France's Experience with Monetary and Exchange Rate Management: March 1973 to end-1981 *

Introduction [1]

From 1973 to 1977 the French authorities announced targets only for the growth in bank credit. From 1977 on the authorities began announcing targets in the growth of M_2. At the same time they retained credit targets but now, officially, as an instrument to achieve the money target.

From March 1973 the franc was allowed, in principle, to float freely against the dollar. At the same time, over the years 1973-81 France has intermittently acquired certain exchange rate obligations (targets) *vis-à-vis* a number of European countries, flowing from her membership of a monetary union. Until January 1974 France participated in the snake arrangements; in that month France left the snake but rejoined it in July 1975, leaving it once again in March 1976. Also from March 1979 France has been a member of the European Monetary System (EMS).

Under both the snake and EMS arrangements France had obligations to maintain its rate *vis-à-vis* another member within narrow limits.

---

* A longer version of this paper was prepared whilst the author served as a Consultant to the IMF. The IMF is, however, not responsible for the views expressed in the paper. I acknowledge helpful comments and help from P. Dhonte, B. Nivollet, M. Xafa, M. de Schaetzen. Research assistance was provided by B. Tucci-Bartsiotas and S. Becker.

The longer version, together with supporting charts and tables, is available from the author on request.

[1] For general references on the French experience see FEDERAL RESERVE BANK OF NEW YORK, "Treasury and Federal Reserve Foreign Exchange Operations", MORGAN GUARANTY TRUST COMPANY OF NEW YORK, *World Financial Markets*, regular issues of *International Currency Review*, AFTALION (1981), GALBRAITH (1982), THERON (1978), MELITZ (1980), BOURGUINAT (1980), CHOURAQUI (1981), BLACK (1977), DE LA GENIERE (1981), DE BOISSIEU (1982), OECD, "Monetary Policy in France" (1974).

When these limits were reached, France was obliged to intervene to maintain its rate within the limits. Provision was, however, made for an exchange rate realignment and, indeed, under both arrangements, when pressures have been intense, relief was obtained by some realignment.

France has had over the period a strong attachment to a stable exchange rate, particularly *vis-à-vis* the *deutsche mark* and also on an effective basis. It has tried to achieve this objective in various ways: by interest rate policy, by joining a monetary union and accepting the constraints which it imposes, by intervention in the foreign exchange market, and by the use of capital and exchange controls. [2] France has had some success in achieving some at least of her exchange rate objectives. From January 1974 to the end of 1980 France has had one of the most stable effective rates (nominal or real) and as well one of the most stable rates against the dollar (again nominal or real).

Against the *deutsche mark*, over the entire period March 1973 to December 1981, the franc fell by some 45 per cent. Over the same period the index of relative prices (German wholesale prices over French wholesale prices) fell by some 30 per cent. So much of the ground lost against the mark can be accounted for in terms of France's higher inflation. Despite, therefore, the many attempts over the years to hold the value of the franc against the *deutsche mark*, in the end the franc has had to surrender to fundamentals.

France has also had a good record with respect to monetary management. First, broad money growth has, in the last decade, been relatively stable. Second, the authorities did succeed in containing money growth, reducing it, to begin, from the heights of 1970-72, then,

[2] It is difficult to determine how effective these capital and exchange controls have been. The author has calculated monthly covered interest rate differentials for France *vis-à-vis* the dollar and also *vis-à-vis* the *deutsche mark*. The French 3 month interbank rate was used. For the dollar calculation the 3 month euro-dollar rate was used while for the *deutsche mark* the German 3 month interbank rate was used. These calculations were made from April 1974.

Interestingly, the covered differential is close to zero in both markets for nearly all months. Moreover, when it is significantly different from zero the outcome has tended to favor overseas investment, suggesting that controls over outflows have at times been effective. The data, however, is limited to arbitrage by banks and says nothing, of course, about the scope for and limits to arbitrage by nonbanks. Unfortunately, data for the latter is much more difficult to obtain. One can guess, however, that the controls here have had some effectiveness.

All of this, together, suggests that, in the case of France, the assumption of imperfect capital markets is probably the more appropriate one. This, in turn, also suggests that within limits (i.e., for the duration of, say, a few months) sterilized intervention has been feasible in France.

For a discussion of methods of managing exchange rates see ARGY (1982). This study also reviews the experiences to the end of 1979 of Germany, Japan and the UK with exchange rate management. See also ARGY (1983a, 1983b).

further, since 1977 (Table 1). Third, its record is also very good in achieving its money targets, particularly if one adjusts for statistical aberrations. In short, France has succeeded in both reducing gradually its money growth and achieving its announced targets all at the same time that she has been able to more or less stabilize her effective rate.

In the years 1977 to 1980 (the Barre years) France pursued a policy which had as an overriding objective the containment of inflation. Despite, however, the success in bringing down money growth, inflation actually accelerated in those years. The principal reason for this has been the second oil price shock of 1979/80 and, to a much lesser extent, the price decontrol program beginning in 1978. As in the case of many other industrial countries in recent years, the fight against inflation produced costs in terms of unemployment: the unemployment rate nearly doubled from some 4.4 per cent in 1976 to some 8.1 per cent in 1981.

TABLE 1

FRANCE: MONEY GROWTH AND RATE OF INFLATION
(year-on-year)

Year	National		IMF			Rate of Inflation	
	M_2	M_3	M_2	M_1	Credit[1]	Lagged 1 year	Lagged 2 years
1972	18.5	16.9	19.0	12.9	23.1	7.3	13.7
1973	14.5	14.0	14.8	10.1	18.1	13.7	11.8
1974	16.0	15.1	17.2	12.4	20.6	11.8	9.6
1975	16.5	16.8	14.7	10.0	13.5	9.6	9.4
1976	17.3	18.6	17.1	15.2	19.5	9.4	9.0
1977	12.3	13.5	11.8	7.2	12.6	9.0	10.8
1978	13.2	14.2	14.0	11.3	22.9	10.8	13.3
1979	13.4	14.2	12.9	12.2	12.1	13.3	13.3
1980	11.6	11.7	11.0	8.2	14.1	13.3	—
1981	12.6	12.5	11.3	11.9	15.5	—	—

Source: INTERNATIONAL MONETARY FUND, *International Financial Statistics* and National Sources.
[1] Line 22a, *IFS*; claims on private sector (deposit money banks).

In reviewing the French experience a striking feature is France's attachment toward a number of policy objectives, which may not all be consistent with one another. At least from 1977 to 1980 French macro-policy appears to have been dominated by four proximate objectives: it had a money growth target (by which it hoped to control inflation), it wished to minimize exchange rate fluctuations (as already noted), it also wished to avoid large reserve movements, and finally it wanted to minimize fluctuations in the interest rate relevant to the domestic economy. In pursuit of all these objectives it has used a great variety of devices. Those included the use of (a) credit ceilings, (b) sterilized intervention in the foreign exchange market, (c) interest rate controls and extensive regulation of financial markets, (d) capital and exchange controls, (e) special reserve requirements on nonresident deposits, and (f) the independent use of the "intervention" interest rate for external objectives. Those devices have helped France in her pursuit of multiple objectives, but her experience demonstrates that, particularly in times of stress, it is clearly not possible to achieve all of these objectives simultaneously.

France has, over the period of the study, experienced various combinations of internal and external disequilibria. In dealing with these situations France has made use of three broad types of policies. First, she has used general demand management policies, including monetary and fiscal policies. Second, she has used "substitution measures" directed at improving the trade and capital accounts, given levels of economic activity. These measures include exchange rate adjustments (commercial and/or financial if these are separated), exchange and capital controls, the use of interest rates to influence capital movements while trying to shelter the domestic economy from such movements and, finally, reserve requirements on nonresident deposits. Third, there has been some financing of overall balances (intervention in the foreign exchange market).

As is well known, in some situations, e.g., where there is a surplus and unemployment or inflation together with a deficit, the use of demand management will move the economy closer to balance on both fronts. Such policies, however, will not in themselves normally correct the two imbalances. [3] Additional measures will, therefore, normally be

[3] See ARGY (1981), Chapter 28.

needed to supplement demand management policies. In other situations, e.g., deficit and unemployment, or inflation and a surplus, the use of demand management creates conflicts in that pursuit of one objective is at the expense of the other. In these cases more radical use of "substitution" and "financing" policies will be needed.

From 1973 to mid-1974 France was faced with inflation-full employment together with an external deficit. From mid-1974 to end-1975 priorities shifted toward reducing the unemployment now at a time of external strength. In 1976 and again, more acutely, in 1981/82 France again sought to reduce unemployment but now at a time of external weakness. Finally, in the years 1977 to 1980 France gave priority to the fight against inflation but her experiences on the external front were mixed. There were times when the franc was strong on all fronts (i.e., against both the deutsche mark and the dollar), times when it was weak on all fronts, and still other times when it was strong on one front and weak on another. Between March 1979 and end-1980 the franc remained strong most of the time within the EMS but against the dollar, on balance, it was weak.

From 1973 to mid-1974, from 1974 to end-1975, and again most of the time between 1977 and 1980, there was no serious conflict between internal objectives (i.e., the one to which priority attached) and external objectives. Faced in 1973-74 with inflation-full employment, on the one hand, and external deficit, on the other, both monetary and fiscal policy became restrictive. From end-1974 to end-1975, faced with unemployment and a surplus, both monetary and fiscal policy became more expansionary. However, in 1976, in 1981/82, and again in 1980 conflicts between the two objectives surfaced. In 1976 priority was given to external objectives and both monetary and fiscal policy did become more restrictive, despite the unemployment. In 1980, faced with inflation and external strength (within the EMS), France did not compromise in the fight against inflation. In 1981/82 particularly acute conflicts emerged. In these years both monetary and fiscal policy became easier despite the external weaknesses.

Over the entire period, faced with difficult domestic and external situations, France, as noted, has also made extensive use of "substitution" measures and foreign exchange intervention. From 1973 to mid-1974, to avoid placing too heavy a burden on monetary policy, external adjustment was, partly at least, dealt with by other devices, including a change in the exchange rate, sharp increases in "external" interest rates, restrictions on outflows, and the abolition of reserve

requirements on nonresident deposits. There was, as well, some intervention and some compensatory borrowing. In 1976, faced with external pressures, in addition to the use of monetary, fiscal, and external interest rate policy, exchange controls were tightened, capital inflows were encouraged, and exchange rates were also allowed to bear some of the adjustment. At the same time there was some intervention in the foreign exchange markets. In 1980 in an effort to relieve the external pressures reserve requirements on nonresident deposits were reintroduced and exchange controls tightened. In 1981 when the franc was very weak these measures were reversed. In both 1980 and 1981 there was some exchange rate adjustment and considerable intervention in foreign exchange markets.

I. Money and Credit Targeting in France

1. *Introduction*

From 1973 to 1977 the French authorities announced targets only for the growth in bank credit. It is known, however, that over those years the authorities were also concerned over money growth. It is, therefore, difficult to decide to what degree bank credit was the intermediate target for monetary policy and to what degree it was an instrument used to achieve a broad money aggregate M_2. Whatever the position prior to 1977, from 1977 on the authorities began announcing targets in the growth of M_2, to which they now paid greater attention. [4] Until 1982, this target was expressed as a single figure; for 1982, however, a range of 1.5 percentage points was used.

The French system of monetary control is complicated. The French authorities have adopted a wide range of instruments to monitor the liquidity of the banking system. Amongst the more important instruments used for this purpose are reserve requirements on demand and time deposits held by residents and nonresidents, reserve requirements on credit and an open market intervention rate (at which the central

[4] Strictly, announcement of a money target came earlier. On October 2, 1975 the Government had announced that the rate of increase in money supply in 1976 would be restricted to 13 per cent.

bank will buy — at their discretion — certain financial instruments from the banking system). [5] The authorities have also continued since 1977 to use credit ceilings, but now as a means of achieving their money target. Thus, liquidity is monitored in a way which will be consistent with both the money and credit objectives.

The authorities also have control over interest rates paid by banks on deposits below 500,000 francs, but the interest rate on lending is, in principle, free. In practice, however, the lending rate is informally set, by agreement on the part of the banks and the Government, on the basis of interest rates payable on deposits and the costs of refinancing at the margin (the last is essentially the inter-bank rate which itself is closely linked with the intervention rate).

An important feature of the French banking system is that the market for bank credit is not an equilibrium market. One the one hand, credit ceilings have meant that the banks are not free to determine their optimal supply of credit at the given prevailing interest rates; on the other hand, at the given (constrained) supply of credit, there is certain to be an excess demand for bank credit. Since, as we will note shortly, there are limited substitutes for bank credit outside the banking system, this means that the excess demand remains unsatisfied. In other words, credit rationing is in operation. This also means that the dominant monetary influence on expenditure is not the interest rate, which tends to be rigid, but rather the available supply of credit or money in the economy. Money and credit, therefore, directly influence expenditure rather than indirectly through the interest rate. [6]

The authorities have, as well, tried to influence the structure of interest rates to achieve external and domestic objectives, e.g., using the intervention rate as well as reserve requirements on nonresident deposits (with its implications for interest rates on nonresident deposits) to achieve external ends and the deposit-lending rates together with credit controls to achieve domestic ends. (See later section.)

[5] There is also a rediscount rate, but for some years now the intervention rate has been set below the rediscount rate, so it has become much more relevant as a source of funds to the banks than the rediscount rate. With discounting becoming less important the use of discount ceilings was also discontinued in early 1972.

[6] See CHOURAQUI (1981). To quote Chouraqui (p. 209) "As regards the transmission mechanism econometric studies suggest that policy effects relate primarily to changes in the availability of bank credit".

2. *Experience with credit ceilings*

In December 1972, as part of an anti-inflation drive, the authorities introduced a new system of targeting credit. [7] They announced a target for the first six months of 1973 for the growth of private sector credit. At the same time, progressive penalties in the form of supplementary reserve requirements were imposed for noncompliance.

Selectivity has been applied in the administration of the scheme. Certain types of lenders (e.g., the smaller banks) have been favored; at the same time certain categories of lending (e.g., those for energy, exports and social housing) have been exempt from supplementary reserve requirements and have as well been subject to lower reserve requirements. These exempt credit categories have comprised some one quarter of the total credit.

There have been several technical changes in the way in which credit ceilings have been administered. Two of the more important ones should be mentioned. In December 1974 permission was given to banks to carry forward, up to a maximum period of six months, credit previously unutilized. [8] In 1980, as a means of containing uncontrolled credit (which had gotten out of hand during 1979) a weighting system was introduced whereby favored lending carried a lower (but policy adjusted) weight than ordinary loans in the credit limits, e.g. they may be valued at say 40 per cent of the ordinary loans when calculating these credits. [9]

There appears to be a widespread conviction that credit ceilings in France in the last decade have worked reasonably well and have been effective. [10] The reasons for this are not hard to identify. First, in part because of penalties for overshooting and implicit penalties for undershooting, credit ceilings have tended to be met. The principal problem in the past has been the component of bank credit which has been uncontrolled; however, with refinements introduced in 1980 some of this is now being more closely monitored. Second, bank credit in France remains an important source of funds, at least compared with Anglo-

[7] The use of direct credit controls has a long history in France. They were first used in 1958-59, in 1963-65, and in 1968-70.

[8] Since the base for the calculation of the norm is the actual credit extended there is an implicit penalty for undershooting.

[9] Some favored lending remains totally exempt, i.e., effectively carries a zero weight.

[10] GALBRAITH (1982).

Saxon countries. This is so because the capital market is still relatively underdeveloped and tightly controlled. Credit from other financial institutions is regulated; moreover, the interest rate on bonds is controlled, so this last market is rationed. Trade credit, in fact, remains one of the few sources of credit more or less outside official control. Thus, in essence, success has come because the financial sector is over-regulated. [11]

Yet, interestingly, when credit ceilings were used in the late 1960s (1969-70) some difficulties were then encountered; some of these were reminiscent of the problems the United Kingdom had years later with the corset. [12]

We can conclude then, that the authorities were able to learn from the experience of the late 1960s and have been able, more recently, to minimize the difficulties associated with the operation of credit ceilings. [13] This, however, is not to say that the difficulties have disappeared. [14] The system remains very rigid and there is now a lively debate between those who wish to liberalize the system and those who see merits in retaining extensive controls.

3. *Money targeting — setting and control*

The M_2, which the authorities choose to target, includes all foreign currency deposits, whether held by residents or nonresidents, as well as deposits held by nonresidents in francs. This differs from the IMF definition of M_2 (money and quasi-money) which excludes all of these deposits (Table 1).

There are two questions to be dealt with here. First, how the French try to control their target growth in M_2. Second how they set it.

To understand the first we need to go back to the components of the money stock.

[11] This is the conclusion of a forthcoming study of financial innovations by Christian de Boissieu (verbally communicated to the author).

[12] See ARGY (1939b), OECD (74). The difference between the corset and the French credit ceilings is that in the former case penalties applied not to excessive credit extended but to excessive growth of certain interest bearing liabilities.

[13] For example, *face-à-face* operations are now prohibited.

[14] Trade credit remains a small problem. Another potential offset is "foreign currency" lending by banks to residents.

Notation used

M_2	=	Money and quasi-money (national definition), which includes nonresident holdings of deposits in francs and all foreign currency deposits in French banks
CUR	=	Currency
BC	=	Bank cash
TC	=	Total credit including nonmonetary credit
BCP	=	Bank credit to private sector
TNC	=	Credit outside of the banking system (i.e., non-monetary credit)
BCG	=	Bank credit to government
CGT	=	Total credit to government (including Central Bank)
RD	=	Resident deposits in francs
RDFC	=	Resident holdings of foreign currency deposits (converted into francs)
FD	=	Nonresident deposits in francs and in foreign currency (converted into francs)
BFC	=	bank holdings of foreign currency assets (converted into francs)
BCF	=	Bank lending to nonresidents in francs
LCB	=	Borrowings from Central Bank
CBCG	=	Central Bank lending to government
CBCB	=	Central Bank lending to banks
NFA	=	Net foreign assets of Central Bank

The definition of the change in money is:

(1) $\Delta M_2 = \Delta CUR + [\Delta RD + \Delta FD + \Delta RDFC]$

The change in the banks' balance sheet is:

(2) $[\Delta RD + \Delta FD + \Delta RDFC] + \Delta LCB = \Delta BC + \Delta BCP + \Delta BCG + \Delta BCF + \Delta BFC$

Rearranging (2) and substituting in (1) gives:

(3) $\Delta M_2 = [\Delta CUR + \Delta BC] + \Delta BCP + \Delta BFC + \Delta BCG + \Delta BCF - \Delta LCB$

The change in the Central Bank's balance sheet is:

(4) $[\Delta CUR + \Delta BC] = \Delta CBCG + \Delta CBCB + \Delta NFA$

Substituting (4) into (3) and dividing through by the initial stock of M_2 (M_{2-1}) yields:

(5) $$\frac{\Delta M_2}{M_{2\text{-}1}} = \frac{[\Delta BCP]}{M_{2\text{-}1}} + \frac{[\Delta BCG + \Delta CBCG]}{M_{2\text{-}1}} + \frac{[\Delta BCF + \Delta BFC + \Delta NFA]}{M_{2\text{-}1}}$$

where the first bracketed expression is the contribution to money growth from the change in credit to the private sector, the second is the contribution from the change in credit to the government and the third is the contribution from the change in the net foreign assets of the banking system. [15]

It is convenient at this point to rearrange and extend expression (5) to bring it more into line with the French presentation and French thinking about money targeting. First the credit which the authorities control includes credit from financial institutions (Savings Banks and the National Energy Fund) whose deposits are not included in M_2. We can then write:

(6) $\Delta TC = \Delta BCP + \Delta TNC$

It is also convenient (and simplifying a little) to break down the total of credit into a component which is controlled (ΔTCC) and a component which is left uncontrolled (ΔTCU); we then have

(7) $\Delta BCP = \Delta TCC + \Delta TCU - \Delta TNC$

Second the French present the counterparts of money in a way which differs in principle from the IMF. The "external component" is the change in the net foreign assets of the Central Bank. Bank credit to nonresidents is included in the total of credit to the private sector. Leftovers (including items not included above) are collected under the term "other items", which is very small.

[15] Since the IMF definition of broad money is different from the French, it follows that the IMF derivation of equation 5 would differ from it in that the last component would also accommodate other net foreign assets of the banking system ($\Delta FD + \Delta RDFC$).

Taking all of this into account, we can now derive the following expression.

$$(8)\quad \frac{\Delta M_2}{M_{2-1}} = \frac{\Delta TCC + \Delta TCU - \Delta TNC + \Delta BCF}{M_{2-1}} + \frac{\Delta BFC}{M_{2-1}} + \frac{\Delta BCG + \Delta CBCG}{M_{2-1}} + \frac{\Delta NFA}{M_{2-1}}$$

An alternative way to present this is:

$$(9)\quad \frac{\Delta M_2}{M_{2-1}} = \frac{(TCC_{-1})\ \Delta TCC}{(M_{2-1})\ TCC_{-1}} + \frac{(TCU_{-1})\ \Delta TCU}{(M_{2-1})\ TCU_{-1}} - \frac{(TNC_{-1})\ \Delta TNC}{(M_{2-1})\ TNC_{-1}} + \frac{(BCF_{-1})\ \Delta BCF}{(M_{2-1})\ BCF_{-1}} + \frac{(BFC_{-1})\ \Delta BFC}{(M_{2-1})\ BFC_{-1}} + \frac{(CGT_{-1}\ \Delta BCG + \Delta CBCG}{(M_{2-1})\ CGT_{-1}} + \frac{(NFA_{-1})\ \Delta NFA}{(M_{2-1})\ NFA_{-1}}$$

Equations (8) and (9) form the basis for projections of the money counterparts and for the control of the growth of M_2. Consider equation (9). To simplify we disregard the ΔBCF and indeed all "other items". To achieve a given targeted growth of M_2 the authorities need to make a projection of ΔNFA (the amount of intervention on the foreign exchange market), of the amount of the budget decifit which will be financed by monetary means and of the uncontrolled credit. Given these and given too the targeted growth of M_2 the required per cent change in credit controlled can easily be derived. Exactly how the projections are made and how reconciliation is in the end achieved remains uncertain. [16]

The difference between (8) and (9) is that (8) gives the direct contribution of each component to money growth while (9) gives the rates of change in each component adjusted by their respective weights. The required per cent change in bank credit can of course also easily be derived by a parallel transformation of (7).

The actual outcomes for money growth were not too different from those targeted. Indeed, if one allows for statistical aberrations the correspondence is even closer. The largest error was in 1979 when uncontrolled credit grew much more rapidly than had been projected. Projections from credit to government and net foreign assets have turned out to be fairly accurate.

[16] In practice a distinction is made between credit from small, large banks, and the nonbank institutions, with different credit growth targets applying to each of these three categories.

We turn now to the question of how the money growth target is set. The overriding objective of the Barre administration (August 1976 - May 1981) was to contain inflation. It saw the containment of money growth as an essential element in this task. The growth of money was also to be brought down gradually, so another objective of monetary policy was to stabilize money growth.

With these objectives in mind the authorities set a money growth target which would be consistent with the desired longer run rate of inflation, the real growth rate anticipated in the year and the expected change in velocity.

4. *Some brief comments on the choice of intermediate target*

There are two issues of importance in this context. First the choice of a particular money aggregate. Second, the choice of a money aggregate as against a credit aggregate, i.e., the appropriateness of the switch in 1977.

The French authorities chose to define their money target to include not only resident holdings of foreign currency deposits in France but, as well, nonresident holdings of both franc deposits and foreign currency deposits located in France. This raises important issues about the appropriateness of including such deposits, particularly those held by nonresidents in a money aggregate intended to be used as a stabilizer for domestic expenditure. These complex issues will not be taken up here as they are outside the scope of the paper. [17]

As a practical matter, however, it is worth noting that in December 1981, for example, these deposits represented some 6.5 per cent of the total stock of M_2, so they were not insignificant. Nonetheless, as it turns out, the trend in the growth of M_2 (national definition) has not been very different from that of the growth of M_2 (IMF definition, which excludes those deposits) (Table 1).

The second question has been dealt with extensively in the literature, notably in IMF studies. [18] The issue turns around whether M_2 as defined by the French is preferred to "credit" (French definition) as an intermediate target.

[17] For a good discussion of the issues here see BRYANT (1980), Chapters 3, 4 and 6. See also ARGY (1983c).

[18] See, for example, POLAK and ARGY (1971), GUITIAN (1973), DAY (1979).

In this context, it is convenient to assume that the authorities are able to monitor uncontrolled credit, credit to the government and the banks' foreign asset positions. Then the difference between credit and M_2 is simply that the latter assumes that unanticipated changes in the balance of payments are sterilized while the former assumes that these are monetized.

On this basis, then, what are the more substantive differences between the two intermediate targets? Without going into all the details, it is easy to demonstrate that credit is the superior stabilizer for the balance of payments but M_2 is likely to be the superior stabilizer for output and prices. To illustrate, suppose capital mobility were high (but not perfect). For unanticipated increases in expenditure (of domestic origin) credit will be relatively destabilizing because the excess demand for money will attract sufficient capital to inflate the money supply on balance. Credit will also be inferior in the face of unanticipated fluctuations in foreign interest rates; now money supply will be allowed to adjust as inflows or outflows occurred, while with M_2 these flows would be sterilized. By contrast, credit is the superior stabilizer for unanticipated fluctuations in the demand for money because these will now be, partially at least, accommodated.

II. Choice of Instruments to Achieve Proximate Objectives of Policy

1. *Introduction*

We argued in the introduction that, at least since 1977, and possibly earlier, the French authorities appear to have had four proximate targets for policy; (a) a money target, (b) an exchange rate target, (c) a reserve target, (d) a "domestic" interest rate target.

Is it possible to reconcile these targets? To evaluate this briefly, we consider the case, most appropriate to France, where capital markets and interest rates are regulated and, as well, there is imperfect substitution of domestic and foreign assets.

Suppose that the authorities are faced with some unemployment and at the same time there is some pressure on the currency. Under

what conditions would the French authorities be able to achieve all of the above targets at one and the same time?

In developing the analysis we make the following assumptions.

1. The market for bank credit is rationed and there is an excess demand for credit, which is not accommodated outside of the banking system.

2. The monetary authorities determine the intervention rate. This in turn is linked to the inter-bank rate, which represents the marginal cost of finance.

3. The monetary authorities also determine the interest rate on resident time deposits.

4. Resident non-banks' short-term borrowing and lending is subject to exchange control. This is consistent with (1) above, otherwise there would be no excess demand persisting.

5. Banks' borrowing and lending in foreign currency are determined by the difference between the interbank rate and the Euro-dollar rate (to select one foreign rate).

At the same time, nonresident holdings of deposits in francs will be determined by the interest rate offered on nonresident time deposits, which we assume to be free.

6. The interest rate on lending, as we have seen, is normally set by agreement and is determined by the interest rate on time deposits and the marginal cost of finance.

7. Credit extended by the banking system is largely controlled by the authorities. The banks, too, will not wish to undershoot their credit target.

Consider now how the authorities might proceed. First, they are assumed to maintain the credit and money targets. Second, they raise the intervention rate. Third, they either keep the deposit rate unchanged or raise it by much less than the intervention rate. Fourth, reserve requirements (if any) on nonresident deposits are removed. This allows the banks to offer a higher interest rate on nonresident deposits than on resident deposits. Finally, the lending rate will rise but by much less than the intervention rate. [19] At the same time, since the market for

[19] Or the lending rate could be subsidized or held down so the adjustment falls on profits.

credit is rationed, all that happens is that the excess demand for credit falls.

The key question is whether the higher intervention rate combined with the higher interest rate on nonresident deposits will be sufficient to counter the pressures on the currency. [20] To the extent that it is able to do this then the exchange rate, reserves and the volume of money will all have been stabilized. At the same time, the adjustment in the relevant domestic interest rate is minimized.

However, as we have already noted, when the pressures on the currency are severe it will not be possible to achieve all of these objectives. In other words, it is possible to shelter the domestic market but only to a very limited extent.

III. Economic Activity and Inflation (1973-81)

1. *Economic activity*

Table 2 sets out the principal demand influences on economic activity over the years 1973-81. [21] It also shows the trend in the real wage gap over the same period.

1975 is the first full year when economic activity fell sharply. This can be explained by the continuing direct effect on expenditure of the oil price shock of 1974, the substantial loss of competitiveness in that year and the sharp turnaround in real foreign demand. In that year, monetary and fiscal impulses were supportive, acting in effect against these trends.

In 1976, real growth was substantial. In the year as a whole, money growth accelerated. At the same time the rate of inflation fell sharply, so the growth in real money balances rose substantially. This was reinforced by a sharp recovery in the growth in real foreign demand.

[20] It needs to be noted that even if the rate is raised so as to offset banks' incentives to move capital, there will be some nonbank outflows. These will need to be sterilized, but some reserve movement will be unavoidable.

[21] Strictly, current activity is affected not only by current demand influences but, as well, by these influences lagged. This is how the table should be read.

For the analysis underlying this Table see ARGY (1981), Chapter 18.

TABLE 2

FRANCE: PRINCIPAL DEMAND INFLUENCES ON ECONOMIC ACTIVITY AND REAL WAGE GAP

	1973	1974[1]	1975	1976	1977	1978	1979[1]	1980	1981
Percentage change in real money balances (M_2)[2]	7.2	2.3	4.7	7.7	3.0	4.1	2.6	– 1.7	– 0.7
Fiscal impact (IMF)	– 0.3	– 0.3	1.6	– 1.1	0.2	1.0	– 1.3	– 1.7	2.0
Percentage change in real effective rate (unit labor costs) (IMF)	4.8	– 7.0	13.7	– 1.9	– 5.7	– 0.4	4.8	3.3	– 6.6
Percentage change in real foreign demand									
Real GDP (industrial countries)	6.2	0.6	– 0.5	4.9	4.0	4.0	3.6	1.3	1.2
Trade-weighted import volume (IMF)	14.7	12.4	1.4	10.7	5.2	6.2	7.2	7.0	4.5
Domestic activity									
percentage change in real GDP	5.4	3.2	0.2	5.2	3.1	3.7	3.5	1.2	0.8
Unemployment rate	2.6	2.8	4.1	4.4	4.7	5.2	5.9	6.3	8.1
Output gap (IMF)	1.2	0.6	– 7.7	– 4.6	– 4.8	– 6.1	– 7.2	–11.8	–17.1
Real wage gap[3] 1975 = 100 (index)	97	99	100	100	100	101	101	99	98
1972 = 100 (OECD calculations)[4]	101.5	104.6	106.8	104.4	105.3	104.4	102.6	105.1	106.7

[1] Direct oil price shock.
[2] Year-on-year — French definition of M_2 — money growth less rate of inflation.
[3] Unit labor costs (normalized) divided by value-added deflator in manufacturing.
[4] OECD World Economic Outlook. Total compensation per head divided by private consumption deflator divided by real national income per employed person.

It is interesting to compare the effects of and reactions to the first and second oil price shocks. In both, there was a direct negative expenditure effect; in both cases, too, there were cost/push effects on inflation. In 1979-80 money growth slowed down in the face of rising inflation while in 1974-75 there was some acceleration in money growth; at the same time, fiscal policy was on balance supportive in 1974-75 but restrictive in 1979-80. So, in 1979-80, monetary fiscal impulses reinforced the deflationary effects of the oil shock but in 1974-75 these impulses were offsetting.

The sharp collapse in economic activity in 1981 can be explained, principally, in terms of the negative growth in real money balances and the slowing down in world demand. Fiscal policy in 1981 acted to partially offset these trends.

Whilst, then, it is not difficult to account for trends in activity in terms of real demand influences, it is more difficult to explain the stagnation since 1975 in terms of an excessive real wage gap, at least in manufacturing. Between 1975 and 1981 the real wage gap, however defined, hardly changed at all yet unemployment rose very sharply. Thus, classical considerations have not been important in France in explaining the more recent trends in unemployment.

2. *Money growth and inflation*

Table 1 shows the trends in money growth and the lagged rate of inflation for the years 1972 to 1981.

There are several striking features of the Table. First, the trend in money growth is very similar for the four definitions of money. There is, thus, in France, no serious problem of selecting the best indicator of the thrust of the monetary sector.[22] Second, there is also little variation in money growth from year to year, particularly from 1977. Money growth has, therefore, been reasonably stable over the period. Third, there appears to be no relationship between money growth and inflation (however lagged).

Consider the relationship between money growth and the inflation rate lagged two years. It is true that the fall in money growth in 1973 is

[22] This is in sharp contrast to recent experience in some Anglo-Saxon countries, notably the UK, the US and Canada.

"reflected" in a fall in the inflation rate in 1975; however, over the next three years, money growth accelerated but the rate of inflation fell. Moreover, there was a further significant fall in money growth in 1977-79 but the rate of inflation accelerated further.

The reason for the weak relationship is not hard to identify. Because money growth has been fairly stable the rate of inflation has been dominated by cost-push influences. These include changes in world prices (notably here the two oil price shocks, in 1974-75 and 1979-80) the price control/decontrol programs and changes in the value added tax (notably in 1977).

These general conclusions are confirmed by a simple regression for the years 1965-81 which tries to explain the rate of inflation (P) by current or lagged money growth (IMF definition M_2) the change in the per cent change in import prices in francs (ΔIMP)[23] and the lagged dependent variable.

Money growth was not significant, whether the current or the lagged value was used.[24] However, the change in import prices was significant. The result was:

$$P = \underset{(0.12)}{-0.19} + \underset{(0.69)}{0.08M_{2t-1}} + \underset{(3.4)}{0.08\Delta IMP} + \underset{(8.6)}{0.95P_{t-1}}$$

$$\bar{R}^2 = 0.84 \text{ h statistic } 0.36$$

(t ratios shown in brackets)

IV. A Simple Econometric Analysis of the Franc-Dollar Rate

The starting point for the analysis is the interest parity condition which we assume holds as an approximation.[25] We also disregard risk aversion considerations. We then have (approximately)

[23] The change in the per cent change in import prices was used to reflect the fact that, if money growth is given a higher rate of change in import prices cannot permanently affect the rate of inflation.

[24] Several variations were used but in none was money growth significant.

[25] For a parallel analysis for Germany see ARGY and SEMUDRAM (1981). See also ISARD (1980).

$$(1) \quad r - rf = \log Ee - \log E$$

r and rf are the French three-month interbank rate and the three-month Euro-dollar rate, respectively. E is the exchange rate expressed as units of francs per dollar and Ee is the expected exchange rate.

To obtain an equation which can be estimated we need to explain the expected exchange rate.

We suppose that the expected real exchange rate is a function of the expected interest rate differential, the expected relative current account, and the real exchange rate (Er), lagged one period. We have then:

$$(2) \quad [\log Ee - \log ({}^{Pd}/_{Pf})_e] = -\alpha_1 \log \left[\frac{X/MFR}{X/Mus}\right]_e - \alpha_2' (r-rf)_e + \alpha_3 \log Er_{-1}$$

where the first expression on the R.H.S. is the relative export/import ratio in the two countries.

If we proxy all expected values, other than the expected exchange rate, by current values, substitute into (1), we obtain the following equation:

$$(3) \quad \log Er = -\alpha_i \log \left[\frac{X/MFR}{X/Mus}\right] - (1 + \alpha_2)(r-rf) + \alpha_3 \log Er_{-1}$$

Equation (3) was estimated in this form.[26] The result obtained for quarterly data for the period 1974 (2) to 1981 (4) was:

$$(4) \quad \log Er = \underset{(0.72)}{0.035} - \underset{(-1.97)}{0.0021}\,(r-rf)^{27} - \underset{(-3.46)}{0.25} \log \left[\frac{X/MFR}{X/Mus}\right] + \underset{(13.2)}{0.96} \log Er_{-1}$$

$$\bar{R}^2 = 0.86 \text{ h statistic } 1.33$$

(t ratios shown in brackets)

The estimated equation is fairly satisfactory. The interest rate differential and the export/import ratios have the right sign. Close to 90 per cent of the real exchange rate movement is explained by the equation.

[26] An alternative equation was estimated for the log of the nominal rate using the following independent variables: (1) the log of relative prices, (2) the interest rate differential, (3) France's export/import ratio, (4) the United States' export/import ratio, (5) the lagged dependent variable. It, however, performed very poorly.

[27] Close to significant at 5 per cent.

V. Policy Mixes and Internal-External Balance - The French Experience

We illustrate in this section the points made earlier about policy mixes in the face of internal and external disequilibria.

Internal objectives refer to the containment of both inflation and unemployment. When, however, a country is faced with both inflation and unemployment, there is, in principle, a problem in determining how to define internal disequilibria. Our own resolution of this difficulty is fairly simple. We focus on the target to which the authorities themselves attach priority. In other words, if, faced with unemployment and inflation, the authorities give priority to the fight against inflation, then "inflation" becomes the internal imbalance. Of course, in reality policy decisions and priorities are not quite that clear-cut; nevertheless, this is not an unreasonable way to proceed.

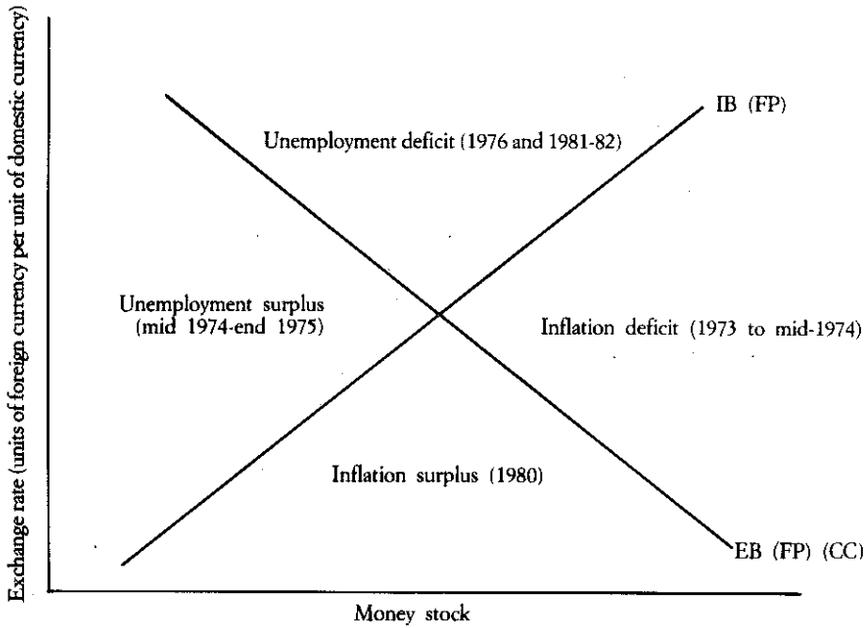
We now try to represent very simply in a figure the policy choices in the face of different combinations of internal and external disequilibria. Figure 1 shows how combinations of exchange rate adjustment and the money stock can secure internal (IB) and external (EB) balance. The IB schedule is positively sloped because an increase in the money stock will need to be offset by an exchange rate appreciation to maintain internal balance. The EB schedule, however, is negatively sloped because now an increase in the money stock requires a devaluation to maintain external balance.

Four quadrants are identified, representing four different combinations of internal and external imbalances. As shown, France has found herself in each of these quadrants at various times between 1973 and 1981.

France has also used fiscal policy (FP) and exchange-capital controls (CC) to secure internal-external balance. Consider first the use of fiscal policy. An expansionary fiscal policy will shift the IB schedule to the left because to maintain internal balance the money supply must fall and/or the exchange rate has to appreciate. At the same time, the direction of the shift in the EB schedule is ambiguous. Fiscal expansion may either improve or worsen the external position depending on how mobile capital is. If capital is relatively mobile, fiscal expansion will attract enough capital to more than offset any emerging current account deficit. Assuming this is the more realistic case, the EB schedule will shift to the right because now monetary expansion and/or a revaluation

FIGURE 1

POLICY CHOICES FOR INTERNAL-EXTERNAL BALANCE - FRANCE (1973-81)

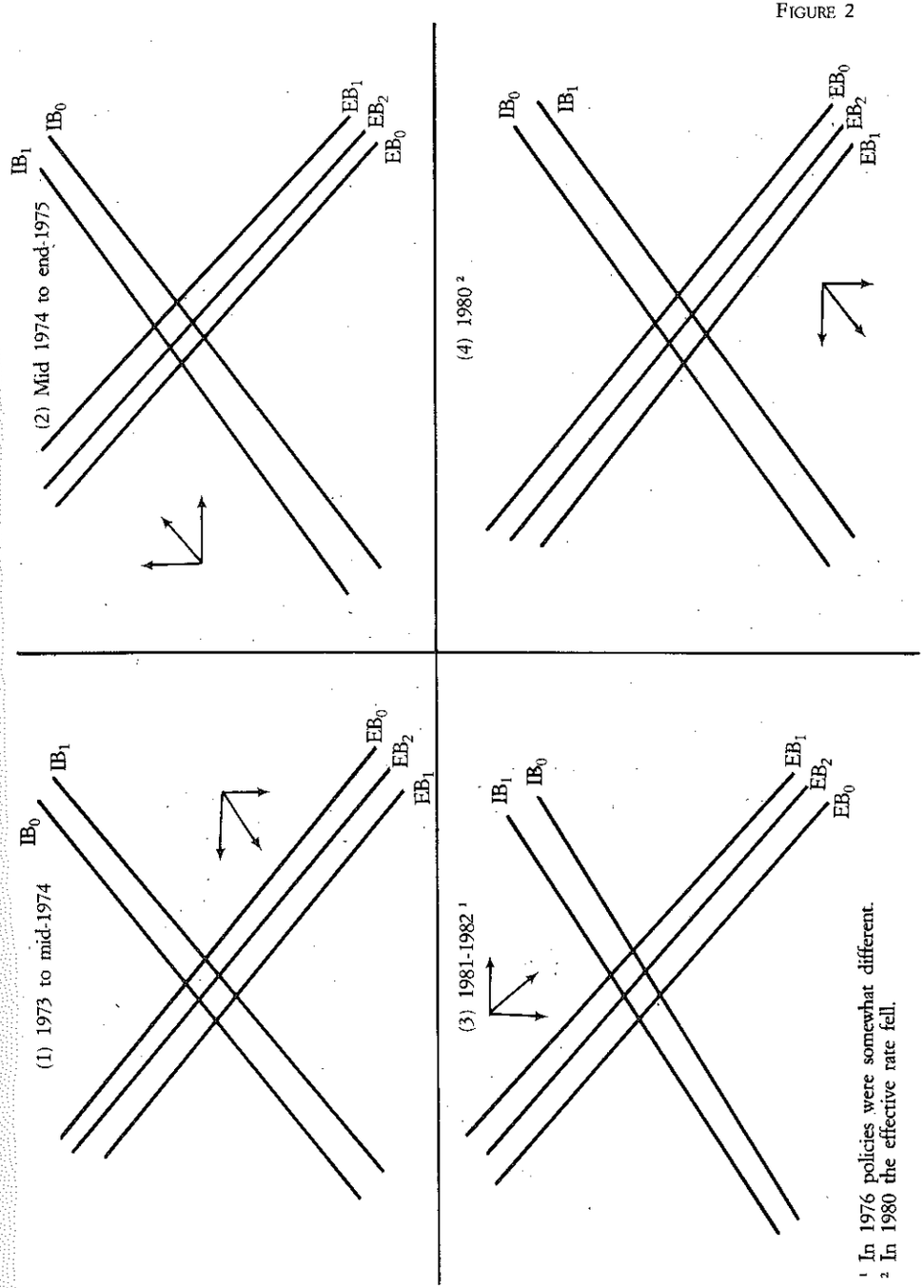


would be needed to maintain external balance. Changes in exchange-capital controls will also shift the EB schedule but we assume that the IB schedule is unaffected.

Figure 2 shows the policy mixes actually adopted in relation to the disequilibria for select periods. Capital-exchange controls are also allowed for but they are assumed to be insufficient to offset the fiscal effects on external balance. It is also assumed that capital is relatively mobile.

From 1973 to mid-1974 the policy mixes adopted almost certainly pushed in the direction of external but probably, too, in the direction of internal balance. From mid-1974 to end-1975 the policy mixes again probably pushed in the direction of both internal and external balance. In 1981-82 the policies unambiguously pushed in the direction of internal balance but it is not clear what they did to external balance. In

FIGURE 2



[1] In 1976 policies were somewhat different.
[2] In 1980 the effective rate fell.

1980 the policies probably improved internal balance but almost certainly worsened external balance.

Needless to say, this discussion does not imply anything about the general appropriateness of the policies pursued either for the short run or for the long run. The issues here are much more complex and are not pursued.

North Ryde, N.S.W.

VICTOR ARGY

REFERENCES

AFTALION, F. (1981), "The Political Economy of the French Monetary Policy", prepared for the Research Planning Conference on the Political Economy of Monetary Policy in Western Europe, University of Illinois, Urbana, Champaign, November 18-20.

ARGY, V. (1981), *The Postwar International Money Crisis: An Analysis*, George Allen & Unwin, London.

ARGY, V. (1982), *Exchange-Rate Management in Theory and Practice*, Princeton Study in International Finance No. 50, International Finance Section, Department of Economics, Princeton University, October.

ARGY, V. (1983a), "The West German Experience with Monetary and Exchange Rate Management: 1973 to 1981".

ARGY, V. (1983b), "The United Kingdom's Experience with Monetary and Exchange Rate Management: 1972 to 1981".

ARGY, V. (1983c), "Choice of Intermediate Money Target in a Deregulated and an Integrated Economy with Flexible Exchange Rates", *International Monetary Fund Staff Papers*, December.

ARGY, V. and SEMUDRAM, M. (1981), "Test of a Simple Model of the Determination of the Effective Exchange Rate for the Mark (March 1973 to December 1979)", *Empirical Economics*, Vol. 6, Issue 3, pp. 163-171.

BLACK, S.W. (1977), *Floating Exchange Rates and National Economic Policy*, Yale University Press, New Haven, London.

BOURGUINAT, H. (1980), "La Nouvelle Politique Financière et Monétarie de la France (1976-1979)", report prepared for the conference on *La Politique Economique de la France* of the American Enterprise Institute, Washington 29-30 May.

BRYANT, R. (1980), *Money and Monetary Policy in Interdependent Nations*, Brookings Institution, Washington.

CHOURAQUI, J. C. (1981), "Monetary Policy and Economic Activity in France", in A. Courakis (ed.), *Inflation, Depression and Economic Activity in the West*, Barnes and Nobel, New Jersey.

DAY, W.H. (1979), "Domestic Credit and Money Ceilings Under Alternative Exchange Rate Regimes", *International Monetary Fund Staff Papers*, September.

DE BOISSIEU, C. (1982), "Formation et rôle des taux d'intérêt: un essai de mise en perspective", *Economica*.

DE LA GENIERE, M. (1981), "La Politique Monétaire Française", *Banque de France Bulletin Trimestriel*, March.

FEDERAL RESERVE BANK OF NEW YORK (1979), "Treasury and Federal Reserve Foreign Exchange Operations", *Quarterly Review*, 4, Autumn.

GALBRAITH, J. (1982), "Monetary Policy in France", *Journal of Post-Keynesian Economics*.

GUITIAN, M. (1972), "Credit Versus Money as an Instrument of Control", *International Monetary Fund Staff Paper*, November.

ISARD, P. (1980), "Factors Determining Exchange Rates: The Roles of Relative Price Levels, Balances of Payments, Interest Rates and Risk", *BIS Working Paper No. 4*, Bank for International Settlements, Monetary and Economic Department, September.

MELITZ, J. (1980), "The French Financial System: Mechanisms and Propositions of Reform", Paper prepared for the Conference on the *Political Economy of France* organised by the American Enterprise Institute, Washington, D.C., May 29-31.

MORGAN GUARANTY TRUST COMPANY OF NEW YORK, *World Financial Markets*, November 1979.

OECD (1974), "Monetary Policy in France", *Monetary Studies Series*.

POLAK, J.J. and ARGY, V. (1971), "Credit Policy and the Balance of Payments", *International Monetary Fund Staff Papers*, Vol. XVIII, No. 1, March, pp. 1-24.

THERON, M. (1978), "La Politique Monétarie Française au Cours Des Dix Dernières Années", *Kredit Und Kapital*, No. 1.