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MONETARY CONTROL BY CONTROL OF THE MONETARY BASE: THE SPANISH EXPERIENCE

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1. Introduction

This paper deals with the Spanish experience of targeting monetary aggregates by controlling the monetary base. The reason for choosing monetary aggregates as final objectives for monetary policy and the specific quantification of such objectives over time have been largely omitted, except for some necessary background information. Historical material is also restricted to references to a few developments which provide an insight into present arrangements and problems.

Spain is one of the countries which has most explicitly moved, since the early 1970s,[1] towards defining the objectives of monetary policy mainly in terms of rates of monetary growth and has sought to reach these targets by controlling the monetary base.

Since the time of the civil war (1936-39) the Spanish financial system has continuously been subject to pervasive administrative restrictions aimed at keeping interest rates at artificially low levels and, given the resulting excess demand for credit, at allocating the available financial resources. All interest rates applied by banks were subject to legal ceilings fixed below market rates, and a variety of investment ratios were imposed on banks, obliging them to buy low-yielding public and private-sector bonds or to grant long-term credit to particular industries. In addition, some types of both public and private-sector paper were unconditionally eligible as collateral for credits from the Bank of Spain which consequently had little scope to exert any control over monetary expansion. A side effect of these regulations was that holdings of fixed-interest securities by non-banks became very small and secondary markets almost vanished. Although the present situation is very different in many respects from that prevailing in the 1940s, the 1950s or the 1960s, most of these features were still evident in the early 1970s, when the new approach to monetary policy was adopted, and some remain so even now. Thus, despite a clear trend towards liberalising the regulation of the financial system,[2] interest rates at up to one year remain subject to control, investment ratios continue to apply at reduced levels, there are few issues of public or private-sector bonds at market rates of interest and the bond market remains undeveloped. Except for a purely interbank market, no money market exists either. Moreover, exchange control regulations leave only limited scope for short-term capital movements.

As a result, until the early 1970s a monetary policy designed to guide developments in monetary aggregates or interest rates on a continuous basis did not exist. Instead, very restrictive action relying heavily on quantitative control of bank credit was taken intermittently on an ad hoc basis at times of crisis. Despite its effectiveness in the short run this usually had very disruptive effects on economic activity.

After a final such episode of monetary restraint in late 1969 the authorities decided that the time had come for a more gradualist and continuous approach to monetary policy. From then onwards there was no real alternative to defining monetary objectives in terms of the growth of the money stock and to controlling monetary expansion by controlling the monetary base.

Interest rates could not reasonably be considered as an appropriate objective, since there were no observable market rates and there was no prospect of the widespread liberalisation of financial regulations necessary to permit competitive markets to emerge. Even if interest rates were to be completely liberalised, the widespread practice of credit rationing by banks and the limited degree of competition would have prevented it from becoming fully effective for some unknown period of time. Furthermore, given a long tradition of inflation and the lack of any prospect of its being eliminated in the short run, the problem of establishing the relationship between real and nominal interest rates was a major one.

Credit aggregates did not look very attractive either. Credit to the private sector, a measure strongly favoured by some observers even to this day, would not have been an appropriate choice. And total domestic credit was only, after all, a particular way of quantifying monetary expansion, and a rather rigid one. Since, moreover, it was generally agreed that consideration would have to be given to other real and financial variables in setting monetary growth targets, there was no serious objection to this approach to monetary policy. Furthermore, the limited econometric evidence available, about which more will be said later, showed that a fairly stable demand-for-money function did in fact exist in Spain.

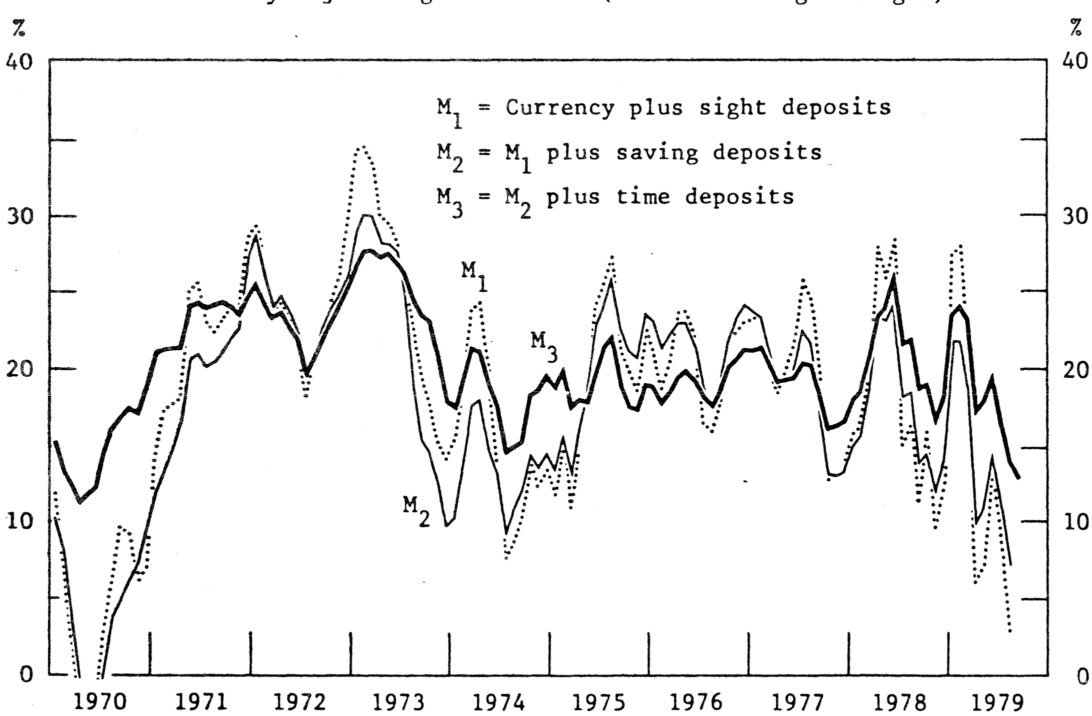
With respect to the control of monetary expansion, legal restrictions on interest rates applied by banks and the absence of efficient money or bond markets precluded the possibility of finding any close relationship between the money stock and market interest rates and, consequently, the use of any control technique relying on central-bank action designed to influence market interest rates. There was therefore no real alternative to quantitative targeting of the monetary base, which, in conjunction with reserve requirements, was adopted as the only means likely to achieve a measure of continuous and gradual control of monetary growth.

Legal controls on interest rates explain the choice of the particular concept of money which has been adopted as a target: a wide one covering any kind of domestic-currency deposits held by non-bank residents (i.e. sight, savings and time deposits, including certificates of deposit). Banks have always displayed great ingenuity in devising all kinds of procedures to evade controls on interest rates; some of them make the formal maturities and means of payment characteristic of deposits meaningless. This was possible because the interest rate regulations have, as a rule, been applied rather leniently. As the use made of such practices has, in addition, changed in intensity depending on the tightness of credit conditions, it has proved difficult to assign a clear meaning to the level of or changes in particular categories of deposits. Changes in the structure of legally fixed rates, which have not been infrequent, and, recently, a partial liberalisation of the controls have led, furthermore, to substantial shifts of funds between different categories of deposits. Under these conditions, the interpretation of movements in narrow concepts of money (see Graph 1) has been subject to more uncertainty than that of movements in the very comprehensive measure which was adopted. The broad concept also had obvious advantages in terms of controllability through the monetary base. Econometric evidence has also tended to favour this particular definition, though there have been exceptions here, and the Bank of Spain calculates and always keeps a close eye on developments in two narrower concepts of money.

GRAPH 1

MONETARY AGGREGATES

Seasonally adjusted growth rates (3-month moving averages)*



* Monthly data are averages of daily figures.

This brief description of the background to the new approach to monetary policy may suffice to explain the shortcomings in it which were to be expected, as well as the fact that its development during the 1970s has been highly experimental, involving a considerable learning process on the part of the Government, the Bank of Spain, the banking system and the public at large. In the process steps in the right direction have gone hand in hand with unwarranted expectations, institutional resistance to changes, misjudgement of particular developments and even some plain errors. More than once, particularly in the early years, the risk that the whole effort would be abandoned seemed great. Despite the various setbacks, however, sufficient progress has been made to say that by now a point of no return has been reached. This progress was possible firstly because, owing to the lack of historical precedents, it was fairly easy to modify those instruments of monetary control (such as reserve requirements) that were peculiar to the new approach. More important, however, is the fact that the new approach to monetary policy shed an entirely new and coherent light on those administrative regulations that were more difficult to remove or modify because they were an entrenched legacy of the past. As they came to appear more and more obviously in conflict with the general aims of monetary policy, the way was gradually paved for each new round of changes. An important case in point may be that of quantitative targeting of the monetary base, which inevitably obliged the Bank of Spain to abandon its former clumsy intervention techniques and to accept an increasingly flexible interest rate policy in its transactions with banks.

It seems appropriate to make some general reference here to attempts made, mainly at the Bank of Spain itself, to build the relationships between the money stock, the monetary base, interest rates and non-financial variables into econometric models. Since the introduction of the new monetary policy, serious work has been undertaken on the demand for money and for its various components on the one hand and on the demand for excess reserves by banks on the other. Some attempts to link the results with investment functions within a general model of the Spanish economy have also been made. In the Spanish case all this work has been plagued by more than the usual amount of difficulties. The lack of reliable up-to-date statistics on many crucial non-financial variables (GNP and its components, wages, import and export prices, or even industrial production) has thwarted most attempts to extend the limited amount of work already done. A second problem has been the lack of any reliable measure of actual (as opposed to the - not very significant - legal) level of nominal interest rates and the difficulty of establishing meaningful measures of credit rationing. The third problem has been the fact that, as a result of the substantial changes which have been made in monetary policy and in the regulations governing banking activity, it has proved difficult to find significant regularities that can be extrapolated into the future. This is very obvious when the experience of the 1970s is compared with that of the 1960s or 1950s, but even in the more recent past so many minor institutional changes have taken place that behaviour has had little chance to settle down into regular, predictable patterns.

Nonetheless, the limited amount of econometric research which has been undertaken has proved useful. No unexpected discoveries have come out of it; generally it has only led to confirmation of results established for other countries. Examples include the stability of the demand-for-money function, with an income elasticity slightly higher than one; a fairly high elasticity of the demand for different kinds of deposits to relative interest rates; a lagged response of banks' demand for financial assets to the supply of bank reserves. Though the results have always been clouded with uncertainty, particularly with respect to the prevailing lag structures, the fact that such results could be obtained for the Spanish economy has proved extremely helpful in giving support to an implementation of monetary policy which takes proper account of the relationships involved, something that was not always done in the earlier years.

At the same time, the new approach to monetary control has led to substantial research on the statistical properties of monetary series, which have proved extremely useful for making seasonal adjustments and short-term forecasts.

2. The general approach to the control of the money stock

At the very beginning of the new approach to monetary control the Bank of Spain decided to rely on a "bank reserves/bank deposits" multiplier rather than on a "monetary base/money" multiplier. This decision was based on convenience rather than theoretical considerations and did not make any substantial difference given the stability in the evolution of currency in circulation. This permits targets for bank deposits to be derived from the monetary targets. Bank reserve holdings consist almost entirely of cash and non-remunerated deposits with the Bank of Spain.[3] The reserve requirements together with a rather stable demand for excess reserves by banks account for the stability in the bank reserves/bank deposits multiplier.

Monetary targets are set in terms of seasonally adjusted rates of growth over specified time periods, which have never exceeded one year. Half-yearly targets have often been set but shorter periods have generally been considered inappropriate because of the limited degree of precision which can be attained in monetary control. For the same reason a degree of latitude has always been incorporated into the target figure. Various techniques, none of them fully satisfactory, have been used for setting a "range" for monetary growth rates. These need not be described here; the main thing is that precision in the very short run or fine tuning in monetary control are ruled out. There are two main reasons for this.

Firstly, indirect control of the money stock by control of bank reserves and reserve requirements is technically inappropriate, however well it is carried out, for attaining monthly targets. This provides the rationale for setting ranges of growth rates or some medium-term path. It must be stressed, however, that the Spanish experience shows that this is due to the difficulty of forecasting fluctuations in excess bank reserves, i.e. in the multiplier, since it has been proved technically feasible to control total bank reserves with a high degree of precision.

Secondly, it is not clear that precise short-run targeting of the money stock is necessary and the desirability of avoiding unnecessary strains in financial markets that might result from too rigid an approach to monetary control has to be taken into account. Hence, although precise control of bank reserves is possible, efforts to meet targets are not pursued blindly. More will be said later about this second aspect of the problem.

At all events, monetary control rests upon control by the Bank of Spain of the evolution of bank reserves, exercised on a daily basis through adjustments in the Bank of Spain's net lending to the banking system. But before describing this, a few words may be said about more general policy measures as instruments for monetary control.

Since the banking system's net lending to the Government and its net foreign assets (and especially their most volatile elements) are largely accounted for by the Bank of Spain, the burden of short-run adjustments imposed by monetary control fall, via changes in the Bank of Spain's net lending to banks, upon banks' lending to the private sector. In principle, this has not been considered an undesirable state of affairs. Still, definite views have usually been taken about the appropriate magnitude of overall financial deficits or surpluses of the public and private sectors and in the balance of payments. At the same time a general aim has been to avoid, if possible, major short-run gyrations in the flow of bank credit to the private sector. This means that measures affecting the size of the government deficit and its financing in the banking system or the capital market, exchange control, the exchange rate, and so on, have been considered to be relevant for monetary control and have indeed been taken at times with monetary objectives in mind. However, such measures are taken not with the aim of controlling the money supply but in order to mitigate the impact of monetary control on bank lending to the private sector. Even then, the nature of the measures involved implies that only broadly defined and medium-term effects could be pursued, normally within the framework of annual forecasts of financial flows.[4]

3. The design of reserve requirements

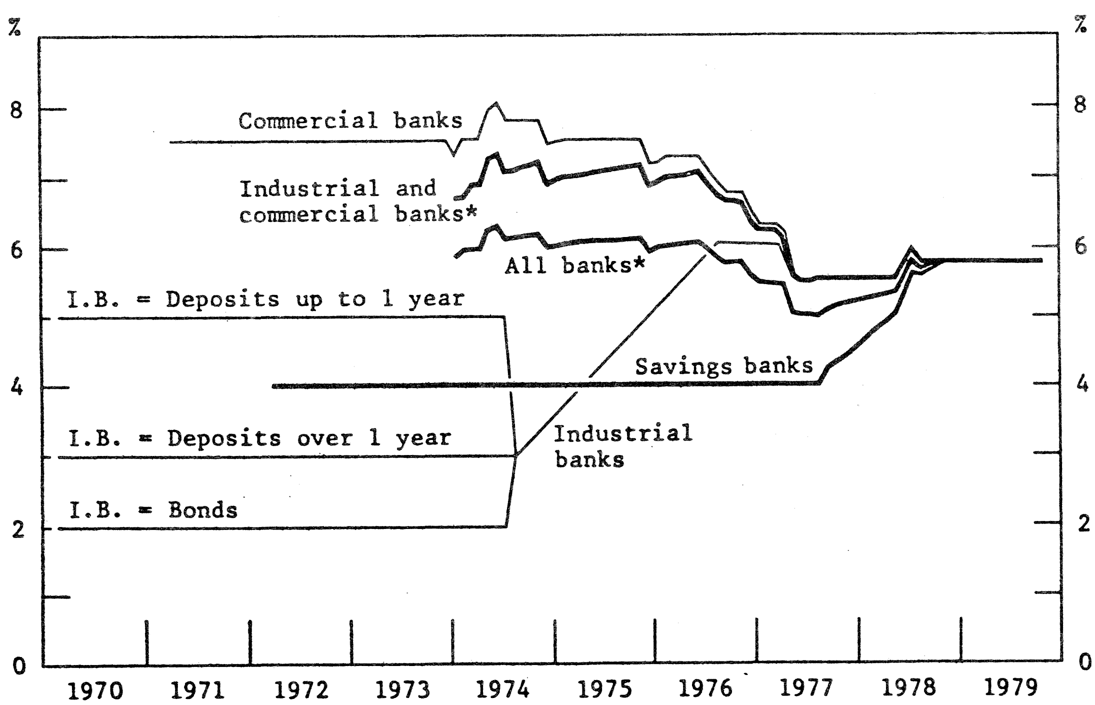
While the legal definition of the numerators was very clear from the beginning and has not changed over time, all the remaining aspects of the legal definition of required reserves have gone through substantial changes.

Although reserve requirements had been applied since the early 1960s to industrial banks - a small group of banking institutions - they did not play any rôle in monetary policy until their extension to commercial banks in December 1970. At the beginning of 1972 reserve requirements were also applied to savings banks, and since then all deposit-taking institutions have been subject to reserve requirements.[5]

The initial structure of reserve requirements was a diversified one, but through a process of gradual changes a complete unification of the rates was reached by October 1978 (see Graph 2). Reserve requirements have since consisted of a single ratio (5.75 per cent. at present) applicable to all kinds of deposit-taking institutions and to any type of deposit, which makes the Spanish case rather unique. Unification was in part achieved by reductions in the initially rather high level of reserve requirements on commercial banks.[6] Needless to say, the aim of unifying the ratio was to avoid the control problems deriving from shifts of funds from one kind of deposit to another (which can be very dramatic at times of changes in the structure of legally controlled interest rates on deposits) and from one type of institution to another.

GRAPH 2

LEGAL RESERVE REQUIREMENTS



* Weighted average.

Bank liabilities subject to reserve requirements always consisted mainly of domestic-currency deposits of non-bank residents, but there were several minor exceptions which differed by class of institution. These exceptions were gradually eliminated, and bank deposits subject to reserve requirements are now defined in exactly the same way as they are in the definition of the money stock.

Reserve requirements have always been on a non-lagged accounting basis: since mid-1973 they have been based on averages of daily figures over ten-day periods.[7] The month is divided into three reporting periods (working days 1 to 10, 11 to 20, and 21 to the end of the month), for which the average of liabilities subject to reserve requirements is calculated. Reserve holdings are averaged over similar ten-day periods which are, however, lagged by two working days (days 3 to 12, 13 to 22, and 23 to 3, adjusted when necessary for holidays). The lag involved is therefore negligible. In average reserve holdings any daily amount in excess of the reserve requirement plus one percentage point (i.e. more than 6.75 per cent. of eligible liabilities at present) is ignored and daily deficiencies equivalent to more than 1 per cent. below the reserve requirement are forbidden.[8,9] A penalty interest rate, linked to interbank day-to-day rates, is charged against any deficiency in required reserves.

From the point of view of monetary control the present definition of reserve requirements is quite satisfactory in that there is a single ratio common to all institutions and kinds of monetary liabilities, calculated as a basically non-lagged average of daily figures over a short period, with eligible assets and liabilities defined in such a way as to have the maximum significance for monetary control purposes.[10]

The Spanish experience with reserve requirements based on non-lagged accounting has been quite positive with one important qualification: management of the supply of bank reserves by the central bank must take account of a variety of considerations which are discussed below (section 7).

4. Guidelines for the supply of bank reserves by the Bank of Spain

As mentioned above, monetary control is carried out with a degree of flexibility which, however, is usually reflected less in the setting of the targets - though there are occasional minor changes in them - than in day-to-day management of the supply of bank reserves. Thus monetary growth targets are translated into targets for bank reserves in a quite mechanical way.

Seasonally adjusted monthly figures for the monetary targets, which relate to averages of daily figures, are the starting point. A comparable forecast (revised on a monthly basis) of currency holdings is subtracted to derive a target for the total bank deposit component of the money stock.[11] Seasonality is introduced and the resulting monthly average is used as a reference in estimating a daily series for bank deposits during the month. The reason for this is that substantial intramonthly seasonality is present, particularly in some months of the year. The required reserve ratio plus an estimated excess reserve ratio are applied to the figures for bank deposits to give a daily profile for bank reserves. All these calculations are very mechanical and no lag whatsoever is introduced into the relationship between bank reserves and bank deposits. However, the estimate of excess reserves is based not on recent past performance or short-run forecasts but on a medium-term forecast of the average level of excess reserves "desired" by banks.

This daily path for bank reserves is not conceived as a target but as a point of reference for decisions about the volume of daily intervention of the Bank of Spain, though even for this purpose daily figures per se are not always used; it is often more appropriate to rely on averages for the ten-day periods used in reserve requirement accounting.

The remaining mechanical aspects of the procedure used are as follows. The Bank knows the level of the banks' deposits with the Bank of Spain at the close of business on the previous day, and has partial information and estimates concerning banks' cash holdings. In addition, it has a fair amount of information about foreign and public-sector operations due to take place during the day and reasonable estimates of the expected changes in currency holdings and some other major factors such as tax receipts. Advance knowledge concerning any use by banks of the small unconditional credit margins still available to them and special credits which are occasionally granted to some banks is also brought into the calculation. The Bank knows which of its outstanding operations with banks come to maturity every day and has the daily reference figures on bank reserves mentioned above. On the basis of all these elements, a preliminary gross figure for the intervention of the Bank of Spain in the course of the day is calculated. This serves as the starting point in the process of deciding the actual volume of such intervention.[12]

Needless to say, all the forecasts mentioned in the previous paragraph are subject to a margin of error. This means that, assuming that it is possible to undertake the volume of intervention indicated by the calculations (this is normally, though not always, the case) and that there is a desire to intervene on the scale implied (which need not be the case), departures from the daily targets for bank reserves are bound to occur. But errors in individual forecasts are fairly moderate, and only exceptionally reach unacceptable proportions; they cancel out to a substantial extent when aggregated and their randomness makes it certain that they also cancel out in the course of time. The last characteristic is, of course, the most relevant, since it permits very accurate targeting of moving averages calculated over a period that, in the Spanish experience, is not longer than two months. Finally, bearing in mind that what matters is not the daily level of reserves but the average level over the ten-day accounting period or even longer periods, there is adequate scope for counterbalancing deviations from the target on a given day by deliberately bringing about deviations in the opposite direction in following days. The Spanish experience suggests that the average daily level of bank reserves over the ten-day accounting period can be controlled with a margin of error which is seldom larger than $\pm$ 0.5 per cent. and quite frequently less than $\pm$ 0.25 per cent.

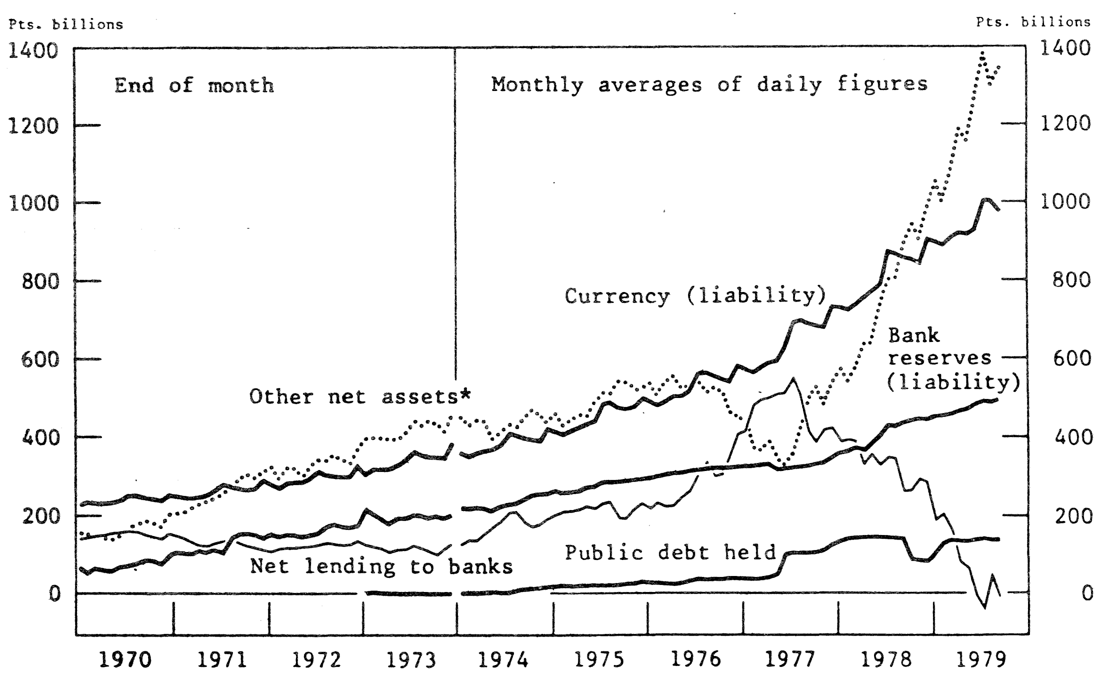
It must be stressed that all the calculations described so far are fairly mechanical but are not meant to be a basis for mechanical behaviour on the part of the Bank of Spain. Though they provide a basic guideline, which the Bank normally tends to follow, minor departures take place very frequently and quite sizable ones do occur at times (the latter usually result in a revision of money growth targets at a later stage).[13] This problem is discussed below (section 7). It is worth pointing out, however, that although departures from the reference figures do occur, the Bank of Spain gives high priority to keeping bank reserves on a smooth growth path and to avoiding sudden and sustained departures from trend as experience has shown that these are very disruptive and that they weaken monetary control.

5. The control of bank reserves

With respect to the instruments used by the Bank of Spain to control bank reserves, the main consideration is that in Spain, as in many other countries (though not in the Anglo-Saxon ones), the banks have always been deeply indebted with the central bank and, though the average level of this indebtedness has changed substantially over the years, controlling bank reserves is mainly a matter of exerting adequate control over central-bank credit to banks (see Graphs 3 and 4). Only in exceptional circumstances brought about by the very large surpluses in the balance of payments in 1971-1973 and 1977-1979 has this general approach proved inadequate.

GRAPH 3

BANK OF SPAIN: SCHEMATIC BALANCE SHEET

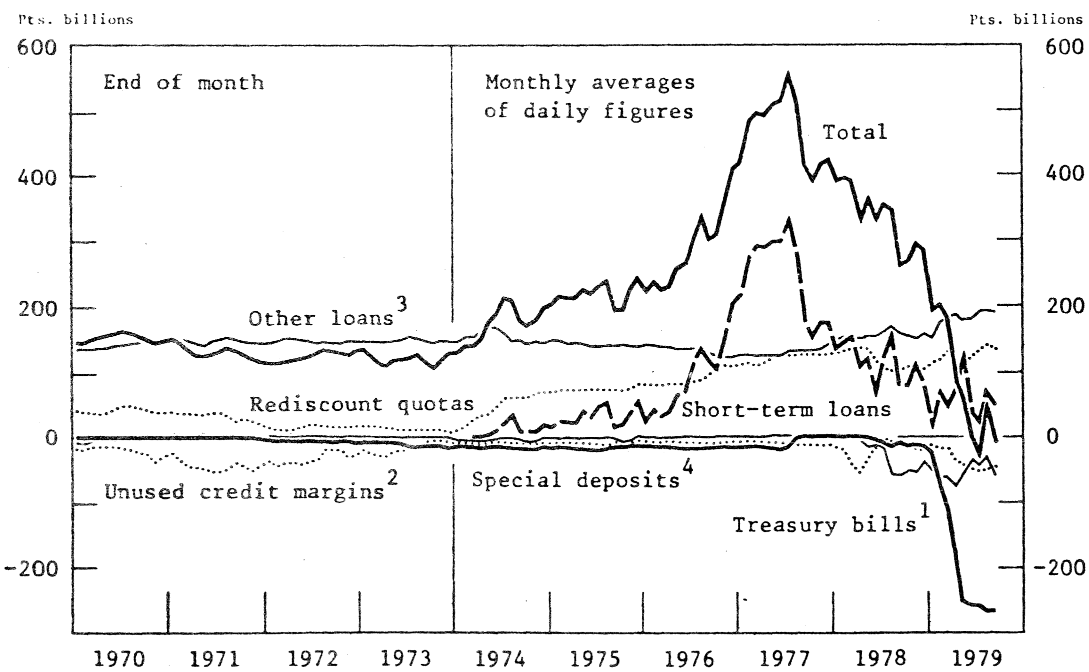


* Mainly foreign assets, loans to the public sector and capital accounts.

As in many other countries, however, central-bank credit in Spain has traditionally been provided under rather inflexible arrangements (such as rediscount quotas) or, even worse, under unconditional arrangements that left the central bank no scope for discretionary action (for example with unrestricted facilities for the discounting of long-term export or investment credit). It would take too much space to describe how such serious problems have gradually been overcome. Suffice it to say that all unrestricted credit arrangements have been either discontinued or frozen, and that rediscount quotas have been kept at moderate levels. To the extent that some significant amounts of eligible paper remain outstanding, the problems have been made as small as possible by keeping the interest rates applied by the Bank of Spain well below market rates, so that the facilities have been fully utilised most of the time. Achieving adequate control over bank reserves has consequently become a matter of managing new lending or borrowing arrangements more amenable to control in a way that supplements or, if necessary, offsets changes in outstanding loans under the old inflexible arrangements.

GRAPH 4

BANK OF SPAIN: NET LENDING TO BANKS



1. Actually a Treasury deposit account with the Bank of Spain in which the proceeds of Treasury bill sales to banks are blocked.
2. Of which use is unconditional. They are related to rediscount quotas and to "other loans".
3. Old unconditional credit arrangements which are bound to disappear in due course plus some special credits to a few institutions.
4. Required reserves against bank deposits of non-residents in domestic currency plus (in 1979) special remunerated deposits (3 per cent. of bank deposits subject to reserve requirement).

Because of the importance attached to keeping the growth of bank reserves on a smooth course, efforts were concentrated on developing instruments which would permit the Bank of Spain to influence its net lending to banks on a daily basis. The process has been slow but a situation has now been reached in which intervention can be managed reasonably flexibly by using the following instruments.

Increases in bank reserves can be brought about very easily by granting short-term loans. Since mid-1977 the Bank of Spain has offered the appropriate gross amount in a daily auction of day-to-day loans.[14] Auctions are announced in advance as they only take place when the Bank of Spain feels there is a need to increase its loans, but the total amount to be allocated is not made public. Each bank is allowed to make up to three different bids and loans are allocated, up to the amount chosen by the Bank of Spain (which may be different from the one initially envisaged), by accepting the highest bids at the specific rate offered in each bid.[15] Marginal and weighted average rates are published, as well as the total volume of loans granted. As a result of these procedures, the marginal rate on Bank of Spain loans has become very closely linked to the day-to-day interbank rate; with certain qualifications, to be dealt with later, the Bank of Spain has given up control over its own rate.

Bank liquidity can be drained off in a flexible way by letting the volume of day-to-day lending fall to the necessary extent, provided that the volume of outstanding loans is sufficient. That has normally been the case except during periods of very substantial balance-of-payments surpluses, when day-to-day lending fell to zero.

To keep bank reserves under control in these circumstances, the Bank of Spain has had recourse to sales of Treasury bills specially designed for the purpose. The bills are marketable, but only among banks, since the public is banned from purchasing them, and have maturities which have varied between 7 days and 3 months. The proceeds of the sales are not available to the Treasury but instead are blocked in a special Treasury account with the Bank of Spain. The sale price (and occasionally an advance repurchase price) is set by the Bank of Spain, which offers the bills on tap. It can thus be said that the paper has nothing to do with the Treasury except in name, and is actually a kind of Bank of Spain paper.[16] However, the name prevented the Bank from practising an interest rate policy as free as that applying to its loans and from offering the bills on an auction basis. As a result it tended to be rather difficult to make them attractive enough to provide an efficient means for draining off bank liquidity.[17] Recently a more flexible interest rate policy has been followed.

The asymmetry in the availability of instruments to increase and to reduce bank liquidity explains why, when confronted with the need to bring about a substantial, but flexible cut in bank liquidity, appealing options are still increases in reserve requirements, a call for special remunerated deposits (as was made in early 1979) or cuts in rediscount quotas which will put banks back in a position where they need to become indebted to the Bank of Spain on a day-to-day basis.

This calls for an important general remark. The Bank of Spain tries to bring about a smooth development of bank reserves, but from time to time measures are taken that have a heavy impact on the level of available or required bank reserves, like changes in reserve requirements, changes in rediscount quotas, discontinuous issues of Treasury bills or calls for special deposits. In contrast to what commentators usually say about them, such measures are never meant to have a direct impact on bank reserves. As a matter of fact, any such impact is simultaneously offset by changes in the use of more flexible instruments - generally day-to-day loans to banks. Discontinuous measures of a restrictive character are, consequently, intended only as a means of rebuilding the level of short-term credits after a decline, which may be necessary to enable a gradual draining of reserves at a later stage. Discontinuous measures of an expansionary nature have usually had quite different aims: usually they are intended either to give banks some assurance as to the stability of central-bank net lending in the short run or to reduce the incidence of monetary control policies on banks' profits.

The Bank of Spain provides some exceptional credit facilities to banks. Under the existing formal arrangements, banks can obtain day-to-day loans up to a certain standing ceiling limit. Penal rates linked to the day-to-day interbank interest rate and highly progressive in relation to the amount of the loan are applied, and though the Bank has full discretion to refuse to grant these loans not much use is made of it. On a completely discretionary basis, the Bank may provide help to banks in special difficulty on an ad hoc basis. Such credits constitute only a small part of total lending to the banking system and are counterbalanced by a corresponding reduction in the volume of loans offered to banks on the normal basis.

Altogether, the Bank of Spain has succeeded in establishing very flexible means for increasing bank reserves, as well as for draining them off in moderate amounts. Large-scale draining-off of bank reserves is more difficult but, although the Bank of Spain has occasionally lost control over bank reserves, it has gradually become possible to achieve control with a reasonable degree of success. In the process the Bank of Spain has been obliged to follow an increasingly flexible interest rate policy. This has been developed fully in the case of loans to banks but only up to a certain extent in the case of sales of Treasury paper.

In contrast with the practice in many other countries, in Spain no importance has been attached to the effects of the cost of central-bank credit upon the adjustment process in the banking system. It is true that the Bank of Spain has followed a policy of charging market-related interest rates on short-term loans, which means that very high rates have been charged from time to time. Though the Bank of Spain obviously accepted the cost implications of such interest rates, their main purpose was always to keep bank reserves close to the target. On the other hand, short-term loans were only a fraction of total borrowing by the banks from the Bank of Spain, and changes in the average cost of the banks' overall indebtedness to the Bank of Spain have only been moderate. As a result of changes in reserve requirements or in the structure of net lending, some of the changes in cost that have taken place might even be said to have been in the wrong direction from the point of view of monetary policy. This attitude of the Bank of Spain has mainly reflected the fact that, as a result of controls on interest rates applied by the banks, little reliance is placed on the rôle of interest rates in the adjustment process in the banking system. If at some time in the future interest rates are freed of controls and start playing a more significant rôle, it is likely that the Bank of Spain will revise its present approach to this matter.

6. The interbank money market

To complete the description of the main institutional arrangements relevant to the conduct of monetary policy, reference will now be made to the recent development of a very active market for interbank loans.

Interbank lending had been free of interest rate controls since 1964,[18] but interbank transactions took place only occasionally. The rapid development of interbank lending since 1973 was a result of (a) the virtual elimination of credit margins giving banks automatic access to the Bank of Spain; (b) the absence of incentives to use excess reserves for reimbursing credits from the Bank of Spain, since interbank interest rates were normally above those applied by the Bank of Spain; and (c) the definition since mid-1973 of reserve requirements in terms of averages of daily figures, with a limit on the eligibility of excess reserves.

Some banks were quicker than others to take advantage of such operations and a few of them engaged in pure arbitrage operations. Some freelance interbank brokers started to operate. The fact that at the time the Bank of Spain was distributing its loans at rates below market rates and on a proportional basis gave an artificial, but perhaps useful, impetus to interbank operations. The variable and occasionally very high level of interbank interest rates also offered good profit opportunities to those willing to participate in the market. First the commercial banks and then the savings banks gradually created money-market management departments, as they slowly came to realise that good cash management could make a sizable contribution to their profits. By the time the Bank of Spain introduced its auction system for the allocation of loans to banks the interbank money market was so well developed that this measure, which might have been a setback for the market, had little impact on the volume of interbank operations.

The development of the interbank money market has been a mixed blessing. It has been extremely important in that it has given banks the opportunity of minimising their excess reserve holdings, which was very desirable as a precondition for guaranteeing the effectiveness of monetary control. It has also provided a lot of information to the Bank of Spain, particularly because from 1976 onwards most interbank transactions were executed on a voluntary basis as matched telephone orders to the Bank of Spain for the transfer of funds on its books. This information has been very valuable both in assessing monetary conditions and as a warning signal indicating special problems at particular institutions.

On the negative side, however, is the fact that the evolution of interbank interest rates has been rather bizarre (see Graph 5) with several short periods of extreme tightness. In the absence of other reliable market interest rate indicators a lot of attention has been paid to interbank rates as indicators of general monetary conditions. This practice occasionally led to minor changes being made in monetary policy in order to cope with what was considered an undesirable degree of tightness. But the relationship between interbank rates and other rates applied by banks has actually been rather loose, even when account is taken of the widespread evasion of legal controls over short-term interest rates. These same legal controls, the absence of a broader money market and the rigidities with which the banks had to contend in the process of adjustment are the main reasons for the narrowness of the interbank market, in which fierce competition for a strictly limited volume of bank reserves occurs from time to time. It is no wonder therefore that, though movements in interbank rates are generally in the right direction, they tend to be a poor measure of the tightness of overall monetary conditions.

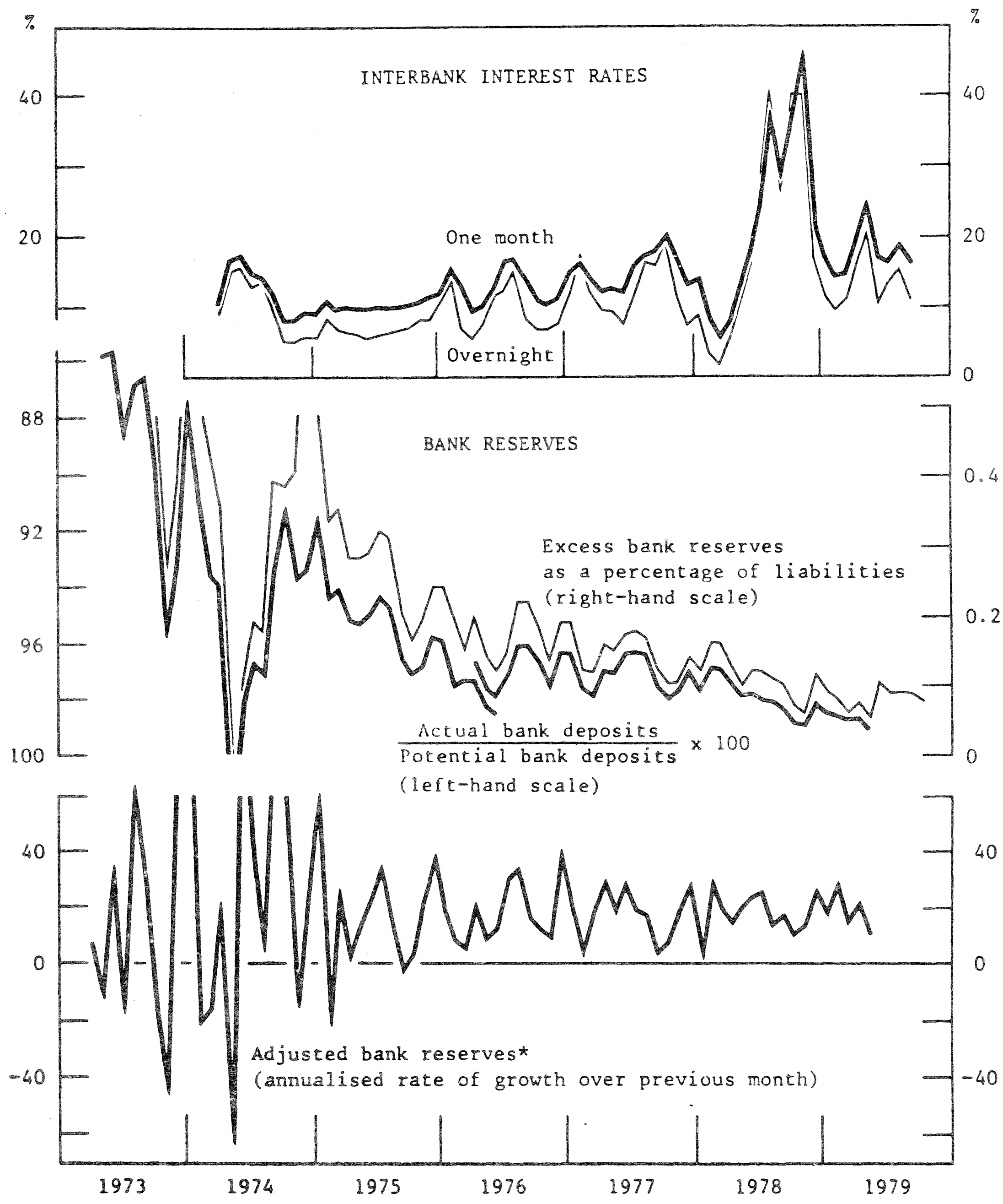
7. The behaviour of the Bank of Spain

It is appropriate to turn now to the criteria used by the Bank in managing its actual monetary control operations.

The Bank of Spain and the monetary authorities in a wider sense[19] had to learn by experience the correct way to implement a policy based on monetary targets. Spain has had a long tradition of excessive reliance on monetary policy as an instrument for demand management, which has mainly reflected the rapid and effective results achieved whenever credit conditions tightened substantially and a traditional reluctance to place any reliance on fiscal, exchange rate or incomes policies. Hence, it is not surprising that policymakers widely believed the relationship between rates of monetary expansion and developments in the real economy or in prices to be close and immediate. There was also a widespread belief that the relationship between bank reserves and monetary expansion was close and contemporaneous. It has taken several years for policy-makers to come to the conclusion that no such immediate results are to be expected.

GRAPH 5

INTERBANK INTEREST RATES AND BANK RESERVES



* Adjusted for required reserves and for seasonality.

Money growth targets have never been set in a way which implied sudden changes in the rate of monetary expansion. The targets have not usually provided for much change from year to year, and a clear assumption underlying the new approach to monetary policy has always been that any changes in the growth rate of the money supply which were planned had to be gradual. Normally, moreover, only departures from target on a quarterly basis are considered worth worrying about, and even when cumulative deviations build up to a sizable amount no attempt is usually made to offset them in the short run. However, particularly in the early years, there was a clear tendency to manage bank reserves in a "nervous" way. This was due partly to the lack of instruments flexible enough to achieve more stable results, but also to misunderstandings about the nature of the new approach and to the desire to attain quick results. Graph 5 shows clearly how unstable the growth of adjusted bank reserves was up to 1975, the very restrictive actions of November 1973 and May 1974 deserving particular mention. But it shows also how the Bank of Spain has gradually been able to stabilise the growth of bank reserves. It is as true to say that this was made possible by new and more flexible intervention techniques, as it is to say that the techniques of intervention were made more flexible in order to cope with the need to make the growth of bank reserves more stable.

This is perhaps the most important general lesson from the Spanish experience. Non-lagged reserves accounting means that banks have little scope to adjust to sudden changes in the level of reserves, which show up to a large extent in changes in excess reserves (or even in a generalised deficiency in required reserves, as the case may be), leading to large fluctuations in interbank interest rates. If, in addition, such large changes are frequent and in opposite directions, the banks' demand for excess reserves is likely to increase. This in turn may, at a later stage, weaken the impact of the central bank's policy. Since banks respond only to changes in excess reserves which are deemed to be permanent, stable growth in the supply of bank reserves is crucial if banks are to develop stable expectations and to manage their portfolios in a gradualist way, compatible with the aims of the authorities. Consequently, non-lagged reserves accounting does not provide a way of ensuring a mechanical link between bank reserves and bank deposits in the short run, but instead a channel whereby the central bank provides banks with a regular flow of information on the desirable future course of their expansion.

The seeming paradox involved in lagged bank responses and reserve accounting which is not lagged can be resolved if account is taken of the fact that monetary control involves important elements of inertia and requires steady behaviour on the part of the central bank. This means that there is no scope for abrupt changes in the monetary growth rate or rapid correction of deviations in the actual figures from the target course.

Some particular implications of this which have been found to be relevant in the Spanish case are as follows:

(a) It is absolutely crucial to avoid any significant or sustained upward departure of bank reserves from target since this inevitably leads to expansion of bank assets and any subsequent attempt to bring reserves back on target is bound to create serious tension.

(b) In general, small accelerations or decelerations in the growth of bank deposits when bank reserves are about on target do not justify corrective action, since an excessive expansion is bound to reach its limits very quickly and an inadequate expansion to be self-corrective.

(c) In the event of a marked shortfall in the growth of bank deposits it is unwise to keep bank reserves on target, since this results in too great an expansion potential which will subsequently lead to an excessively rapid growth of deposits and to severe tensions once this potential is exhausted.

Daily targeting of bank reserves by the Bank of Spain consequently provides only a way of ensuring that, on average, the supply of bank reserves does not deviate from a path consistent with the money-stock targets and a useful guide in deciding on the amount of daily intervention in the interbank money market. The Bank of Spain has to face the usual conflict between the objectives of exercising quantitative control of bank reserves and achieving stability in interest rates. In the short run, the only relevant interest rates are those of the interbank money market, since there is very little information on how other interest rates applied by the banks move in the short run and ample evidence that they evolve in a far less volatile way than interbank rates. The rather loose ties between interbank and other interest rates has meant that the Bank of Spain has not been too concerned about the acknowledged volatility of interbank rates. This volatility should not, however, be construed as the inevitable outcome of quantitative targeting of bank reserves, since it is due to a large extent to well-known institutional factors and, in the case of some particular episodes in the past, to departures by the Bank of Spain from the principles that have now become established. Still, the avoidance of excessive gyrations and large movements in interbank rates is now a serious concern of the Bank, so that in the very short run the Bank of Spain will usually depart from its daily targets for bank reserves in order to avoid up and down-movements in interest rates from day to day, while trying to keep reserves close to the target path on average. However, a persistent upward or downward trend in interest rates is not resisted; though it may induce the Bank to reappraise the assumptions on which its targets for bank reserves rest and to revise them if necessary. The Bank does not object to large movements in interest rates, but it is concerned with ensuring that movements do not convey a message which is inconsistent with the general aims of policy. There are no set rules in this respect, but to convey some idea of the general approach it may be said that, in relation to interest rates paid by banks on one-year time deposits, day-to-day and one-month interbank deposits might fluctuate in the range of, say, $\pm$ 5 and $\pm$ 3 percentage points respectively without the Bank of Spain taking any corrective action, while larger movements might trigger a change in its actual pursuit of bank reserve targets. For example, should monetary expansion fall short of the target levels for several months in succession, the Bank of Spain would take the view that the target for bank reserves should be abandoned so as to avoid a sharp fall in interest rates. A tentative floor for interbank interest rates would inevitably become a temporary guideline for the Bank of Spain's interventions until monetary expansion accelerated or a fundamental revision of targets was undertaken.

The present approach calls for as little change in reserve requirements as possible.[20] Changes are not ruled out (and the decision to call for special deposits in 1979 may be thought of as being somewhat similar to changes in reserve requirements), but there is a presumption that whenever possible adjustments should be made by using the available instruments for intervention or, if necessary, by creating new ones rather than by changing reserve requirements.

There is a related point of interest. A long tradition of guidelines and direct credit controls meant that in Spain the banks and the authorities were used to a high degree of intercommunication. Banks were slow to understand the principles of the new approach to the control of their expansion and have actually asked the Bank of Spain to translate monetary and bank reserve targets into targets for bank credit expansion. The authorities have been quite prepared to provide such supplementary guidance. The result has not been very encouraging, since, as a result of the obvious uncertainties involved, there has always been a serious risk either that the two sets of information will prove inconsistent or that a double signal will have a stronger impact than intended. A clear lesson from experience is that once a system of indirect control through bank reserves and interest rates comes into existence it is to everybody's advantage to let it become the main channel for information passing from the central bank to the banks. Qualitative guidelines or requests to banks need not be completely excluded, but they should be restricted to a minimum and made with the utmost care.

8. The response of the banking system

The response of the banking system to the new approach to monetary control has been as good as could be expected given the substantial changes that it implied and the constraints imposed by regulations which, though inconsistent with the new aims of monetary policy, were removed only gradually or retained.

Spanish banks, which were used to operating with very ample liquidity positions (in the form not of cash, but of costless margins for unrestricted access to central-bank credit), had to adapt themselves to a situation in which cash requirements increased substantially and unrestricted access to the central bank was severely curtailed. The initial response of the banks was to operate with very substantial excess reserves (1 per cent. of eligible liabilities was normal), but a clear downward trend soon emerged. This development was seriously hindered by the unstable way in which the Bank of Spain managed bank reserves in the early years. But as soon as the Bank of Spain managed to make the evolution of bank reserves reasonably smooth excess reserves again declined markedly (see Graph 7). Many factors contributed to this, but the basic influences were the development of the interbank money market, the increasing sensitivity of banks to profit considerations when their margins were eroded by reserve requirements and the increasing competition between banks which was brought about by other measures (such as the liberalisation of interest rates, the elimination of restrictions on the number of branches, the authorisation of new banks and, particularly, of foreign banks). Excess reserves now average only about 0.1 per cent. of eligible liabilities and further reductions are no doubt to be expected.[21]

The transmission mechanism running from bank reserves to bank deposits has relied in Spain, as in other countries following a similar approach to monetary control, on the ability of the banking system to adjust its acquisition of assets in such a way as to comply with reserve requirements and with its own demand for excess reserves. In countries with liberal banking regulations and efficient money and capital markets this process is fairly smooth, with interest rate changes playing a significant rôle, but in Spain it meets with a number of serious obstacles.

As a result of legal requirements obliging banks to invest in particular kinds of public and private bonds or loans, a substantial percentage of bank assets (over 20 per cent. of deposits at commercial banks and 50 per cent. at saving banks) is excluded from any possible adjustment process. Moreover, as a result of tight exchange control regulations, access to foreign money markets is severely limited. Although borrowing abroad would not help the banking system as a whole (since it would normally be offset by changes in the Bank of Spain's net lending to the banking system), it could provide an effective means of adjustment for individual banks. Bank portfolios of negotiable public or private bonds (other than those needed to satisfy investment ratios) are very small and, consequently, the secondary market for securities of this type is almost non-existent. This deprives Spanish banks of another means of adjustment available in many countries. There is no short-term Treasury paper outstanding, nor any market where privately issued money-market paper is negotiated. All this means that ultimately banks have only four basic ways to adjust: by attracting deposits from other institutions, by borrowing from the Bank of Spain, by borrowing from other banks and by modifying their portfolio of loans to the private sector. Since the first three can help individual institutions but not the banking system as a whole, the only basic way adjustment can be made is by changing the volume of new credits granted to the private sector.

Banks have not been entirely deprived of the opportunity to make changes in interest rates, since legal controls over some rates and cartel agreements on others both on the assets and the liabilities sides of the balance sheet have proved ineffective at times of monetary tightness. But these lapses have not been generalised throughout the markets and have received little publicity and it has been difficult even for the Bank of Spain to know how interest rates actually were evolving. Hence, as a means of adjusting the portfolio of bank loans, rationing still plays a more important rôle in the Spanish banking system than in those of other countries.

There is yet another characteristic of the Spanish banking system which makes it difficult for banks to adjust, namely the existence of large branch networks with largely decentralised powers of decision with respect to loans to the private sector.

All these factors make it quite difficult for banks to adjust in a smooth way to changes in their reserves and in net lending by the Bank of Spain. Banks have had to go through a process not only of learning to understand the new situation but of creating the administrative framework necessary for adjusting their loan portfolio flexibly - a process which has not been without tensions. In the hope that in the last resort the Bank of Spain would come to the rescue, as in the past, many banks were slow in adapting to the new situation. The Bank of Spain was bound to provide some help, but it became increasingly clear that its attitude was becoming less and less accommodating. Not only did borrowing from the Bank of Spain or from the interbank market become very expensive, but when it exceeded certain levels it also gave rise to doubts about the borrowing bank. Hence in terms both of profits and goodwill the cost of not adapting became high enough to encourage banks to make serious efforts to improve their performance. This they have certainly done, as the downward trend in excess reserves clearly proves.

The present situation is far from satisfactory, however. Banking regulations and the lack of true money or bond markets (which is a side effect of the regulations themselves) mean that banks are deprived of many desirable means of adjustment and this makes the whole process of monetary control unnecessarily rigid.

9. Concluding remarks

As should be clear from the preceding description, the Spanish monetary authorities have gone a long way in implementing monetary policy by control of the monetary base. Problems have emerged time after time, but the view of the authorities has been that these were the result either of inadequate institutional arrangements or of unwarranted assumptions about the attainable aims. In both cases, it has been considered better to introduce the necessary institutional changes or to modify the prevailing views than to give up the whole approach to monetary control. This attitude has, of course, been based on the assumption that the changes were by and large possible and desirable for their own sake and that their likely cost was commensurate with the importance of monetary control.

Several disadvantages of the present arrangements have been indicated above; and there is a wide consensus about what the next steps to overcome them should be.

At the top of the list of necessary measures is the full liberalisation of interest rates applied by banks, since without this other institutional changes are bound to be very difficult. Freedom of interest rates should open the way for the general public to have access to the interbank market, which appears to be a necessary condition for turning it into a true money market where interest rates would move in a much more gradual way. Freedom of interest rates applied by banks is not an economic precondition for the issue of short-term Treasury paper, but it is a political one. It should also tend to increase interbank competition, to restore the original meaning of each type of deposit and to enhance the economic significance of posted interest rates.

Second on the list is the issue of Treasury bills by regular auctions, in which anybody could participate and which would result in interest rates at free market levels. This is a step absolutely necessary for increasing the impact of free short-term interest rates on interbank competition and on the development of a money market. It is also a crucial precondition for flexible open-market operations to replace the present cumbersome arrangements for draining off bank liquidity.

Compulsory investment ratios for banks should also be eliminated. This is not as important a measure as the previous ones, and a plan for gradual reductions is already in operation. Though it would be very difficult to move quickly, an acceleration of the present programme would be welcome from the point of view of monetary control. This is so not only because it would allow more scope for adjustments by the banks, but also because it appears to be a necessary precondition for the development of public and private-sector bond issues and of secondary markets for them.

Exchange control regulations constitute another chapter of necessary changes, at least to the extent of allowing banks some scope for adjustments in the short run. The possibility of using foreign currency swaps as a means of controlling bank liquidity remains unexplored in Spain; as in other countries, however, they might be a valuable aid in monetary control.

The list could be extended, but it is long enough to provide some insight into likely forthcoming developments in the field of monetary control. Progress will be slow, as traditional views and entrenched economic interests have to be overcome. But there is a powerful logic in the envisaged changes and this will make it very difficult to postpone them indefinitely. Whatever its intrinsic merits may be, the new approach to monetary control is therefore bound to remain the most powerful force making for gradual improvement of the Spanish financial system.

Reform will eventually lead to the formation of efficient financial markets and the avilability of reliable market interest rates. It may be pertinent to consider whether this will result in a change in approach to monetary policy and monetary control. The answer is presumably negative on both counts.

Targets of monetary policy have in fact been set in terms of the money stock with little regard to the implications for interest rates, owing to some extent to the lack of relevant information on the latter. Although the influence of nominal interest rates on domestic activity is obscure and is bound to remain so, their implications for external capital movements are very clear even under present circumstances. So far in Spain monetary policy has been formulated with little regard to its balance-of-payments implications, with the result that, despite the controls on interest rates and capital movements, very substantial external capital inflows or outflows have taken place in response to changing relationships between financial conditions at home and abroad. The increasing flexibility of exchange rate policy throughout the 1970s has been of major assistance in the implementation of a fairly autonomous monetary policy, but all kinds of difficulties have, however, resulted. It is thus likely that more attention will be paid to the balance-of-payments implications of monetary policy in future, which means looking more closely at the interest rates associated with any particular target for monetary growth. But this will mean only that monetary growth targets may be selected with a different set of considerations in mind, and not that targeting of the money stock will be replaced by interest rate targets.

On the instrumental side, any increase in the rôle of interest rates in the process of adjustment by banks to changes in bank reserves will be welcome. Insofar as monetary control is concerned, the Bank will certainly take advantage of the information provided by interest rates in order to take better-informed decisions about the management of bank reserves on a discretionary basis, but it seems unlikely that this will lead to giving up the targeting of bank reserves and to replacing it with a method of monetary control based on control of interest rates.

Footnotes

* I am indebted to José Perez and Gonzalo Gil for their valuable comments and suggestions on earlier drafts of this paper.

1 The first serious step in this direction was taken in December 1970 and full implementation of the approach took place in mid-1973.

2 The issue of all types of paper giving automatic access to central-bank credit had been discontinued by mid-1971; interest rates on bank loans and deposits were liberalised for maturities of over two years in August 1974 and for maturities of over one year in July 1977; a gradual, but substantial, reduction in banks' investment ratios (starting in mid-1977 and going into 1982) is in the course of being implemented.

3 For historical reasons there is a third category of assets which is eligible for meeting reserve requirements: unused margins for Bank of Spain credit guaranteed by public debt issued before 1959. Eligibility for such credit is unconditional. Since no interest is charged on the unused credit margins, almost the whole of the banks' portfolio of the paper concerned is pledged with the Bank of Spain but, with very temporary exceptions, no use is ever made by the banks of the credit available against it. To do so would be tantamount to replacing one kind of eligible asset by another kind and would involve the payment of interest on the credit. Since most of the outstanding public debt issued before 1959 is in the hands of banks and is pledged with the Bank of Spain, the absolute amount of this kind of eligible asset is bound to decrease gradually as the issues concerned mature. The rapid growth of bank deposits is, in addition, bringing about a very rapid reduction in the relative importance of this paper, which at present amounts to only 0.8 per cent. of the banking system's liabilities subject to reserve requirements. These assets should, of course, be included in any definition of the monetary base.

4 Some measures of a general nature (e.g. the flotation of some particular issues of government debt) were taken in the past for the purpose of enabling the Bank of Spain to keep bank reserves under control. The need for this resulted from a lack of more adequate instruments for short-run control (or to political resistance to using them), circumstances which by now may be considered to have changed.

5 Credit co-operatives are a not very significant exception. Their deposits, not included in the definition of the money stock, amounted at the end of 1978 to 3.3 per cent. of bank deposits defined as money. However, reserve requirements have recently been established for credit co-operatives as well.

6 The reduction was to some extent fictitious. Unused credit margins amounted to 3.2 per cent. of deposits in 1972, but to only 0.8 per cent. of deposits in 1979. As explained in note 3, the opportunity cost of such reserves is quite small.

7 Originally reserve requirements related to monthly averages of reserve assets held on five dates within the month expressed as a percentage of the monthly average of eligible liabilities recorded on the same dates. This proved to be a very inefficient arrangement as it allowed considerable scope for window-dressing. The present, somewhat strange, ten-day period is explained by the fact that this had been for years the usual reporting period of the Bank of Spain. This made it possible to take advantage of longer series of statistical data for some of the items involved.

8 This floor is to be eliminated in April 1980, since it is of no substantial importance and is thought to give rise to some unnecessary strains in the interbank money market.

9 Because sizable discrepancies between bank reserves as calculated by the Bank of Spain and those reported by banks had appeared, banks have been obliged since May 1978 to calculate reserve requirements using the Bank of Spain figures, rather than their own. For this purpose the Bank of Spain makes its figures available to each bank at the close of every business day.

10 The Bank of Spain has been willing to change the legal definition of reserve requirements so as to make it as appropriate as possible for purposes of monetary control. The banks have been critical of the lack of remuneration on reserve holdings and of the non-lagged accounting basis of the requirements. Since these two features are obviously essential to the effectiveness of the system the Bank of Spain has not been prepared to give them up and no basic change is in prospect.

However, the non-remuneration issue explains the lowering of reserve requirements from their initial level of about 7 per cent. to the present level of 5.75 per cent. The Bank of Spain did not mind lowering the requirement provided that it continued to exceed by a safe margin the liquidity ratio that banks would maintain in the absence of legal reserve requirements. It would be difficult to say what that ratio would be, but there is broad agreement that for the time being it would not be safe to reduce the requirement below the present level.

This non-remuneration issue also explains why, when faced recently with difficulties in draining off excess reserves resulting mainly from a huge balance-of-payments surplus, the Bank of Spain decided, instead of increasing reserve requirements, to call on the banks to lodge with it blocked special deposits remunerated at the discount rate (which is a conventional rate fixed below market rates). Such deposits, which now amount to 3 per cent. of liabilities subject to reserve requirements, may be viewed as interest-bearing required reserves. (The only difference between the deposit and reserve requirements is that the deposit requirement is not calculated on the basis of daily average ratios, but is expressed as a fixed amount related to the liabilities of the banks at the end of the quarter.) But the Bank of Spain prefers to regard the deposits as enforced subscriptions to a kind of non-market instrument issued by the Bank of Spain. After all, a similar effect might have been achieved by means of a facility remunerated at rates attractive enough to induce voluntary deposits.

11 Until mid-1977, the Bank of Spain held the view that, as the evolution of total bank deposits was highly dependent on the evolution of commercial-bank deposits, total deposits could be controlled by controlling commercial-bank deposits and, at one remove, commercial-bank reserves.

This procedure, under which the Bank of Spain automatically met the demand for reserves by savings banks, resulted in significant departures of total bank deposits from target and the problem seemed likely to increase. Savings banks were abandoning their previous very conservative practices and beginning to behave more like commercial banks and the evolution of savings deposits, concentrated at savings banks, tended to depart from the general trend of bank deposits. Finally the Bank of Spain decided to make total bank deposits the intermediate target variable.

12 Quarterly and monthly forecasts of such intervention needs are regularly made as well.

13 This explains why such calculations are made in the form of point estimates rather than "bands" or medium-term paths, which are used only for monetary targets and are interpreted as an allowance made for inevitable short-term control errors.

14 From 1973 onwards the Bank of Spain granted, almost every day, seven-day loans (and occasionally one-month loans) without collateral. Once the level of its net intervention had been fixed, the volume of previous loans maturing on that day would determine the gross amount of intervention by the Bank of Spain. Each bank was then offered a share fixed in proportion to deposit liabilities, at a rate determined each day by the Bank of Spain. Since interest rates asked were systematically kept below interbank market rates, banks would normally accept the loans offered. Giving an assured profit margin to banks was consequently the price paid for achieving quantitative control of bank reserves. This system was quite flexible when it was necessary to increase the outstanding volume of central-bank credit, as was frequently the case, but ran into trouble when there was a need to reduce it since loans maturing on particular dates might fall short of the amounts of bank reserves to be drained off. This provided a powerful reason for shortening the maturities of loans, a move strongly opposed by banks, and beginning in 1977 loans were granted on a day-to-day basis. Because of the undesirable distribution and profit features mentioned above the system was changed to its present form.

15 From a legal point of view such loans are considered as drawings on a general credit line secured by public-sector debt and otherwise undisposable. The volume of such credit lines sets an upper limit to bids by individual banks. However, such limits are rather high and under normal circumstances banks do not reach them.

16 As a matter of fact, when in February 1980 the legal ceiling for such issues was reached the Bank of Spain started to offer certificates of deposit of its own with the same features as Treasury bills.

17 Issues were often made only after negotiations with banks, which accepted them less because they were attractive than because they knew that alternative measures which the Bank of Spain might take would be to their disadvantage.

18 The only notable exceptions were loans between banks linked by capital participations (e.g. most industrial banks were subsidiaries of large commercial banks) and a long-standing practice whereby savings banks kept most of their liquid assets as sight deposits with commercial banks. These operations were carried out at conventional interest rates or at rates responding only with a lag and in a limited way to overall financial conditions. Otherwise, interbank lending was regarded with distrust, with lenders thinking it as helping their competitors and borrowers considering they would lose face by having to look for help from their competitors.

19 This is an important qualification, since the Bank itself has had little power, particularly in earlier years, to implement monetary policy independently, despite the fact that all the changes described in this paper have been introduced at the Bank's initiative. In recent years, however, the Bank of Spain has enjoyed growing freedom in the actual execution of monetary policy, while government intervention has been restricted to defining the general objectives of monetary policy and authorising basic changes in the regulation of banking operations.

20 In the recent past quite frequent changes were made (see Graph 2), even ignoring the structural changes which led ultimately to the unification of reserve requirements into a single ratio. The lack of adequate instruments for controlling the level of bank reserves (and particularly for lowering it) was one reason for some of these changes, but many of the modifications are explained by the earlier interpretation of reserve requirements as a flexible instrument that could be adjusted to counter seasonal changes in bank reserves, for instance. However, changes in reserve requirements, though announced several weeks in advance, became a destabilising influence on excess reserves when, as frequently happened, the Bank of Spain was not able adequately to control the timing of measures to offset the impact on the supply of bank reserves.

21 Several large banks, which have been particularly skilful in their reserve management, are able to operate regularly with excess reserves that are only a fraction of that figures.

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