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From Direct to Indirect Monetary Policy Instruments
The French Experience Reconsidered

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Abstract

If not carefully planned, the transition to indirect monetary policy instruments may result in a loss of control. The 1967-71 attempt in France failed because of a misconceived instrument-mix and sequencing. Credit controls, reintroduced in 1972, were only formally abolished in 1987. This paper attributes the successful 1987 reform to changes in the policy framework in the 1980s. The interest rate was already the key instrument because direct controls became less effective and because of the priority given to the exchange rate objective. Consequently, the 1987 transition was from *pegging* to *guiding* the interest rates. Empirical evidence underpins this interpretation.

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Summary

France has undertaken two initiatives to adopt a market-based monetary policy approach. The first attempt failed; the second was a success. This paper identifies factors that contributed to these results. It argues that the first attempt (1967-71) failed for two reasons. First, the mix of instruments was ineffective. Reserve requirements were used to support interest rate management; yet, open-ended refinancing facilities greatly reduced their effectiveness. Second, flexible interest rate management was hampered by the vulnerability of the French financial sector to significant interest rate increases. This vulnerability, in turn, was the result of the segmented nature of the financial sector and its permanent indebtedness to the central bank. In 1972, the authorities reverted to direct controls (*encadrement du crédit*), a framework that was replaced only by full-fledged indirect policies in 1987.

The paper offers a reinterpretation of the events leading to the smooth 1987 transition to indirect mechanisms. It argues that since 1979-80, the policy framework had gradually become market-oriented. Credit controls were increasingly losing their effectiveness during the early 1980s, because of the system's self-destructive features and because of disintermediation caused by financial market liberalization.

Furthermore, the 1979 shift to a dual intermediate-target system gradually resulted in the exchange rate becoming the principal target. That money became endogenized and the interest rate became the key instrument were related developments. Within that framework, the central bank gradually developed its money market intervention techniques (repurchase arrangements and outright purchases of government paper), and the financial sector became familiar with these techniques. Therefore, the 1987 transition was not from a direct to an indirect policy framework, but from a system of pegging to one of guiding the interest rates.

A small econometric model illustrates several of these points. The interest rate equation points to the overriding importance of the exchange rate and the absence of money growth considerations in the policy setting. The equation specifying demand for debt by the private nonfinancial sector reveals no significant shifts that could be attributed to the abolition of credit controls, thus confirming their minor role in the 1980s. Finally, the money demand equation, allowing an explicit role for gross wealth, reveals neither a supply effect stemming from credit controls nor instability around the time of the 1987 reforms.

I. Introduction

Many countries are now engaged in a transition from direct to indirect instruments of monetary policy. If not carefully planned, this transition may result in a loss of monetary control, forcing the authorities to revert to direct controls. One striking example in this respect is the British experience after the introduction of Competition and Credit Control (1971) which, among other things, abolished direct credit controls. Rapid monetary growth in the following period forced the Bank of England to reintroduce in 1973 some forms of direct control (the "Supplementary Special Scheme" or "Corset"), an action that delayed the transition to a full fledged market-oriented system significantly.

Perhaps the French experience is less well-known but quite relevant to the study of transition periods of the type mentioned above. As early as 1967, the French authorities tried to replace the prevailing policy framework by a more market-oriented system. This transition, however, turned out to be premature because the new framework failed to control inflation. As a result, the authorities reverted to the use of direct controls, first temporarily in 1970-71 and on a permanent basis since 1972. Fourteen years elapsed before these direct controls were formally replaced by a fully market-based system. Since 1987, indirect mechanisms have prevailed and they seem to function satisfactorily.

The objective of the present paper is to identify factors which may have contributed to the failure and success of the French efforts to adopt a market-oriented policy approach. This analysis provides useful insights on the mechanisms behind transition processes and thus may help increase the "success rate" on similar liberalization experiments now underway in many developing countries.

The paper is organized as follows. Chapter II discusses the 1967 attempt. The subsequent chapters will concentrate on the period since 1972. Chapter III describes the policy framework and its reforms in the 1973-1987/89 period. Chapter IV attempts to shed some new light on the *de facto* functioning of the policy framework in that period, contrasting it with the common institutional presentation. This analysis will be underpinned by empirical evidence derived from a small model. The final chapter summarizes the major lessons to be drawn from the French experiments.

II. The Unsuccessful Attempt: 1967-71

1. Background

Throughout most of the 1950s, the public sector played a major part in the financing of the French economy, either directly through the government budget or through specialized credit institutions which received most of their funding via concessional borrowing from the Government. The

banking sector's business was restricted to short-term lending and financial markets were poorly developed.

The early 1960s marked a gradual but steady substitution of the banking sector for the budget as the major source of funding. Gradually, the banks became the dominant financial intermediaries. The main monetary policy instrument of the Banque de France (henceforth BdF) was *medium-term refinancing* at very favorable rates. 1/ With the exception of the first post-war years, when it was binding, this mechanism provided nearly unlimited access to central bank finance, because some types of credits were exempted from the ceilings, the ceilings were very often raised and additional refinancing could always take place at a higher rate. So, the central bank was a major source of credit to the economy. As a result, economic growth remained highly based on money creation and the inflation bias was prominent. For its part, the steady rise in bank lending led the political authorities--concerned about the proper financing of priority sectors--to introduce a host of selective measures. 2/

2. The 1967 reform 3/ 4/

Increasingly, the absence of well-developed financial markets was felt as a drawback, because of the growing role of the banks in the intermediation process. Thus, the 1967 reform was intended to lead to the creation of a large money market, allowing the use of monetary policy instruments similar to those used in the United States and the United Kingdom.

Two new instruments were introduced in 1967: *minimum reserve requirements* on the banks' liabilities and *a minimum portfolio of medium-term securities*. The latter requirement was introduced to prevent

1/ The expanding role of the banks in the financial system led the BdF to the introduction in 1960 of a new instrument, the *liquidity coefficient*, requiring the banks to invest 30 percent of their short-term liabilities in government paper and medium-term rediscountable credits. Because a large part of France's economic development was still funded through budgetary mechanisms, the banks indirectly helped funding the other credit institutions through this instrument. Another instrument, *mandatory investments in government paper* ("*bons du Trésor*"), in existence since 1956, required the banks to keep an arbitrarily determined amount of their deposits in government paper, and in fact pursued the same objective.

2/ Patat (1987d), e.g., reports that in 1978 there were 68 different subsidy schemes, amounting to 18 percent of gross fixed capital formation, and 65 schemes for lending at below market rates, which applied to 46 percent of total outstanding lending.

3/ This section draws mainly on Besnard and Redon (1985) and (1986).

4/ The appendix provides an overview of the monetary policy instrument-mix throughout the period 1960-89.

excessive refinancing in times of tight monetary policy. At the same time, the liquidity coefficient was abolished and the money market was opened to other nonbank financial institutions. 1/

The subsequent 1969 Marjolin-Sadrin-Wormser Report envisaged a thorough market-oriented reform of the financial sector and a further reform of the policy framework, aiming at the abolition of unlimited refinancing facilities. To that effect, the authorities took advantage in early 1971 of a worldwide decline in interest rates, and lowered the money market rate below the rediscount rate, which was no longer the central bank's leading interest rate. Later that year, individual rediscount ceilings were abolished and replaced by *one- and three-month repurchase arrangements* to be used at the commercial banks' discretion.

The experience with the new policy framework was highly disappointing as it proved to be ineffective in times of tight monetary policy. In 1968, the authorities tried to halt speculation against the French franc (FRF), stemming from excessive demand for credit, by raising both interest rates and reserve requirements. However, this strategy appeared to be ineffective and the BdF eventually had to tighten exchange restrictions and impose quantitative credit controls (November 1968-October 1970).

Shortly after the elimination of these credit controls, new problems emerged. This time the authorities greatly relied on raising reserve requirements to contain excessive demand for credit because the position of FRF was limiting the extent to which the interest rate could be raised. Again, this attempt failed and in the second quarter of 1971, additional reserve requirements were imposed on the banks' assets. They were substantially increased in 1972, and at the end of that year the first liberalization attempt came to a formal end with the adoption of credit ceilings (the "Encadrement du Crédit").

3. A short-lived liberalization

With hindsight, there were two major reasons for this failure: the *instrument-mix* was not appropriate and there was some *inconsistency* between the policy instruments and the functioning of the financial markets. Both aspects implicitly point to failures in the sequencing of the reforms. In addition, a lack of well-defined policy targets may also have been a problem. Monetary policy was not guided by any intermediate target; moreover, the range of final economic targets was wide and the government's emphasis shifted frequently from one objective to another.

In order to better understand this failure, three characteristics of the functioning of the financial sector need to be highlighted: the

1/ Insurance companies, pension funds, investment funds, and some large enterprises, together labeled "Entreprises Non Bancaires Admises au Marché Monétaire (ENBAMM)."

high degree of market segmentation, the permanent indebtedness of the sector toward the central bank and, as a consequence of the first feature, the very uneven distribution of this indebtedness. The central bank had high expectations with respect to a flexible and active use of reserve requirements to support interest rate management and, particularly, to complement domestic monetary policy actions at times when interest rate policy had to focus on the external balance.

The existence of open-ended rediscount facilities was a first factor substantially reducing the effectiveness of reserve requirements. Indeed, using reserve requirements to influence the banks' lending behavior presupposes limited access to the central banks' rediscount window. Without that, any increase in reserve requirements leads to additional refinancing with the central bank without any significant effect on the supply of credit to the private sector. The only possible effect could be an increase in the cost of credit as higher, noninterest-bearing reserve requirements imply higher costs for the banks. This rise in the cost of credit would only significantly affect bank lending when the demand for credit is interest elastic. However, according to Patat (1987a), the demand for credit was predominantly inelastic at that time. So this loss of efficacy may be attributed to an inappropriate instrument-mix.

The heterogeneity of the financial sector further reduced the effectiveness of required reserves. Reserve requirements on liabilities only affected a small fraction of the sector. During the period under review, the French financial sector included on the one hand a large number of institutions which had limited deposit bases but were quite important in terms of total lending. Many of them, the specialized institutions, were mainly funded through the public budget, while the others relied heavily on central bank refinancing and on the interbank market. Since these institutions were only minimally affected by changes in reserve requirements, the monetary authorities eventually decided to impose additional requirements on bank assets. On the other hand, those institutions with large deposit bases (large retail banks) were almost constantly in an excess liquidity position and were therefore hardly affected by any increase in reserve requirements.

The ineffectiveness of reserve requirements implied that the burden of domestic monetary adjustment fell entirely on interest rate management, whereas this instrument was in principle primarily assigned to exchange rate purposes. However, the functioning and structure of the financial sector further narrowed the central bank's room for interest rate management. The sector's indebtedness toward the central bank and the uneven distribution of this indebtedness, prevented the authorities from setting the discount rate at a penalty level. The large banks never used their refinancing ceilings in full and they used to align their lending rates to the rediscount rate. The other banks, with structural liquidity shortages, were mainly price-takers. They were usually at their refinancing

limits with the central bank and were borrowers in the interbank market. Hence, if and when the central bank raised the money market rate too high, their interest rate margin narrowed substantially and many of them became unprofitable. This vulnerability was a major concern for the central bank and an impediment to the effective use of the interest rate policy. Hence, in times of conflict between internal and external goals, the authorities had to resort to direct controls and to tighten exchange controls.

In summary, the new instrument mix--open-end refinancing facilities *cum* reserve requirements--was ill-designed for effective interventions. Similarly, the adopted sequencing of the reforms--the (premature) introduction of flexible interest rate management in a highly segmented financial market--was also a major cause of the complete failure of the liberalization attempts. Financial market reform should have taken place concomitantly with, or even prior to policy reform.

III. The 1973-1987/89 Policy Framework--Institutional Presentation 1/

1. Credit ceilings: the dominant instrument

At the end of 1972, the authorities decided to reintroduce quantitative credit controls as the dominant instrument to help cope with the growing inflationary pressures. From the onset it was stressed that these ceilings would never be aims in themselves but rather monetary policy instruments used to attain the intermediate target (Bruneel and Patat (1984)). 2/ The authorities' preference for credit ceilings reflected their view, based on the previous liberalization attempt that interest rate management would not be effective to contain money growth. Interest rates would be used to offset exchange rate pressure and credit ceilings would be used to insulate the cost of credit from any unwanted, foreign-induced changes in the spread between domestic and foreign interest rates.

Technically, the "encadrement du crédit" was conceived along the following two lines. 3/ First, the BdF annually set a growth target for commercial bank credit to the private sector. 4/ Monitoring took place on a monthly basis, with nonobserving banks being required to deposit noninterest-bearing "supplementary reserves" in a special account with the

1/ We refer to the Appendix for an overview of the instrument mix.

2/ See section 3 in this chapter on the intermediate targets.

3/ See Patat (1987) for a detailed description of the system.

4/ In 1973 and 1974 an annual growth rate was defined based on the credit portfolio one year before, using a moving base. Monthly growth rates were then derived from this annual growth rate. From 1975 on, the targets were calculated with respect to an index 100, corresponding to the credit stock at the end of the previous year.

central bank. Their highly progressive rate discouraged breaching the ceilings. 1/

Second, various types of credits were excluded from the ceilings, including foreign currency credits, medium- and long-term export credits and special credits such as social housing, export promotion, and energy-saving investments.

Throughout the years, several changes were introduced. Basically, they aimed at two goals: to increase the system's flexibility and to make credit policy more selective. As to the first objective, from December 1974 on, banks were allowed to carry forward, up to a maximum of six months, credit previously unutilized. 2/ Also, gradually a "marché de désencadrement" developed and became a major source of bank flexibility. Banks with unutilized room under the ceiling started buying credits from other banks that were in danger of exceeding their ceiling.

Another important modification was the authorization, in 1973, for financial institutions to expand their lending activities beyond the ceiling, provided these credits were funded with new capital funds or through the issuance of long-term bonds (hereafter called "stable resources"). This gave banks an incentive to expand their business by consolidating their funding. The macroeconomic rationale behind this provision was that it could enhance the interaction between the interest rate structure and the demand for money. When, for example, the ceiling was binding because of excess demand for credit, banks could fund additional lending by issuing bonds. This would raise the interest rate on bonds, which would, for its part, help reduce the demand for money and restore the equilibrium.

These features were, however, overshadowed by the effects of various other selective measures which ultimately rendered the system less transparent and manageable and more open to exceptions and avoidance. Selectivity was increased in two ways. First by defining different growth targets based on the institutions' size and activities. Smaller and newly established institutions and some specialized institutions received looser targets, while, in general, the targets were tighter for the larger banks.

1/ If, for example, a bank exceeded its ceiling by 5 percentage points, the supplementary reserves amounted to 5.25 percent of its *total outstanding amount of lending to the private sector*. A 10 percentage point excess corresponded to a deposit of 18 percent of the total amount outstanding.

2/ As Argy (1983) notes, since the base for calculation of the norm was the actual amount of credit extended, there was an implicit penalty for undershooting the banks-specific targets.

Second, the amount of credits exempt from the ceilings also increased substantially throughout the years. Their proportion rose from 1.7 percent of total bank lending in 1973 to 7 percent in 1978 and nearly 11 percent in 1983. 1/ These measures increasingly led individual banks to request special waivers at times they experienced difficulties, introducing additional arbitrariness into the system.

As early as 1982, attempts were made to simplify the system slightly in response to growing criticism that it was becoming complex, administratively expensive and, perhaps, inequitable. The growing complexity and the related increasing forecasting problems, forced the authorities in 1984 to cancel, unannounced, the accumulated unutilized credits. 2/ Then, one year later, the credit ceilings were abandoned and, for 1985 and 1986, monetary control was based on a system of contemporaneous *reserve requirements on bank assets* calculated on the basis of a highly progressive formula. Most of the other features of the old system remained in place. Thus, credits funded through "stable resources" and credits to priority sectors continued to be excluded from the reserve base (though the number of exceptions was reduced). All in all, commercial banks gained some autonomy, but technically speaking the system remained at least as nontransparent and complex as before. 3/

2. The other monetary policy instruments

The BdF's other instruments were mainly designed to fine-tune money market conditions and banks' day-to-day liquidity management. After the abolition, in 1971, of the ordinary rediscount facility, *7-day repurchase arrangements* at the commercial banks' initiative was the main vehicle for liquidity management. 4/ In 1973, the BdF introduced two new instruments to influence money market conditions. First, the BdF began to set the *call-money rate* in the Paris money market on a daily basis. Second, the authorities introduced quarterly "appels d'offres," *outright purchases of government paper*.

1/ Three methods were used in this respect: partial or total exemptions from the ceilings, the fixing of higher ceilings for specific credit categories and the upward adjustment of the individual ceiling to include credits already granted.

2/ Their size had become so huge that it would severely threaten any future effort to tighten monetary policy.

3/ Under the new system the banks could decide more autonomously on the desirable growth rate of their credit portfolio, given the progressive reserve requirements. The authorities were facing an even more complex forecasting problem than before as they had to find the appropriate progressive scale for the reserves, given their (implicit) credit growth target.

4/ Since 1969, banks could also initiate *one- and three-month repurchase arrangements* based on government paper and some eligible commercial paper.

The *minimum reserve requirements* on the banks' liabilities were no more than a relic from the first liberalization period. They remained unchanged at a very low level (less than 1 percent of the eligible liabilities) through 1984, with the exception of the 1979-80 period, when they were raised to absorb excess liquidity resulting from foreign exchange inflows.

The major feature of the subsequent years (1974-86) was a reduction of the number of instruments that created liquidity at the commercial banks' own discretion, thereby enhancing the central bank's control over money creation. The one- and three-month repurchase arrangements were abolished in 1980, after intensive use in 1979 had led to excessive liquidity creation. In 1980, the authorities also discontinued the automatic rediscounting of medium-term export credit at preferential rates, another relic of the pre-1971 policy framework. From then on, the 7-day repurchase arrangement was the only source of liquidity provision accessible at the banks' discretion. Beginning in 1984, it was gradually deactivated, as the central bank progressively turned to controlling the call-money rate through one-day repurchase arrangements at its own discretion or through outright purchases.

3. The intermediate targets

The 1973 policy changes also marked a first step toward the introduction of intermediate targets into the French monetary policy. Initially, however, the attempt was highly confusing. In the 1973-76 period the BdF publicly announced annual targets for bank credit growth but clearly indicated that bank credit was an instrument. They also set annual growth targets for M2, but exclusively for internal use, as these were not announced in public.

A major change occurred at the end of 1976, when the authorities decided to announce publicly M2 as their *intermediate monetary target* for 1977. Although institutionally the Banque de France was still heavily dependent on the political authorities, the public announcement of an intermediate target signaled that the central bank was in the process of gaining more autonomy. In addition, the adoption of an intermediate target gradually proved to be a major step toward enhancing the monetary authorities' credibility.

As in many other countries with monetary aggregates as intermediate targets, the concern about the choice of the appropriate aggregate led to redefinitions and replacements throughout the period under review. ^{1/} Prior to 1984, the aggregate M2 also comprised nonresidents' accounts with commercial banks. The aggregate used in 1984 and 1985 excluded nonresidents (hence M2R, R for residents). A radical reform of the

^{1/} Bordes and Strauss-Kahn (1987) provide an almost encyclopedic overview of monetary targeting in France.

aggregates took place in 1986 in order to keep up with the emergence of new financial instruments such as commercial paper and certificates of deposits. Whereas the old aggregates had an institutional base, the new set was based on functional criteria of their components. 1/ After this redefinition, M3 became the preferred target aggregate because it was deemed more consistent with the controlled credit variable than M2.

A highly important change in the intermediate target framework occurred in 1979, when the authorities added *exchange rate stability* to their list of targets. By doing so, France became the single industrial country explicitly pursuing an exchange rate and a monetary target. Because their simultaneous pursuit is generally not possible without binding capital controls, the authorities adopted a pragmatic approach (Patat (1988, p. 60)). 2/ Important though exchange rate stability was, it was not allowed to be the sole objective of monetary policy. Since the French economy was not as open as some other, smaller EMS economies, complete disregard for domestic objectives was not seen as desirable. In addition, since the authorities believed that exchange rate movements were not always guided by objective observation of the fundamentals, a domestic target had to underpin the exchange rate target.

4. The 1987 reform 3/

On January 1, 1987 the BdF adopted a genuine indirect monetary policy approach. Central to the reform of the instruments was the elimination of reserve requirements on bank assets and the daily setting of the call-money market rate. 4/ Instead, the minimum reserve requirements on liabilities and the 7-day repos were both reactivated and the outright purchases of government paper were replaced by periodic repurchase tender offers.

Under the new policy framework, the Banque de France monitors *two key official interest rates*, the rate on repurchase tenders (the intervention rate), and the 5- to 10-day repurchase rate. A shift in the central banks' policy stance implies a change in one or both of these interest rates. Under normal circumstances, the interbank rate is situated between the two rates, with the intervention rate being the lower boundary and the 5- to 10-day repurchase rate the upper boundary.

The main instrument used to influence commercial bank reserves and the interbank interest rate is the *repurchase tender offer*, held on

1/ See Patat (1987c) for an overview of these new aggregates.

2/ Exchange controls were gradually lifted from 1984 on.

3/ For a detailed overview, see Batten, et al. (1990); see also Icard (1987) and (1988), and Kneeshaw and Van den Bergh (1989).

4/ However, the monetary authorities have specified that they retain the right to reintroduce reserve requirements on bank lending in case of exceptional circumstances.

average each week. 1/ Bids--specifying the amounts of securities and the interest rate at which bidders are prepared to sell--are solicited early in the morning. That afternoon, the authorities announce the interest rate (the new intervention rate) that is accepted and the amount allocated to each successful participant.

The other instrument, *standing 5- to 10-days repurchase agreements*, 2/ is more of a marginal source of funds for banks. Similar to the pre-1987 practice, this mechanism is available to the commercial banks at their own discretion. Normally, this facility is only used intensively when the interbank rate exceeds the rate on these repos. In this situation, reserves supplied through this mechanism will tend to alleviate the upward pressure on the interbank rate and gradually restore the normal relationship between these interest rates. In addition, very short repurchase agreements (24 to 48 hours) or outright sales or purchases of Treasury bills are used infrequently, primarily aiming at smoothing daily fluctuations. Finally, the authorities are contemplating to enforce their interest rate actions through a more flexible use of contemporaneous reserve requirements on liabilities.

The 1987 policy reform also meant the reintroduction of M2 to the range of *intermediate targets* alongside M3, based on the rationale that M2 was better suited to the emerging interest rate policy. In 1988, M3 was dropped as an intermediate target, while the authorities also indicated they planned to rely more on a range of indicators, including total domestic credit, broad measures of liquidity and a narrow transactions aggregate. 3/

IV. An Explanation of the Smooth 1987 Transition

Financial liberalization is often followed by periods of rapid monetary growth or increased volatility in both aggregates and interest rates. None of these developments seems to have taken place in France, indicating that the 1987 reform has been very smooth and therefore successful. In sharp contrast to the first liberalization period, the battery of new instruments has allowed monetary policy to be at least as effective as under the previous regime.

1/ In the past, there were only four calls a year, concomitant with the required reserves period.

2/ Actually, it was the old 7-day facility until August 1988, but then, in a context of uncertainty about developments in money market rates, the authorities decided to offer the banks a choice between 5- and 10-day maturities.

3/ One of the major reasons for the 1988 shift was that M2 and M3 were sending out diverging signals during some periods in 1987, which obviously reduced the transparency of monetary policy (see Patat (1989, pp. 104-05)).

This chapter explores the factors that may have contributed to this success. Its contention is that neither 1985 nor 1987 were really breaking points in the policy design, as it is usually presented, but that the 1979-81 period has been the starting point of a new phase in the conduct of monetary policy, leading to the smooth 1987 transition. The first section will reinterpret the pre-1987 framework from that angle and the empirical evidence reported in the second section will underpin this interpretation.

1. The 1979-86 framework reconsidered

The 1979-81 period coincides with the *shift to a dual intermediate target structure*, giving for the first time explicit attention to exchange rate stability. 1/ Since that time, the monetary policy procedures have gradually become more and more market-oriented, and the effectiveness of, and the hierarchy among, the main instruments--credit controls and interest rate policy--have slowly evolved, eventually resulting in the smooth 1987 transition. Without underrating the 1987 reform, it can be stated that it merely concerned technical changes to the system.

a. The system of credit controls lost effectiveness and meaning

There are several indications that throughout the 1980s, credit controls were increasingly losing their effectiveness as a result of interactions between macroeconomic developments and problems inherent in direct control systems. 2/

Table 1 shows that throughout the period, the authorities were targeting a continuously and significantly shrinking portion of total banking lending and of total credit to the economy, making the setting of credit targets and their interpretation as instrument to guide the money supply less meaningful. Due to the functioning of the control system itself, credits exempt from the ceilings and those funded through "stable resources" steadily increased. Macroeconomic developments, such as the expansion of credit to the government in the second half of the 1970s are a second reason.

Finally, from 1975 on, controlled credits and bank lending, both as a portion of total domestic credit, also declined significantly because of disintermediation. The 1978 Monetary Law, injecting new life

1/ Between 1972 and 1979, the FRF participated in the so called "Snake Arrangement." However, the commitment was not very firm, as the authorities decided on several occasions to let the FRF float when domestic conditions required so.

2/ There is some unanimity that credit ceilings were more or less effective in the initial years of their existence. See Argy (1983) for some comments on the 1973-80 period.

Table 1. France: Evolution of the Share of Bank Lending
Under the Ceilings in Total Credit, 1973-83

(In billions of FRF)

	1973	1975	1980	1983
Bank lending under ceilings (1)	451.4	565.5	948.2	1,193.0
Lending exempt from ceilings (2)	10.5	28.9	98.4	228.4
Lending financed through stable resources (3)	66.1	92.4	187.1	335.1
Bank credit to government (4)	56.1	104.1	130.9	253.6
<u>Total bank lending (including adjustment)</u> (5) = (1) through (4)	<u>587.5</u>	<u>795.9</u>	<u>1,388.6</u>	<u>2,100.1</u>
Other debt <u>1/</u> (6)	387.2	490.3	1,032.7	1,606.4
<u>Total domestic credit</u> (7) = (5)+(6)	<u>974.7</u>	<u>1,286.2</u>	<u>2,421.3</u>	<u>3,706.5</u>
Authorized lending (8)	--	18.8	95.1	194.9
<u>Grand total</u> (9) = (7) + (8)	<u>974.7</u>	<u>1,305.0</u>	<u>2,516.4</u>	<u>3,901.4</u>
(1) as a percentage of (5)	76.8	71.0	68.2	56.8
(1) as a percentage of (9)	46.3	43.3	37.7	30.6
(5) as a percentage of (9)	60.3	60.9	55.2	53.8

Source: Bruneel and Patat (1984) and own calculations.

1/ Monetary financing through the budget, lending by nonbank financial institutions and private nonfinancial sector bonds.

into the French bond and equity markets through tax action, gave a first impetus. 1/ This initiative greatly stimulated the creation and expansion of the SICAV's ("Sociétés d'Investissement à Capital Variable"-- short-term, open-ended, mutual funds). A few years later, in the early 1980s the authorities launched a global financial market modernization plan, in an effort to keep up with financial market developments worldwide. The markets for products such as commercial paper and certificates of deposits expanded quickly and further eroded the grip of credit controls. According to Patat (1987c), the degree of intermediation (measured on the basis of credit flows) fell from almost 80 percent at the end of the 1970s to nearly 60 percent in the mid-1980s. The growing importance of the SICAV's, which invested heavily in long-term bank securities and were at the same time very liquid for the investor, steadily deprived the "stable resource" provision from its initial goal (nonmonetary financing of lending), since a large part of bank bonds were monetized through this process.

Moreover, by 1983-84, the growing complexity of the system made it increasingly difficult to forecast a credit growth rate consistent with the intermediate monetary target. The growing uncertainty surrounding the various components involved in the forecast made the exercise more and more precarious. 2/ So, in 1984, the size of the unutilized

1/ Because the Monory Law made the issuance of stock and bonds very attractive, it is fair to state that the success of this initiative and the explosion of credits based on "stable resources" in the subsequent years are based on a high degree of cross-fertilization.

2/ A striking feature of the French credit control procedures was indeed the highly complex forecasting procedure the authorities needed to go through, in order to arrive at annual growth targets for controlled bank credit. The first step was the fixing of a target for M2. The next step was to obtain a consistent forecast for the growth of both the domestic and external counterparts of this aggregate. Third, from the forecast on net domestic credit, an estimate on bank lending had to be derived. Fourth, in order to arrive at a target for the controlled credits, the authorities had to predict the growth of lending to preferential sectors, the evolution of the banks' "stable resources," the evolution of credits to the Government and, finally, they had to have a feel for the evolution of the unutilized credits under the ceilings throughout the year. It goes without saying that such a lengthy procedure is likely to result in errors, making the outcome poorly consistent and threatening the central bank's credibility. In this respect, the question is still open why the authorities did not concentrate solely on domestic credit targets, since the transmission from bank lending, through domestic credit, to the money supply is rather complex and, very likely, hard to grasp by market participants.

credits under the ceiling had become so huge and nontransparent, that any targeting effort was bound to fail. This was the immediate cause for the 1985 reforms. So these reforms were just a consolidation of a *de facto* existing situation wherein credit ceilings were no longer the appropriate instrument for domestic monetary management.

b. Growing priority for the exchange rate target

The adoption of the exchange rate target alongside the money growth target further reduced the usefulness of credit controls. During the first EMS years (1979-82), the French commitment to a stable exchange rate did not prove to be very firm. 1/ But, when in 1983 the French economic policy stance shifted dramatically and the anti-inflationary policy was assigned the highest priority, the dual intermediate target regime quickly turned into one where the exchange rate objective nearly always was given priority, despite some statements to the contrary. As a consequence, money growth became endogenous and in periods of short-term inconsistency between both targets, either the money supply target was adjusted or money supply was allowed to diverge from its target. 2/

c. Consequences for the instruments

The shift in hierarchy between the intermediate targets also produced a shift in the relative importance of the instruments. Interest rate management became much more important than credit management, making the latter marginal. Looking back on the 1980s, there appear to be only a few occasions where quantitative credit controls could help to insulate the cost of credit from interest rate pressures associated with external developments. 3/ This too brings into question the usefulness of this instrument during most of the 1980s.

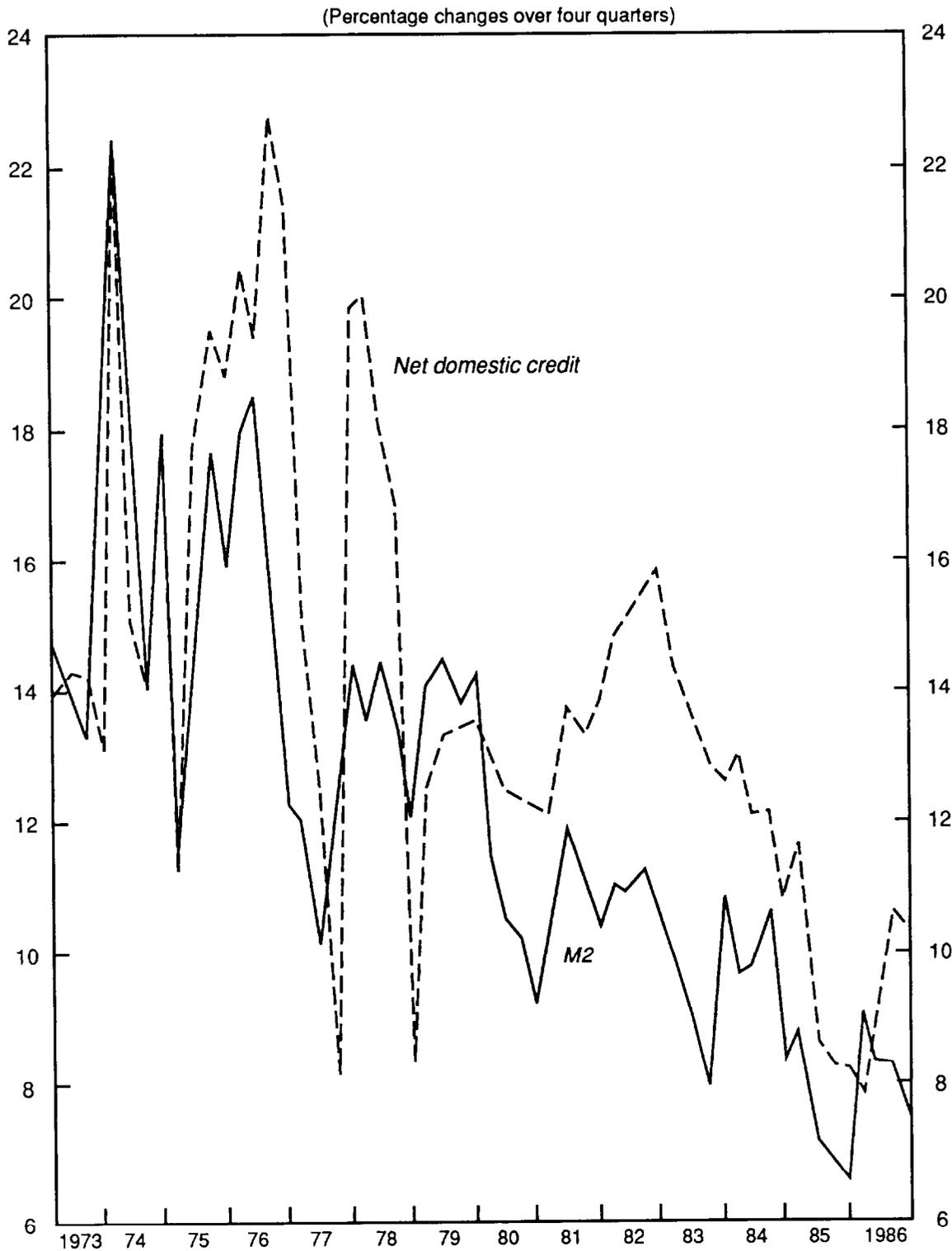
Furthermore, as can be seen from Chart 1, the endogenization of the money supply also loosened the link between net domestic credit and money, thus reducing the usefulness of credit targets to guide money targets. During the first years of the "encadrement," money growth and domestic credit growth moved in a strikingly parallel way. However, growth rates diverged increasingly, implying that the influence of the external counterpart of the monetary aggregate became more significant. During most of the 1980s, domestic credit growth was superior to money

1/ In the period March 1979-March 1983, the FRF was devalued 3 times. Moreover, exchange controls were significantly tightened through 1982-83.

2/ The priority given to the exchange rate also implied that the money growth target had to be set consistently with the exchange rate target, leaving no room for an independent setting of the money growth target.

3/ See Bruneel and Patat (1984).

CHART 1
FRANCE
Net domestic credit and money during the "Encadrement",
Q1 1973 - Q4 1986



growth, and at times (e.g., 1982-83) there was almost no relationship between the evolution of both variables. 1/

Interest rate management, conducted through the daily setting of the BdF's intervention rate and the tender and repurchase arrangements, gradually gained in importance during the early 1980s. It is worth recalling that, from 1984 on, the BdF increasingly controlled the intervention rate through repos or outright purchases. The efficiency of interest rate management increased as the French financial markets became more homogeneous, allowing interest rate changes to be transmitted more easily throughout the market. Admittedly, interest rate policy still had its limitations in the early 1980s. Its main influence was on the short end of the market (Truquet (1986)) as the lack of developed markets greatly reduced the impact of the central bank's intervention rate on the longer end of the yield curve. Nevertheless, the combined impact of the intervention rate and the long-term rate gave the development of the markets a strong impetus. 2/

In sum, in the 1979-86 period, the major burden of monetary policy increasingly shifted to the interest rate instrument. And, from 1984 on, when the exchange controls were gradually dismantled, the authorities increasingly had to rely on one monetary policy instrument.

d. The 1987 transition in perspective

Against this background, we are tempted to describe the 1987 reform as *the transition from an administered interest rate policy to a genuine open market system*. In the run-up to 1987, markets had been gradually developing, new financial instruments were appearing and the financial system was on its way for a change from a debt-based to a fully market based system. However, financial markets still lacked the necessary depth and width to allow the central bank to influence interest rate movements indirectly. On the other hand, the central bank already had a sufficient battery of techniques (outright purchases and repurchase arrangements) to conduct an interest rate-based policy, and the financial institutions were already familiar with this type of central bank intervention. So, as soon as the central bank could avail of a standardized and broadly accepted instrument such as treasury bills, it was in a position to move from a policy of *pegging* the interest rate to one of

1/ In the 1973-1 - 1975-4 period, the correlation coefficient between both variables was 0.89. It dropped in the subsequent eight quarters through 1978-4 to 0.58. In the 1979-1 - 1982-4 period the coefficient was -0.04 and between 1983-1 and 1986-4 it was 0.66.

2/ The combined effect of the 1978 Monetary initiative, the provision on the use of "stable resources" and the development of a government bond market in the early 1980s, gradually enhanced the role of the long-term interest rate and therefore the role of market forces in the French financial system.

guiding the interest rates. 1/ In 1987 this condition was sufficiently fulfilled, so that the final step could be taken. Some of the technical changes made at that time further enhanced the efficiency of the central bank's intervention. 2/

This interpretation helps to explain why the 1987 transition was so smooth. Based on this theory, the 1987 reform was a qualitative change rather than a major leap from a highly administered system to a totally open policy structure. It is, with hindsight, also justified to point to the importance of the two 1973 policy innovations, the daily setting of the call-money rate and the introduction of the tender system. At that time the introduction of these instruments was almost completely overshadowed by the introduction of the credit controls, but they were actually major building blocks for the indirect policy approach.

2. Some empirical evidence on the 1980s transition

This section presents a small model, capable of illustrating and supporting the main points advanced in the previous section. From the analysis, we can derive the following, testable hypotheses on the conduct of monetary policy in France in the 1979-87/89 period:

(a) The interest rate setting was primarily geared toward exchange rate management and only marginally toward the monetary aggregates;

(b) The money stock was largely endogenously determined, also implying that the impact of credit controls on monetary aggregates was either low or even nonexistent;

(c) No major shocks occurred in 1987; the functioning of the system was not basically altered by the predominantly qualitative changes that were introduced at that time.

The model consists of three stochastic equations (the interest rate, money demand, and total private sector debt), and one identity. The *interest rate equation* identifies the major determinants of the authorities' interest rate policy. The dependent variable is the money market rate (r_{Mon}). Those variables related to the external sector are the *euro-dollar and euro-mark interest rates* (r_{USD} and r_{DEM}), the *French franc exchange rate* (e_{FRF}), and the *country's international reserve position* (IR). Variables related to domestic economic factors are the *intermediate monetary target* ($M2$), *inflation* (ΔP), and *business cycle considerations, proxied by real GDP* (y).

1/ Treasury bills were introduced in December 1985.

2/ See Icard (1987) for a discussion of these technical improvements.

Then, given the purpose of our experiment, we need to elaborate an approach enabling us to assess the influence of credit controls on the determination of the money stock. This is done by assigning an explicit role to wealth effects in the money demand equation. This approach is based on the understanding that broader money--the aggregate we will use--performs the dual function of both a store of value and a means of payment. More concretely, estimated money demand will depend on the size of the nonfinancial private sector's gross wealth portfolio. 1/ Gross wealth (GW) (i.e., wealth gross of lending) can be expressed as the sum of net wealth (NW) and total debt (TD): $GW = NW + TD$

The upper part of Chart 2 presents the evolution in the growth of gross wealth, its components and M2. Through the end of 1986, TD expanded more evenly than NW. As a result, the growth path of GW was predominantly marked by the evolution in NW. TD expansion has substantially accelerated since 1987, following a slowdown in the growth of NW. It remains to be seen whether this acceleration was related to the removal of credit controls. Anyway, the lower part of the chart indicates that the 1987 rise in TD also coincided with a faster real GDP growth. From the upper part of the chart we can also infer that the share of M2 in total NW has decreased throughout the period, as the latter has grown at a much faster pace than the broad aggregate.

For the purpose of the present exercise, it is assumed that NW is predetermined, i.e., the model does not allow for interactions between the demand for real and financial assets and debt. If, in the case of France, TD were completely supply-determined in the period under review (1979-86), because of the "encadrement," it would be acceptable to treat the sum of both, i.e., GW, as predetermined in the money demand equation. 2/ In that case, credit supply conditions would be introduced in the money demand function through this variable. However, to the extent that TD is demand-determined, along with financial assets, GW will be endogenous in the money demand equation and its coefficient would be biased due to simultaneity. In practice, both demand and supply factors will most likely play a part and so money demand has to be estimated using simultaneous equation techniques.

The second equation therefore models the demand for *total debt* (TD), using supply and demand elements such as *net wealth* (NW), *the rate of inflation* (ΔP), *the lending rate* (r_{lend}), and *real GDP* (y). The actual impact of credit controls can be tested by including dummy variables in this equation. If credit controls were effective, the 1985 and 1987 reforms would have increased the availability of credit (which may then have led to larger holdings of assets by the private nonfinancial

1/ For a similar approach, see Johnston (1985).

2/ This is the approach followed by Grice and Bennett (1984) for the demand for $\pounds M3$ in the United Kingdom during the 1963-78 period.

sector). Additional evidence can be derived from the predictive accuracy of the equation in the post-1987 period.

The final equation models *money demand*. Income, inflation, and a short and long-term interest rate (rMon and rLT) are the traditional explanatory variables. Gross wealth also enters this equation as the sum of predetermined NW and endogenous TD. 1/ The dependent variable is M2 because most of the time, this aggregate was used as the intermediate target. Table 2 lists the potential variables and their predicted signs.

Table 2. Potential Variables and Their Predicted Signs

	rMon	M2	Δp	y	rlend	rLT	NW/p	GW/p	eFRF	IR	rDEM	rUSD
rMon		+	+	+					+	-	+	+
TD/p			-	+	-	-	?					
M2/p	-		-	+		-		?				

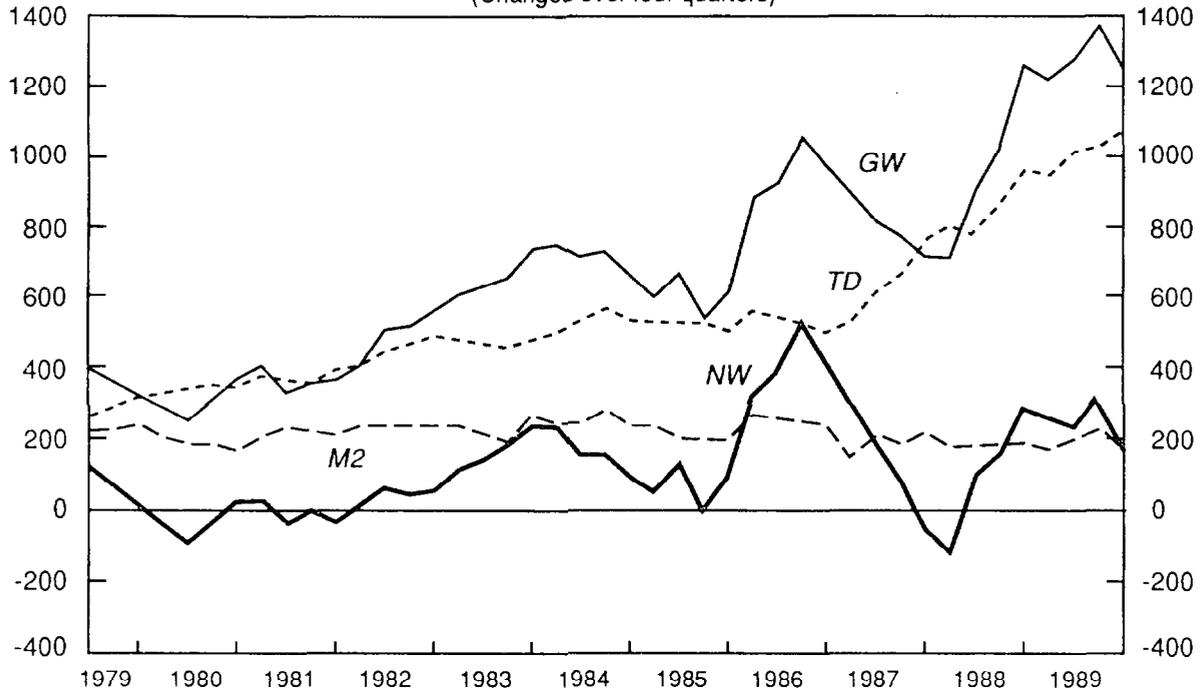
Following D. Hendry's general-to-specific approach (see, e.g., Hendry (1979) and Gilbert (1986)), we started for each of the three equations from the following unrestricted model: 2/

$$y_t = \alpha_o + \sum_{i=1}^n \alpha_l y_{t-i} + \sum_{k=1}^m \sum_{i=0}^n \beta_{k,i} x_{k,t-i} + u_t$$

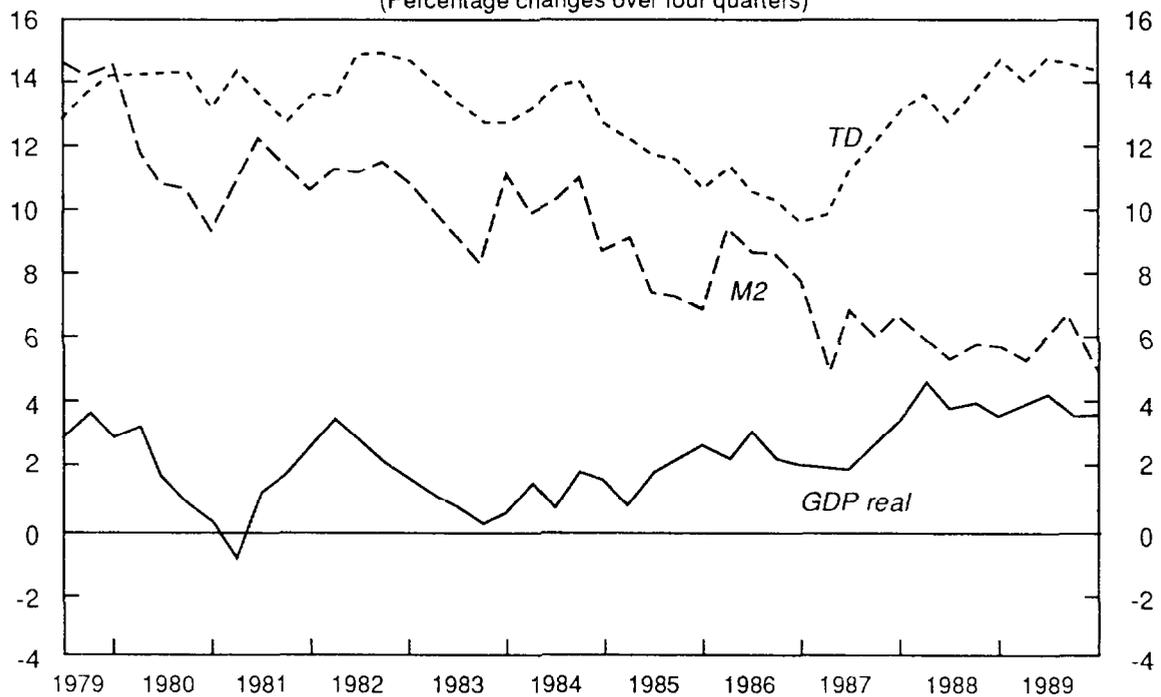
1/ The buffer stock and disequilibrium money approaches also link short-term money demand to credit market conditions (for an overview, see, e.g., Andersen (1985) and for an application, see, e.g., Kannianen and Tarkka (1986), but under different assumptions. These approaches assume that disequilibrium in credit markets is reflected in the first place in holdings of money and/or liquid assets. The present approach, on the other hand, assumes that any disequilibrium in the credit markets is reflected in holdings of gross wealth, but does not necessarily influence the allocation of wealth between financial assets.

2/ All computations used version 6.1 of the PC-GIVE and PC-FIML econometrics packaged developed by D. F. Hendry and the Oxford Institute of Economics and Statistics.

CHART 2
FRANCE
Evolution of gross wealth, net wealth, total debt and money,
Q2 1979 - Q4 1989
(Changes over four quarters)



Evolution of financial debt, money and real GDP,
Q2 1979 - Q4 1989
(Percentage changes over four quarters)



Where y_t is, respectively $rMon$, TD/p and $M2/p$; y_{t-i} are the lagged endogenous variables; and x_k the explanatory variables listed in Table 2, plus credit control dummies in the TD/p -equation. α_0 , α_1 and $\beta_{k,i}$ are the coefficients and n was initially set at 5; u_t is a white noise disturbance.

The system was estimated simultaneously using quarterly seasonally unadjusted data. 1/ The sample period was 1979-1 through 1987-4, using the eight quarters through 1989-4 for post-sample forecasts, as an additional check for parameter constancy. This period falls entirely in the post-reform period, which increases the usefulness of the parameter constancy test. In the final results, presented in Table 3, the data are expressed either in fourth quarter differences of logs ($\Delta 4$) or in log-levels. The diagnostic tests suggest the absence of any major problems. 2/

The *interest rate equation* (Table 3, equation 1) is well specified and yields meaningful results. The exchange rate variable was first instrumented on present and lagged values of the rate of inflation and the current account. As can be expected for an interest rate reaction function based on quarterly data, all right hand variables are contemporaneous. However, the adjustment speed is fairly slow, which may be indicative of the pegged nature of the interest rate throughout the period under review. Both the DEM interest rate and the FRF/DEM exchange rate strongly influence the BdF's interest rate setting. On the domestic side, accelerations/decelerations in real GDP growth and inflation affect the interest rate determination process significantly. Chart 3 shows that the fit is quite reliable. The post-1987 forecasts are within the acceptable margin of error, indicating that the interest determination process has not undergone any significant change.

Turning now to the nonretained variables, the USD interest rate and the FRF/USD exchange rate were both insignificant, and adding the international reserves to the equation did not improve its performance.

1/ All data were collected from International Financial Statistics, except for the data on wealth, which are produced by the Banque de France. For the methodology of the wealth data, see Flamarion and Monfront (1988).

2/ The following test statistics are reported in Table 3. R^2CO is the (usual) determination coefficient; σ is the standard error of the regression; $AR(p, n-k-p)$ is the F-version of Godfrey's (1978) test for residual serial correlation from lags 1 to p ; $HET(1, n-2)$ is White's (1980) F-test for heteroscedasticity associated with squares of the explanatory variables; $NORM(2)$ is the Jarque and Bera (1980) test for normality of regression residuals; $Chow(\dots)$ is the Chow test for parameter constancy; Forecast $\chi^2(8)$ compares within and post-sample residual variances.

Table 3: Estimation Results for rMon, TD/p and M₂/p

(1) The interest rate:

$$\Delta 4rMon_t = 0.30 \Delta 4rDEM_t + 0.53 \Delta 4rMon_{t-1} + 0.80 \Delta 4eFRF_t + 8.34 \Delta \Delta 4p_t + 5.20 \Delta \Delta 4y_t$$

(6.28) (9.20) (3.49) (3.96) (2.97)

$$R^2CO = 0.92 \quad \sigma = 0.078 \quad AR(3,27)_1 = 0.30 \quad HET(10,18) = 0.49$$

$$NORM(2) = 1.80 \quad Chow(8,31) = 0.97 \quad forecasts \chi^2(8) = 1.10$$

(2) Total debt:

$$\Delta 4 (TD/p)_t = 0.92 \Delta 4 (TD/p)_{t-1} - 0.13 \Delta \Delta 4 (NW/p)_{t-1} - 1.17 \Delta \Delta 4 p_t + 0.18 \Delta 4 y_t - 0.01 \Delta 4 rlend_{t-1}$$

(21.11) (-2.02) (-7.18) (2.20) (-1.06)

$$R^2CO = 0.98 \quad \sigma = 0.0058 \quad AR(3,27)_1 = 0.38 \quad HET(10,18) = 1.37$$

$$NORM(2) = 0.22 \quad Chow(8,30) = 1.01 \quad forecasts \chi^2(8) = 1.32$$

(3) Money demand:

$$\Delta 4(M2/p)_t = -0.04 \Delta 4rMon_{t-3} - 0.04 \Delta 4rLT_{t-1} - 0.09 rLT_{t-5} - 0.08 (M2-Y)_{t-4} - 0.81 \Delta \Delta 4 p_t - 0.55 \Delta 3 \Delta 4 p_t$$

(-5.17) (-2.15) (-8.08) (-4.09) (-3.13) (-3.96)

$$+ 0.15 \Delta 4(GW/p)_t - 0.04 (GW/p)_{t-5}$$

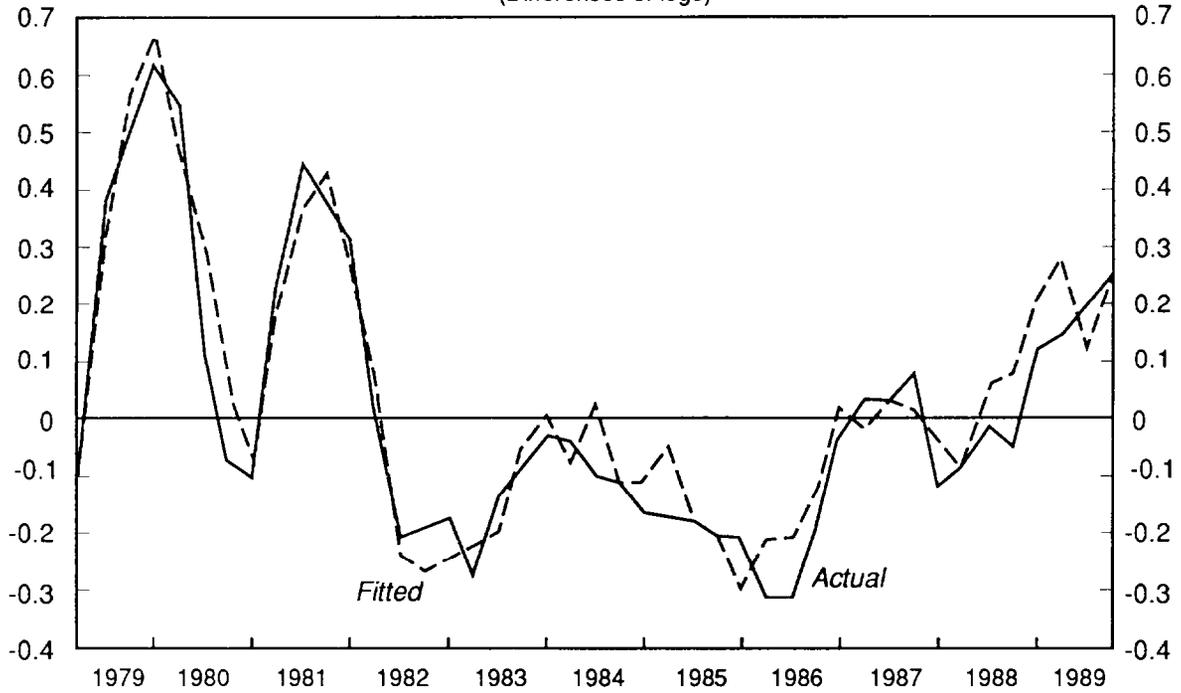
(1.84) (-2.12)

$$R^2CO = 0.95 \quad \sigma = 0.007 \quad AR(3,24)_1 = 0.18 \quad HET(16,9) = 1.19$$

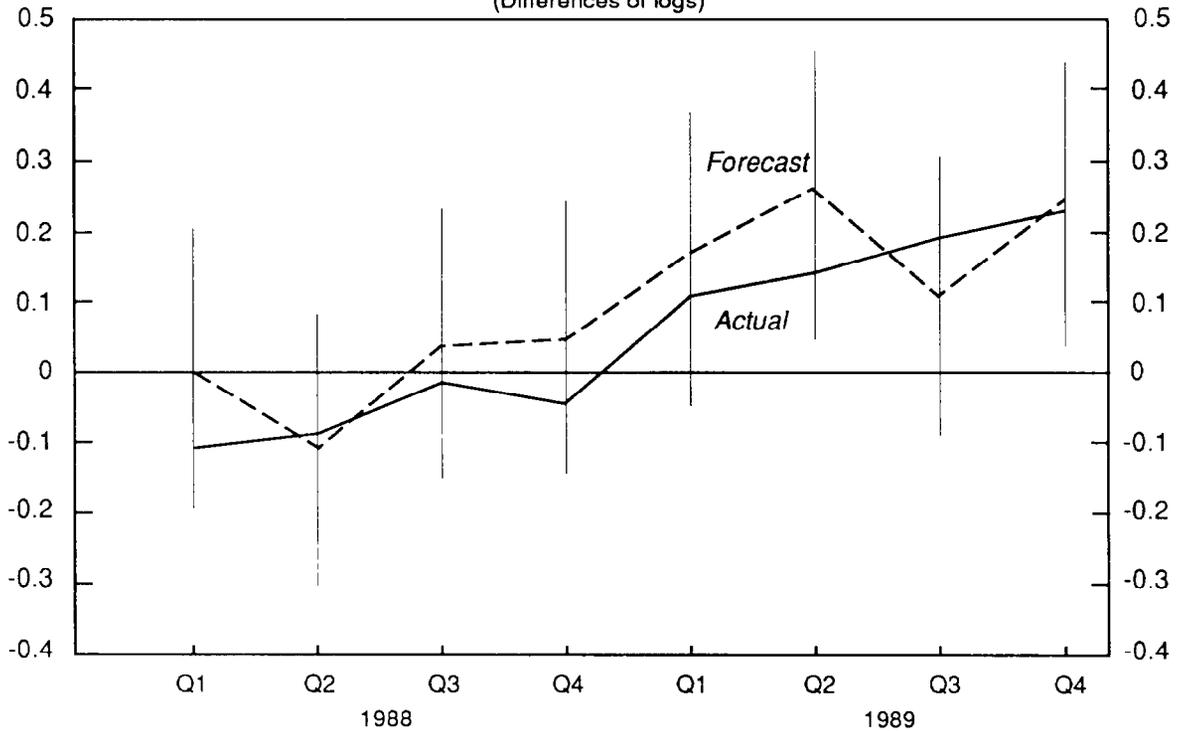
$$NORM(2) = 1.49 \quad Chow(8,27) = 0.16 \quad forecasts \chi^2(8) = 0.38$$

CHART 3
FRANCE

Money market rate equation: actual and fitted values
(Differences of logs)



Money market rate equation: forecast performance¹
(Differences of logs)



¹ The error bars show plus or minus two standard errors of the estimated value for the dependent variable.

Hence, the position of the FRF within the ERM of the EMS has without any doubt been the authorities' major objective. 1/

The other very interesting finding from the perspective of this paper is the absence of any clear indication that the interest rate has been used actively to achieve money growth objectives. Two variables were tested: nominal M2 was significant, but entered the equation with the wrong sign and its inclusion deteriorated both the fit and the forecast significantly. The other specification was the deviation of actual M2-growth from its target path. Although this variable had the right sign, it was insignificant and did not improve the quality of the fit and the forecast in any way. These results are indicative of the endogenous nature of money in the policy process.

A comparison with results reported in Artus, Barroux and Pecha (1988) suggests that the influence of the USD interest rate and the FRF/USD exchange rate has become marginal throughout the 1980s, as the EMS-objectives increasingly dominated the policy setting. In their equation both variables were significant in some periods in the early 1980s. 2/ On the other hand, their results corroborate our findings on the absence of any significant influence from M2-targeting on the interest rate setting in the post-1979 period.

According to our findings, *demand for total debt* (Table 3, equation 2) can be expressed in terms of a few variables: economic activity (proxied by real GDP growth), the interest rate and changes in the rate of expansion of net wealth and in inflation. The adjustment process seems rather slow. The influence of the interest rate is low and not very significant at the 5 percent level. One explanation for its insignificance is that the selected interest rate may not be representative for the actual lending rates. Another explanation may be that the demand for debt is interest-inelastic, *inter alia* because of the existence of credit controls. 3/

1/ We also tested another specification of the exchange rate objective, namely the difference between the official FRF/DEM rate and its market rate, but the inclusion of the market rate itself outperformed any other specification.

2/ The Artus, Barroux and Pecha (1988) paper estimates interest rate equations for four subperiods, defined according to the policy stance, in the 1977-85 period.

3/ These findings are in accordance with statements in Patat (1987a) and in Bordes and Strauss-Kahn (1987) on the interest inelasticity of the demand for credit. Some lending categories such as mortgage lending seem to be interest sensitive whereas others are not. The TD variable used here is a broad and heterogeneous aggregation which may explain its overall inelasticity.

The fit of the equation (Chart 4) is satisfactory. The equation, picks up quite well the higher 1987 growth (though with a slight delay), implying that most of this acceleration can be explained by the retained variables. More particularly, the equation results, in combination with Chart 2, tell us that the combined effect of faster GDP growth in 1987 and the slowdown in the rate of NW expansion starting in 1986, explains a great deal of the 1987 faster growth. The post sample forecasts are not of a very high quality, although the growth rates remain within the acceptable ranges. 1/

We also attempted to identify the effect of credit controls via the use of 0/1 dummy variables. None of the specifications (using 1985 as a breaking point, or 1987, or a combination of both--i.e., a two-step dummy) led to a significant and meaningful improvement of the results. This finding further supports the statement that in the 1979-87 period the impact of credit controls on financial debt was marginal and, hence, that the 1987 reform did not significantly affect the demand for debt.

The *money demand equation* (Table 3, equation 3) yields encouraging results. Both the in-sample fit and the out-of-sample forecasts are of good quality (Chart 5). The margin of error of the forecasts is almost negligible, indicating that the 1987-reform has not disturbed money demand. The equation relates growth in real M2 demand to an error-correction term (fourth lag because of the specification used), implying a significant inverse velocity effect on short-run M2 balances. 2/ The short and long-term interest rates are also found to be significant explanatory variables with the expected signs, but low coefficients. The testing down process taught that the deposit rate had no significant impact, whereas rMon had. We therefore retained the latter in the final equation. 3/ After reparameterization, the adjustment of real money demand to inflation turned out to be complex. This adjustment is faster than the other processes as it is intratemporal. Contemporaneous changes in GW also enter the equation, though the coefficient is not very significant.

The equation was finally completed by adding each independent variable in level form, to test for possible non-proportionality properties in the steady state. The variables rLT and GW were found to be significant. It should also be noticed that the level of GW enters with

1/ One possible explanation for this performance is the provisional nature of the end-of-period data on wealth and debt.

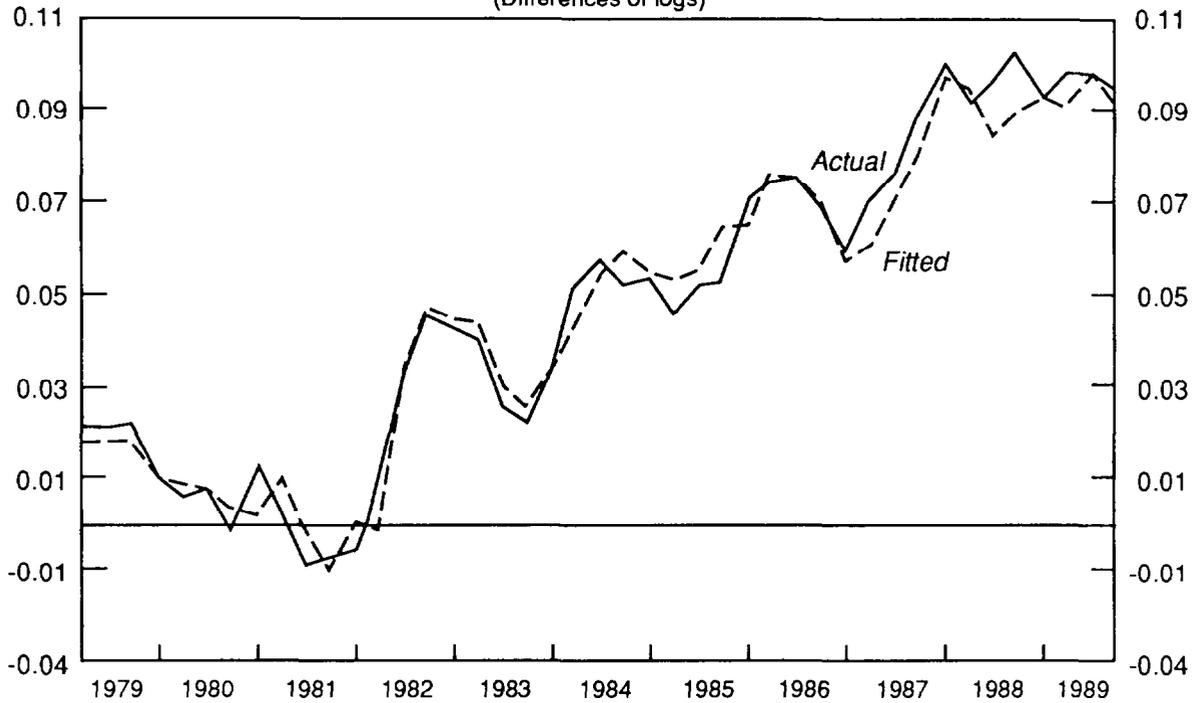
2/ A second error-correction term, specified against GW was insignificant.

3/ Patat (1987a) raises some doubts about the effect of rMon on M2, at least for the pre-1980 period, because the yields on a large proportion of quasi money were related to rMon. Our results seem to suggest that, for the post-1979 period, the redefinition of the aggregates has resolved this problem to some extent.

CHART 4
FRANCE

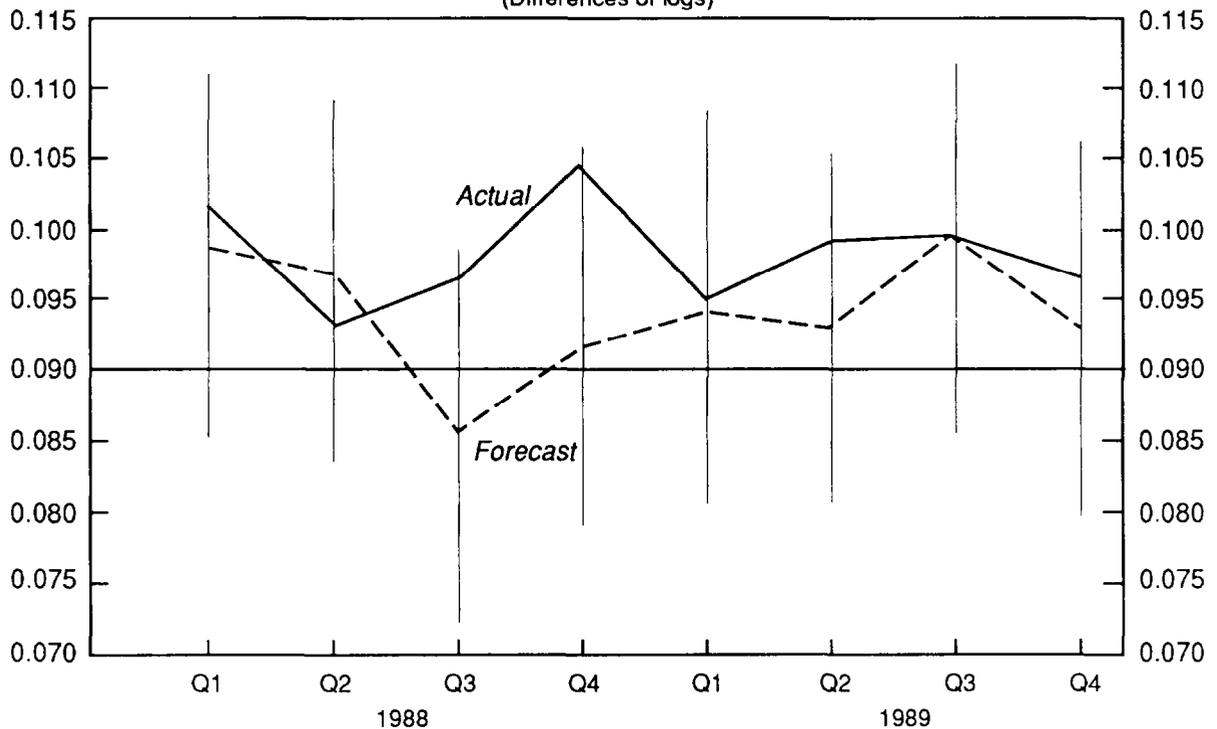
Financial debt equation: actual and fitted values

(Differences of logs)



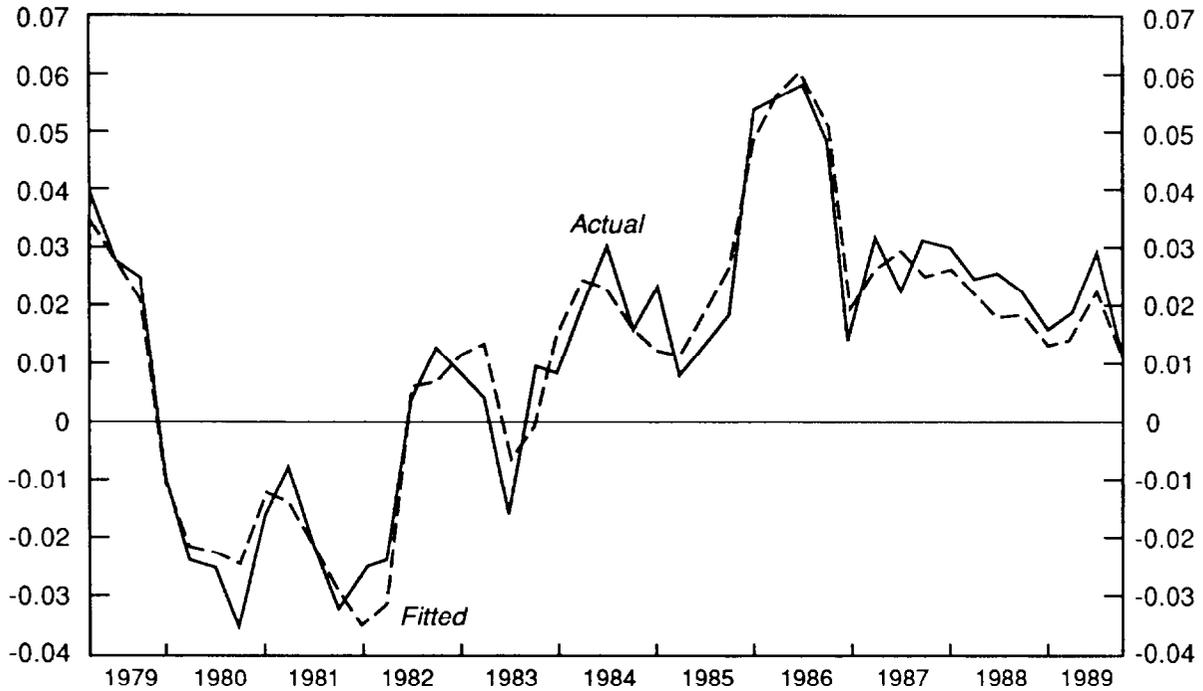
Financial debt equation: forecast performance¹

(Differences of logs)

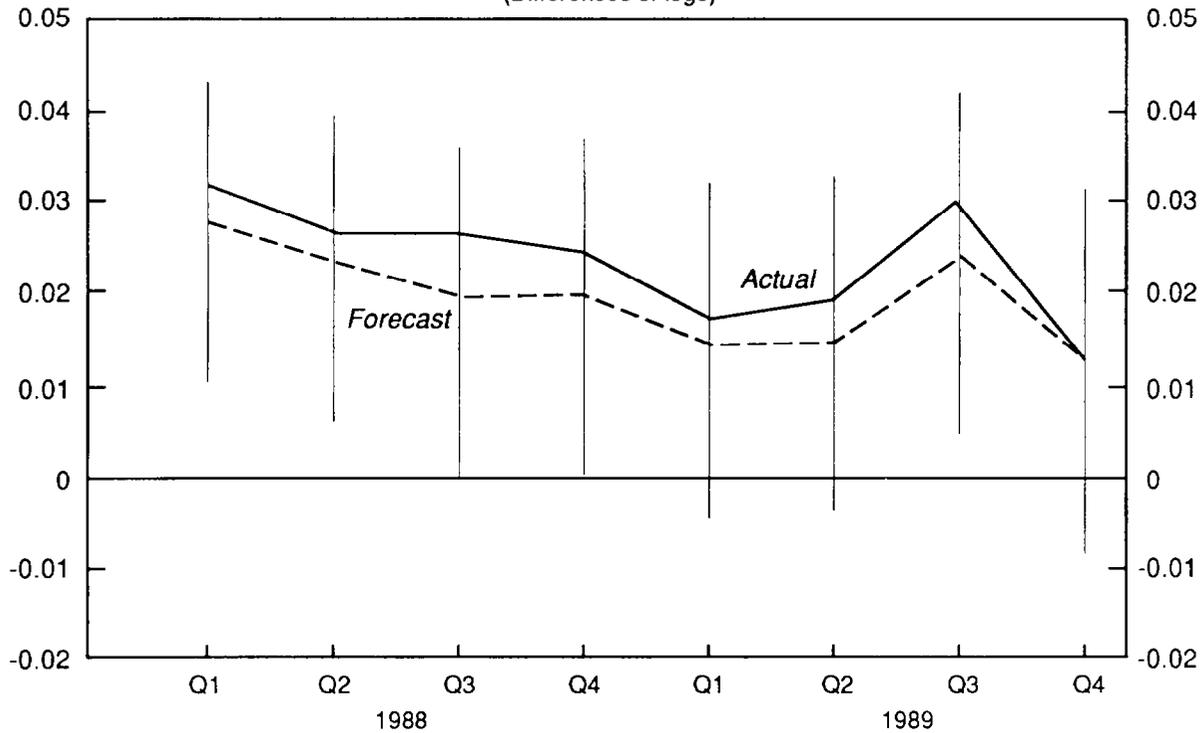


¹ The error bars show plus or minus two standard errors of the estimated value for the dependent variable.

CHART 5
FRANCE
Money demand equation: actual and fitted values
(Differences of logs)



Money demand equation: forecast performance¹
(Differences of logs)



¹The error bars show plus or minus two standard errors of the estimated value for the dependent variable.

a minus sign, whereas the contemporaneous (difference) variable has a positive coefficient. As can also be inferred from Chart 2, this implies that in the short run a (small) part of newly acquired financial wealth is allocated to M2 components, but that in the longer run a re-allocation from liquid to longer-term assets takes place, reducing the share of M2 in GW over time. These results are very similar to those reported in Bennett (1987). He was the first to explore wealth effects on money demand in France explicitly and his results also indicated that broader aggregates react negatively to wealth in the long run. ^{1/} Finally, it should be mentioned that we could not identify any independent role for income (y); this variable only enters the equation through the error-correction term.

In sum, the empirical approach yields supporting evidence for the thesis developed in this paper. In particular, the results support the view that in the 1979-86 period the interest rate was a much more important policy instrument than appeared at first glance, because of its central role in attaining the exchange rate objective. The finding that the pursuit of the money growth target does not appear in the interest rate function further strengthens the view that money had become endogenous in the policy framework. Furthermore, demand for debt does not seem to be significantly affected by the abolition of credit controls, pointing to the latter's nonconstraining nature in the 1980s. Finally, none of the equations shows evidence of major disturbances in 1987. Particularly the post-1987 stability of money demand indicates that credit controls already did not play any part in the preceding years.

V. Conclusions

In many respects, the French postwar monetary policy history is very instructive. Between the end of the Second World War and, roughly, the mid-1980s, the French monetary economy moved very gradually from a debt-based system to a market economy. As early as 1967, the authorities attempted to rely on a market-based monetary policy system. However, this experiment was rapidly aborted due to inconsistencies in the instrument-mix and to an ill-designed sequencing. In an attempt to

^{1/} Comparisons with other money demand studies for France are hard to make because they either cover different periods or use old aggregates. Dooley and Spinelli (1989), e.g., claim that in the early 1980s financial innovations disrupted money demand. Our specification does not point to any instability, even later on when the wave of innovations was more intense, but it is equally possible that the redefined aggregates we used have overcome this specific problem. It is also worth mentioning that Bordes and Strauss-Kahn (1989) specified a money demand equation with an error correction mechanism which also performs satisfactorily. However, they focus on M1.

regain control over monetary developments, the authorities resorted to quantitative credit controls at the end of 1972. These controls lasted, at least formally, until the end of 1986 and were then replaced by a market-based control system.

On the 1972-86 period, this paper has argued that, *de facto*, monetary control and the transmission process have gradually changed throughout the years so that 1987 rather marked the end of a process than a thorough reform. The empirical evidence presented lends support for these views. More specifically, it has been argued that the 1979 shift toward a dual intermediate target regime--with a *de facto* priority for the exchange rate target--marked the beginning of a new era wherein credit controls were no longer the dominant policy instrument and their effectiveness gradually eroded. The growing emphasis on the exchange rate target made the interest rate the key policy instrument and the money stock became an endogenous variable.

These transformations were further reinforced by the emergence of some self-destructive features of the credit control system. First, growing selectivity reduced the system's impact; furthermore, the authorities' efforts to reduce to a minimum competitive distortion in the financial sector, encumbered the system with so many safety valves that it became eventually unmanageable.

The interaction of these developments helps explain the smoothness of the 1987 reform. This reform was, in this perspective, not a shift from an administered credit control system to a fully market-based system, but from a pegged interest rate regime to one of guiding the interest rate. The 1987 transition was on the whole a rather qualitative leap.

Besides the reinterpretation of the policy framework transformation, it is also useful to recall some general lessons from the French liberalization experiences, especially for those less-developed countries who are attempting to conduct monetary policy via market-based approaches:

(i) the failure of the 1967-72 liberalization highlights the vital importance of an *appropriate instrument mix* and of *the proper sequencing of the reforms*. The French experiment clearly shows that reserve requirements are ineffective as an instrument to support domestic monetary management, as long as the refinancing facilities with the central bank are open-ended. The latter, still a common feature in many less-developed countries, need to be abolished in an early stage of the transition toward indirect instruments. Another important stumbling block in the French case was the lack of coherence between financial sector liberalization and monetary policy reform. This paper stressed that at the time of the 1967 policy reforms, the French financial sector was operating in such a way that the transmission of indirect policy actions was bound to fail.

(ii) The French authorities have traditionally demonstrated a preference for *reserve requirements based on assets*. Whereas their use could be justified in those days when several financial institutions were funded through the public budget, the French experience does not lend support for a generalized use of asset based reserve requirements. Apparently, inertia and a higher sense of security with this approach prolonged its use. However, experience shows that reserve requirements on liabilities are as powerful an instrument as on assets. Moreover, reserve requirements on assets always contain the temptation to use them as a selective credit tool.

(iii) France's protracted reliance on *credit controls* brings another proof of the untenable nature of this type of arrangement. Unlike in many other countries, competitive distortion was not the major issue in France. 1/ However, it turned out that the provisions, needed to avoid these negative effects were in the end part of the system's self-destructive mechanisms. The post 1972 experience nevertheless points to one very interesting aspect: the provision exempting lending based on "stable resources" from the ceilings, was not only a bridge with market-related mechanisms, it also contained positive effects on the banks' balance sheet and incentives to develop long-term financial instruments. So, as part of the sequencing of reforms, this clause is worth closer attention. However, in the early 1980s, the provision also reached its limits because of the system's growing complexities. The increasingly disproportionate growth of subsidized credits entailed that the growth rate on the credits under the ceiling had to be set extremely low. Those banks that were suffering the most from these tight ceilings were also those that had to rely heavily on the "stable resource" provision, implying that they were increasingly paying the bond rate on marginal funds.

(iv) The 1980s also offer another useful hint with respect to *sequencing*. The transition toward a market-based system was greatly facilitated by the development of a "parallel" policy framework. By pegging the interest rate and through the use of other instruments such as repurchase arrangements and outright purchases, both the central bank and the financial sector gradually got familiarized with market mechanisms. During a transition period, these arrangements may enhance the authorities' confidence in market-oriented mechanisms and the role of credit ceilings can gradually be reduced to a safety net.

(v) The French post-1972 policy framework was highly *complex and nontransparent*. The authorities set targets for credit, but these targets--which needed to be compatible with the intermediate monetary target--were actually at the instrument level. The paper has explained

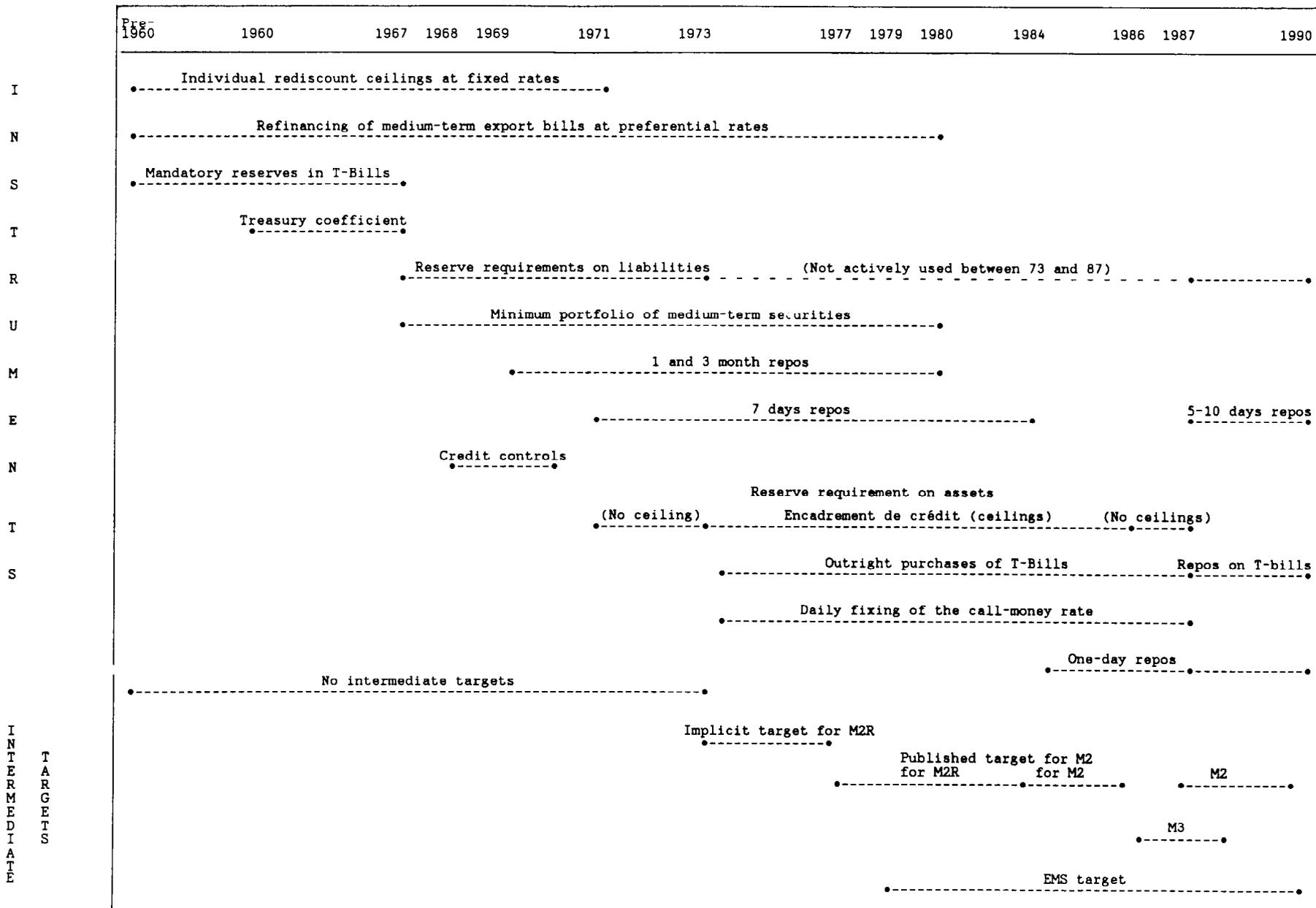
1/ However, there were some shifts in market shares in favor of those nonbank financial institutions specialized in those lending categories exempt from the ceilings (see Bruneel and Patat (1984)).

some of the technical and other problems involved in this approach. This type of ambiguities in the policy framework should be avoided. Instead, the question that should have been addressed was whether credit or monetary aggregates should be targeted. This choice depends, *inter alia*, to a very large extent on the prevailing exchange rate regime. This question, however, is beyond the scope of the present paper.

(vi) An interesting aspect of the French case was the link between the transition from direct to indirect instruments and the increase in *central bank independence*. Direct controls and selective credit procedures mostly serve specific goals set by the political authorities. The French experience clearly demonstrates that the introduction of intermediate targets enhances central bank autonomy and credibility in two ways. First, the announcement of the targets in itself increases central bank autonomy. The need for appropriate instruments to attain them, should not be underrated as a second channel. In France, the announcement of the exchange rate target and the discipline it required have particularly increased the need for market oriented instruments. By definition, these instruments give the monetary authorities a much higher degree of independence from political influences than direct controls, as they have to adhere to "the rules of the market".

(vii) Finally, the 1980s experience is also interesting with respect to the *pursuit of a dual target structure*. Although the French authorities initially emphasized the equivalence of both targets, practice has shown the dominance of the exchange rate target in an environment where exchange controls were gradually lifted. Even for a relatively large country like France, the consequences of international financial integration do not leave much leeway in terms of the independent pursuit of domestic targets. So, when exchange control relaxation will be addressed in less developed countries--particularly in those with small and open economies--the choice of the best target (exchange rate versus monetary aggregate) to influence inflationary expectations will come to the forefront.

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