATE THE RELATIONSHIP BETWEEN INFLATION AND THE ADJUSTED STERLING M3 SERIES, GIVEN THE LAGS INVOLVED. THE BEST WE CAN DO IN THESE CIRCUMSTANCES IS TO EXPLOIT THE FACT THAT THROUGHOUT THE PERIOD 1973-80 THE ADJUSTED STERLING M3 SERIES YIELDS FIGURES FOR MONETARY GROWTH WHICH PARALLEL THOSE IN THE SLIGHTLY BROADER AGGREGATE, PSL1

TABLE 6 OFFICIAL AND ADJUSTED STERLING M3 AS PREDICTORS OF INFLATION

DEPENDENT VARIABLE	MONEY MEASURE	COEFFICIENT ON:		STATISTICS	
		CONSTANT	PAST MONEY GROWTH ^A	\bar{R}^2	D
RETAIL PRICE	OFFICIAL	1.85	0.92	0.47	1.63
	STERLING M3	0.69	(3.82)		
	PSL1 (ADJUSTED STERLING M3)	1.84 (0.75)	0.95 (4.26)	0.53	1.69

A. COEFFICIENTS SHOWN ARE THE SUMS OF COEFFICIENTS ON MONEY GROWTH IN THE PRECEDING 20 QUARTERS. THE AVERAGE LAG BETWEEN MONEY GROWTH AND INFLATION IS 10 QUARTERS FOR THE OFFICIAL STERLING M3 EQUATION, AND 10 QUARTERS FOR THE ADJUSTED STERLING M3 EQUATION. OLS ESTIMATES, QUARTERLY DATA, 1971-1980.

ON TABLE 6, WE HAVE CONDUCTED A REGRESSION OF INFLATION ON PAST GROWTH IN PSL1 OVER THE WHOLE PERIOD 1963-80, ON THE ASSUMPTION THAT THIS IS A GOOD PROXY FOR THE TRUE BEHAVIOUR OF STERLING M3. ON ALL CRITERIA, PSL1 IS A SLIGHTLY MORE ACCURATE AND BETTER DEFINED PREDICTOR OF INFLATION THAN THE OFFICIAL STERLING M3 FIGURE. THIS SUGGESTS THAT CONTROL OF STERLING M3 THROUGH A DEVICE SUCH AS THE CORSET IS PROBABLY NOT EFFECTIVE AS A COUNTERINFLATIONARY WEAPON, EVEN SUPPOSING SUCH A POLICY COULD BE MADE PERMANENT.

THE IMPACT OF SAVINGS

IN ANY ECONOMETRIC EXERCISE, IT IS POSSIBLE TO RAISE DOUBTS OVER WHETHER THE RELATIONSHIPS ESTIMATED ON AVERAGE OVER SOME TIME PERIOD ARE TRULY STABLE OVER THE WHOLE PERIOD. IN OUR PARTICULAR EXERCISE, THERE IS THE SPECIFIC SUGGESTION, MADE IN THE 1981 FINANCIAL STATEMENT, THAT CHANGES IN THE SAVINGS RATIO MODIFY THE WAY BROAD MONEY GROWTH AFFECTS INFLATION. IF IN ONE YEAR STERLING M3 GROWTH IS FAST, BUT SAVINGS HIGH, THE TREASURY ARGUES THAT SUBSEQUENT INFLATION WILL BE LOWER THAN THE VALUE IT WOULD HAVE TAKEN IF SAVINGS HAD BEEN LOW. IF WE ADD PAST LEVELS OF THE SAVINGS RATIO AS ADDITIONAL EXPLANATORY VARIABLES (PANEL 3, EQUATION 8), THESE NEW VARIABLES SHOULD IF THE TREASURY HYPOTHESIS IS CORRECT - SIGNIFICANTLY IMPROVE THE LEVEL OF EXPLANATION OF INFLATION, AND SHOULD APPEAR WITH NEGATIVE COEFFICIENTS. A FORMAL TEST OF WHETHER THE UNEXPLAINED VARIATION IN INFLATION - THE 'RESIDUAL SUM OF SQUARES' - LEFT AFTER THE EFFECTS OF MONEY GROWTH HAD BEEN REMOVED COULD BE REDUCED BY INCLUDING PAST SAVINGS IS SHOWN ON TABLE 7. THE F-STATISTICS SHOWN IN THE LAST COLUMN HAVE TO BE AT LEAST 2.3 FOR ANY SIGNIFICANCE TO BE ATTACHED TO THE SAVINGS RATIO.

TABLE 7 SAVINGS IN THE INFLATION-MONEY RELATION

DEPENDENT VARIABLE	MONEY MEASURE	RESIDUAL SUM OF SQUARES WITH		STATISTICS
		PAST MONEY GROWTH ONLY	PAST MONEY AND PAST SAVINGS	F(6,39)
INFLATION	ML	1535.2	994.9	2.29
	STERLING M3	1242.3	898.7	1.80
	PSLI	1096.0	801.5	1.75

IN PRACTICE, THEN, WHEN THIS SORT OF REGRESSION WAS PERFORMED, THE SAVINGS RATIO ONLY IMPROVED THE FIT OF THE M1 REGRESSION. MOREOVER IN THIS REGRESSION THE SAVINGS RATIO ENTERED WITH A POSITIVE COEFFICIENT. THAT IS, IF M1 HAS BEEN GROWING SLOWLY, BUT SAVINGS GROWING FAST, INFLATION WILL BE FASTER THAN M1 GROWTH WOULD PREDICT. THIS IS PRECISELY THE SITUATION IN 1980, AND OUR RESULTS SUGGEST THAT HOPES FOR LOW INFLATION BASED ON ASSET ACCUMULATION ARGUMENTS ARE LIKELY TO BE FALLACIOUS.

THE REASON FOR THIS PERVERSE RESULT IS SIMPLY THAT THE SAVINGS RATIO IS RISING AND FALLING WITH INTEREST RATES, JUST AS STERLING M3 AND PSL1 RISE AND FALL RELATIVE TO M1. SO, TOGETHER, M1 AND THE SAVINGS RATIO ARE PROXING THE BEHAVIOUR OF THE BEHAVIOUR OF MORE EFFICIENT MEASURES OF MONEY. THIS IS THE ONLY ROLE FOR THE SAVINGS RATIO IN THE MONEY-INFLATION RELATION, AND IT IS PRECISELY THE OPPOSITE OF THAT CLAIMED BY THE TREASURY.

THE EXOGENEITY OF MONEY

WHAT THESE STATISTICAL RESULTS SHOW IS THAT MONEY GROWTH CAN BE USED TO SOME DEGREE TO PREDICT FUTURE INFLATION, AND THAT A BROAD AGGREGATE, SUCH AS STERLING M3, WILL BE A MORE ACCURATE AND MORE STABLE PREDICTOR THAN A NARROW AGGREGATE. THUS STERLING M3 IS A SUITABLE CANDIDATE FOR AN INTERMEDIATE POLICY TARGET. IT DOES NOT, HOWEVER, FOLLOW THAT MONEY 'CAUSES' INFLATION, OR THAT CONTROL OF THE MONEY STOCK IS A SENSIBLE OR FEASIBLE POLICY. THE APPARENT RELATIONSHIPS BETWEEN STERLING M3 AND INFLATION MIGHT, FOR EXAMPLE, BE DUE TO THE AUTHORITIES ACCOMMODATING INCREASES IN MONEY DEMAND AS A RESULT OF EXPECTATIONS OF FUTURE INFLATION. EQUALLY, THE MONEY STOCK MIGHT PROVE TO BE UNCONTROLLABLE, AND BE DETERMINED PARTLY BY THE RESPONSE OF THE BANKING SYSTEM TO THE DEMAND FOR MONEY - A BELIEF PREVALENT AMONG KEYNESIAN ECONOMISTS.

ONE WAY TO TEST FOR THESE 'CAUSAL' RELATIONSHIPS IS TO FIND OUT IF PAST MONEY GROWTH CAN EXPLAIN UNANTICIPATED CHANGES IN INFLATION; IF IT DOES THEN THE MONEY GROWTH CANNOT HAVE BEEN THE POSITIVE RESPONSE TO EXPECTATIONS OF HIGHER INFLATION. THE 'EXOGENEITY' OF MONEY - THE INDEPENDENCE OF THE MONEY SUPPLY FROM DEVELOPMENTS IN THE ECONOMY - COULD BE ESTABLISHED IF PAST MOVEMENTS IN, SAY, PRICES PLAYED NO PART IN EXPLAINING UNANTICIPATED MOVEMENTS IN THE MONEY STOCK; IF THEY DID NOT, THEN THE CURRENT BEHAVIOUR OF THE ECONOMY DOES NOT 'CAUSE' FUTURE MONEY GROWTH.

IN TESTING FOR THESE RELATIONS, WE HAVE ASSUMED THAT EXPECTATIONS ABOUT INFLATION AND MONEY ARE FORMED IN ANY QUARTER ON THE BASIS OF MOVEMENTS OF THESE SERIES OVER THE PRECEDING TWENTY QUARTERS. THESE CORRESPOND TO EQUATIONS (9) AND (11) IN PANEL 3. WE HAVE THEN ADDED THE PAST TWENTY QUARTERS' MONEY GROWTH AND INFLATION TO THE EQUATIONS FOR INFLATION AND MONEY GROWTH RESPECTIVELY - GIVING EQUATIONS (8) AND (12) - AND TESTED TO DETERMINE WHETHER THESE NEW VARIABLES CONTRIBUTE SIGNIFICANTLY TO THE EXPLANATION OF INFLATION OR MONEY SUPPLY BEHAVIOUR. THE ANSWERS ARE SUMMARISED ON TABLE 8, IN THE FORM OF F-STATISTICS, BASED ON THE REDUCTION IN THE SUM OF SQUARED RESIDUALS FOLLOWING THE INTRODUCTION OF VARIABLES OTHER THAN LAGGED DEPENDENT TERMS. THESE F-STATISTICS SHOULD EXCEED 2.3 IF ANY CAUSAL SIGNIFICANCE IS TO BE ATTACHED TO THE RELATIONS BETWEEN INFLATION AND MONEY GROWTH. THE RESULTS CAN BE SUMMARISED SIMPLY. OF ALL THE MONEY DEFINITIONS USED ONLY PSL1 (AND HENCE, PROBABLY, AN ADJUSTED STERLING M3 SERIES) CAN BE CONSTRUED AS 'CAUSING' SUBSEQUENT INFLATION. NONE OF THE MONEY STOCK MEASURES, HOWEVER, IS 'CAUSED' BY PAST OR CURRENT INFLATION SO IT IS CERTAINLY WRONG TO THINK OF THE MONEY STOCK AS RESPONDING PASSIVELY TO ANY DEMAND DUE TO PRICE LEVEL CHANGES.

 TABLE 8 MONEY AND INFLATION: CAUSALITY TESTS

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	RESIDUAL SUM OF SQUARES WITH		STATISTICS
		LAGGED DEPENDENT	LAGGED DEPENDENT PLUS CURRENT AND LAGGED INDEPENDENT	F(6,39)
INFLATION	M0	1159.5	975.4	1.22
INFLATION	ML	1159.5	1050.2	0.68
INFLATION	STERLING M3	1159.5	965.4	1.31
INFLATION	PSL1	1159.5	775.3	3.23
INFLATION	PSL2	1159.5	1016.0	0.92
M0	INFLATION	2794.3	2285.2	1.44
ML	INFLATION	3026.9	2810.8	0.50
STERLING M3	INFLATION	1299.9	1029.3	1.71
PSL1	INFLATION	1606.4	1267.5	1.74
PSL2	INFLATION	782.9	670.1	1.10

SECTION V - CONCLUSION

THE EVIDENCE OF THE PAST 18 YEARS POINTS TO STERLING M3 BEING A BETTER MONETARY INDICATOR THAN M1. THIS OBSERVATION MEANS, HOWEVER, THAT THE BEHAVIOUR OF THE ECONOMY IN 1980 CANNOT BE EXPLAINED IN A SIMPLE WAY BY CLAIMING THAT MONEY WAS TIGHT. WHY, THEN, IF MONETARY POLICY WAS EASY IN 1980, DID INFLATION FALL, OUTPUT FALL, AND UNEMPLOYMENT RISE? THE ANSWER IS THAT MONEY GROWTH AFFECTS PRICES ONLY WITH A LAG; AND THAT WHILE MONEY GROWTH HAS A SHORT TERM INFLUENCE ON REAL ECONOMIC ACTIVITY, IT IS NOT THE ONLY EXOGENOUS SHOCK TO WHICH THE U.K. ECONOMY IS SUBJECT.

THE FIRST POINT IS, THEN, THAT IT TAKES A YEAR OR TWO FOR CHANGES IN MONEY GROWTH TO MAKE A SIGNIFICANT IMPACT ON THE RATE OF INFLATION. THE FALL IN THE RATE OF INFLATION IN 1980 REFLECTED, NOT CURRENT MONETARY GROWTH, BUT THE GROWTH THAT HAD OCCURRED IN 1978 AND 1979, WHEN THE RATE OF GROWTH OF AN ADJUSTED STERLING M3 MEASURE FELL FROM 18 PER CENT TO 14 PER CENT. BY THE SAME TOKEN, THE RATE OF INFLATION OVER THE NEXT YEAR OR TWO WILL BE SIGNIFICANTLY AFFECTED BY THE RISE IN MONEY GROWTH IN 1980 - AN AWKWARD FACT WHICH THE BUDGET ARGUMENTS ABOUT THE BEHAVIOUR OF SAVINGS WERE DESIGNED TO OBSCURE.

THE FINAL POINT IS THAT THE OUTPUT RECESSION IN 1980 HAD SEVERAL CAUSES. FIRST, EVEN THE HIGH MONEY GROWTH WAS SLIGHTLY LESS THAN THE AVERAGE RATE OF INFLATION, SO THERE WAS A FALL IN REAL STERLING M3 BALANCES. THIS DID CAUSE INCREASED SAVINGS, AND DEPRESSED DEMAND IN THE ECONOMY. BUT THE SIZE OF THIS 'REAL BALANCE EFFECT' WAS VERY SMALL. SECOND, THE HIGH REAL EXCHANGE RATE AND HIGH REAL INTEREST RATE UNDOUBTEDLY DEPRESSED EXPORT AND INVESTMENT DEMAND. NEITHER WAS DUE TO TIGHT MONEY. THE EXCHANGE/^{RATE} WAS INSTEAD BUOYED UP BY ITS ATTRACTIVENESS, AS A PETROCURRENCY, TO FOREIGN INVESTORS HEDGING AGAINST OIL PRICE UNCERTAINTIES; AND

INTEREST RATES WERE SIMPLY DRIVEN UP BY THE WEIGHT OF THE GOVERNMENTS OWN, MASSIVE, BORROWING. AGAIN, HOWEVER, THESE EFFECTS WERE NOT LARGE. EXPORTS STILL ROSE, IMPORTS ACTUALLY FELL, AND PRIVATE INVESTMENT FELL ONLY 1.5 PER CENT.

THE REAL PROBLEM IN 1980 WAS THAT ALL OF THE NEW DEMAND GROWTH IN THE ECONOMY, AND MORE, WAS MET FROM STOCKS, AND NOT FROM CURRENT PRODUCTION. THESE STOCKS HAD, IN TURN, BEEN BUILT UP IN 1978 AND 1979, WHEN MONEY GROWTH WAS HIGH, AND PRODUCERS THOUGHT THEY WERE FACING A GROWING REAL DEMAND FOR THEIR GOODS. IN FACT, THE DECEPTION WROUGHT BY THE IRRESPONSIBLE MONETARY AND PRICES POLICIES OF THE LAST GOVERNMENT DID IN A VERY REAL SENSE CAUSE THE RECESSION WHICH MANY COMMENTATORS ARE ATTRIBUTING TO THIS GOVERNMENT, BY INDUCING A MASSIVE STOCK CYCLE. IT WOULD INDEED BE IRONIC IF THE LESSONS OF HISTORY WERE NOT LEARNT, IF THE OFFICIAL EXPLANATION FOR 1980 GAINED CURRENCY, AND THE EXPERIENCE OF THE PAST YEAR WERE USED AS AN EXCUSE FOR A RETURN TO MONETARY INDISCIPLINE.

 PANEL 1 DEFINITIONS OF MONEY

DATA	DEFINITION	SOURCE
MONETARY BASE (M0)	M0 = NOTES AND COIN IN CIRCULATION WITH THE PUBLIC AND BANKERS DEPOSITS AT THE BANK OF ENGLAND	STATISTICAL ABSTRACT AND BANK OF ENGLAND QUARTERLY BULLETIN
MONEY SUPPLY (M1)	M1 = NOTES AND COIN IN CIRCULATION WITH PUBLIC AND UK PRIVATE SECTOR STERLING SIGHT DEPOSITS.	"
MONEY SUPPLY (£M3)	£M3 = M1 AND UK PRIVATE SECTOR STERLING TIME DEPOSITS AND UK PUBLIC SECTOR STERLING DEPOSITS.	"
PSL1	PSL1 = £M3 AND OTHER MONEY MARKET INSTRUMENTS (TREASURY BILLS, BANK BILLS, DEPOSITS WITH FINANCE HOUSES) AND TOTAL (GROSS) CERTIFICATES OF TAX DEPOSIT.	FINANCIAL STATISTICS
PSL2	PSL2 = PSL1 AND NET SAVINGS DEPOSITS AND SECURITIES, AND TOTAL (NET) CERTIFICATES OF TAX DEPOSIT.	FINANCIAL STATISTICS

 PANEL 2 : MONEYS, INTEREST AND SAVINGS

SYMBOLS

$M1$ = MONEY STOCK, $M1$ DEFINITION
 $M3$ = MONEY STOCK, $M3$ DEFINITION
 W = TOTAL WEALTH
 Y = INCOME FLOW = CHANGE IN WEALTH
 S = SAVINGS FLOW
 R = INTEREST RATE ON 3-MONTH STERLING CERTIFICATES OF DEPOSIT
 T = TIME IN QUARTERS

 PORTFOLIO BEHAVIOUR

$$\frac{M3}{W} = A_3 \exp(B_3 T) \exp(C_3 R) W^{D_3} \quad (1)$$

$$\frac{M1}{W} = A_1 \exp(B_1 T) \exp(C_1 R) W^{D_1} \quad (2)$$

$$C_3 > C_1$$

$$D_3 > D_1$$

 ESTIMATING EQUATION

FROM (1) AND (2)

$$\frac{M3}{M1} = \frac{A_3}{A_1} \exp\{(B_3 - B_1)T\} \exp\{(C_3 - C_1)R\} W^{D_3 - D_1}$$

HENCE

$$\log(M3) - \log(M1) = \log(A_3/A_1) + (B_3 - B_1)T + (C_3 - C_1)R + (D_3 - D_1) \log W \quad (4)$$

DIFFERENTIATING WITH RESPECT TO TIME

$$M_{3T} - M_{1T} = B + C(R_T - R_{T-1}) + D(W_T - W_{T-1}) \quad (5)$$
