

BANCO DE ESPAÑA

IMPLEMENTATION OF SPANISH MONETARY  
POLICY IN THE FRAMEWORK  
OF EUROPEAN INTEGRATION

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SERVICIO DE ESTUDIOS  
Documento de Trabajo nº 9104

**IMPLEMENTATION OF SPANISH MONETARY  
POLICY IN THE FRAMEWORK  
OF EUROPEAN INTEGRATION (\*)**

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(\*) Article prepared for the BIS autumn meeting of central bank economists. We wish to thank Javier Aríztegui, Pedro Martínez Méndez y José Pérez for their comments. The article was likewise enhanced thanks to its discussion at the BIS meeting.

In publishing this series, the Banco de España seeks to diffuse worthwhile studies that help acquaint readers better with the Spanish economy.

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ISBN: 84-7793-088-0

Depósito legal: M. 10716 - 1991

Imprenta del Banco de España

This paper analyzes the decision-making process in monetary policy in Spain in the context of the economic and monetary integration of the European Economic Community.

The first section describes this process from an institutional perspective responding to some of the issues to be considered at the BIS autumn meeting of central bank economists.

The second and third sections go more deeply into the design of monetary policy and the problems involved in its implementation in view of the important changes experienced in recent years, particularly: the entry of the peseta into the EMS and the firm commitment to Economic and Monetary Union (EMU).



## 1. THE DECISION-MAKING PROCESS IN MONETARY POLICY IN SPAIN

The Law regulating the Governing Bodies of the Banco de España, of 21st June 1980, institutes, in its article 3, the Banco de España "will carry out the monetary policy, in both its domestic and international realms, in accordance with the general objectives set by the Government, implementing it in the manner it considers most appropriate for achieving the desired aims, particularly that of safeguarding the value of the currency". The Banco de España will also report and advise the Government on these matters.

Each year the Government sets the overall lines of its economic policy and defines its priorities in the State Budget which it presents to Parliament for discussion and approval during the last quarter of the year. At the same time; the Banco de España prepares the monetary programme for the following year, taking as its basic reference point the macroeconomic setting of the budget, and submits to the Government the appropriate report.

Estimates made by government of growth of gross domestic product and the targets set for the rate of inflation define the limits of expansion for the nominal expenditure to be financed through creation of liquidity and constitute the starting point for the monetary programme.

Moreover, budget estimates of public sector borrowing requirements, and the manner in which these are to be financed, together with Banco de España estimates of movements on capital account and the performance of the domestic financial markets, allow to harmonize the main

financing flows between the various sectors of the economy in the framework of a monetary budget and the effects of the outlined monetary and fiscal policies on the financial conditions of the economy, the interest rates and the exchange rate.

All the work done for the annual programming -which includes, in addition to the monetary budget, simulations with money and credit demand functions, analysis of possible changes in the velocity of circulation, the setting of scenarios in the international context (interest rates, exchange rates, trade flows and external capital movements)- results in the setting of monetary targets in terms of a quantity of money aggregate. The work of monetary programming carried out and their conclusions are submitted for study and approval to the Bank's Executive Board.

Beginning this year, the setting of monetary targets is also subject to a process of consultation with other EEC member countries, according to procedures adopted by the Committee of Governors.

After setting the references for the growth of liquidity for the year as a whole, targets are continuously monitored. For this purpose, every ten days, internal projections on trends in monetary aggregates are made, as well as a monthly "Monetary Targets Document" is prepared in which the most recent behaviour of monetary aggregates and financial markets is analyzed, particularly the money and foreign exchange markets; the nature of the deviations from money supply targets are studied; the most recent available information on the real sector of the economy is assessed; and new data on the international economy is taken into consideration. Finally, recommendations are made with respect to the character of

monetary policy; the conflicts which could arise between the domestic and international realms of monetary policy are considered; the direction Banco de España interest rate policy should follow is indicated; and references are set for the growth of quantity of money for the following month.

This document is submitted for study and approval to the Monetary Policy Committee formed by the Governor, Deputy Governor, the Directors General of the Bank and the Heads of the Department of Operations, Foreign Operations, Monetary and Financial Studies and Economic and Short-run Studies.

The body concerned with the short-run management of monetary policy is the Operations Committee which meets early every morning to define the day's intervention in money markets and if necessary in the foreign exchange market. The Committee is formed by the Governor, Deputy Governor, the Directors General of Banking Regulation, Operations, International and Research, as well as the Head of Operations who acts as secretary. Decisions taken in the Operations Committee are submitted to the Bank's Executive Board, which meets every Tuesday and Friday. Except in the case of unforeseen events, the line of action of the Operations Committee will be in the context of the recommendations made by the monthly meeting of the Monetary Policy Committee.

The meeting held by the Operations Committee the first day of each ten-day period is of special importance. It sets a maximum band for interest-rate fluctuation for overnight interbank deposits; it takes decisions on the regular ten-day auction of Banco de España certificates -which is the instrument for injecting most of the liquidity required by the institutions for the cash



reserve ratio during the ten-day period- and the auction of three-month Treasury Bills, setting the related marginal interest rates.

The Operations Committee settles the normal problems arising from liquidity management each day and, according to the situation in the money and foreign exchange markets, determines the level of intervention rates for open-market operations, situating the interbank rate somewhere within the fluctuation band fixed for the ten-day period. This Committee also considers intramarginal interventions which eventually have to be made in the foreign exchange market.

In the monetary policy decision-making process, coordination of the movement of interest rates between the Banco de España and the Treasury is of special importance. The periods when this connection has been insufficient have led to unstable short-run situations in the behaviour of the public debt markets and difficulties in the implementation of monetary policy. Since 1983, a stable channel between Treasury and the Banco de España for harmonizing these decisions on interest rates has been established through the Committee for Settling Auctions of Public Securities. This Committee consists of three members from the Ministry of Economy - the Director General of the Treasury, Subdirector General of Government Securities and the Controller General of this Directorate - and three members from the Banco de España -the Deputy Governor, the Director General of Operations and the Head of the Department of Operations. This committee meets prior to the settlement of each fortnightly auction of Treasury Bills and before the monthly auction of Treasury Bonds. The final decision on the interest rate for these sales rests with the Treasury.

The increasing spanish integration in the european financial markets and the necessity to harmonize the outlines of monetary control in the process of economic and monetary unification within the EEC make it necessary to omit the mechanisms by which the financing of public deficit has been interfering in the implementation of monetary policy and banking activity. In this sense, two important steps have been taken during 1990.

On the one hand, the high level of the reserve ratio during the last years -between 17 and 19,5%-, that has been motivated by the strong borrowing requirements of the Treasury, has been reduced down to 5%. To avoid the monetary control problems that a reduction of such magnitude could cause, Banco de España debt, equalling the volume of released liquidity, has been setpped in the financial institutions. These securities will be redeemed between 1993 and 2000 according to a fixed timetable. At the same time, compulsory public debt investment ratio to which financial institutions have been subject will be completely eliminated at the end of 1992, following a quarterly timetable of increasing reduction.

On the other hand, the State Budget for 1990 establishes a limit of the public borrowing from the Banco de España, so that it should be null at the end of each year.

Within the institutional framework outlined in this section, the decison making process of spanish monetary policy has been increasingly conditioned in the last few years by the international integration of the spanish financial markets, and specially by the entry of the peseta in the EMS exchange mechanism, within the economic and monetary process in the EEC. This new dimension of monetary policy in Spain constitutes the

fundamental reference point of discussion on the different aspects of monetary control that are taken up in the following sections.

## **2. EXTERNAL FACTORS CONDITIONING MONETARY POLICY DECISIONS BEFORE THE ENTRY IN THE EMS**

The tasks that Spanish monetary policy has had to deal with in recent years have been strongly conditioned by the momentum of convergence with levels of economic stability and of income in the central countries of the EMS, and with a speeding up of the process of european economic and monetary unification. The decision-making process is also increasingly influenced by international trends towards greater interdependence of national markets and intensification of capital movements.

The effort to reduce inflation differentials with the other members of the EMS and to curb the balance of payments deficit, in the context of a very dynamic economy, caused frequent friction, during the second half of the eighties, between domestic and external targets and between the maintenance of monetary discipline and stability in the financial markets. These conflicts have reduced the effectiveness and credibility of monetary control based on following up targets for a particular definition of money.

The combination of policies applied in Spain in the last few years has relied to a very large extent on monetary control for the aggregate demand management. Given the strong growth recently experienced by the Spanish economy, subject to the pressure of high growth in private spending, and in view of the absence of a sufficiently austere fiscal policy, monetary policy has

had to maintain a marked restrictive tone and, as a consequence, rates of interest have been kept at high levels.

This high return on assets valued in pesetas has created wide interest rate differentials with foreign rates and constituted a permanent stimulus to the entry of capital. This situation has been aggravated by expectations of peseta stability or even appreciation. The process has occurred during a period of growing internationalization of Spanish financial markets and of a trend towards reducing exchange controls, which has considerably increased the sensitivity of the peseta on exchange markets to movements in domestic interest rates. The flow of funds looking for short-term gains has been superimposed on the inflow of more permanent capital, associated with growing expectations of the return offered by the Spanish economy as it becomes part of a wider market with greater economic stability.

However, in a context of relatively high inflation rate, financial flows have tended to concentrate on short-term markets and have been channelled mainly through the banking system, constituting an important factor of disturbance in the process of harmonizing domestic and foreign realms of monetary policy (see Aríztegui and Fernández de Lis, 1989).

In these circumstances, strict respect for monetary targets would mean, in the last years, a rise in levels and variability of interest rates and, with growing mobility of capital, a strong tendency for the peseta to appreciate. A monetary policy of this nature would have exercised a restrictive influence on domestic demand with effects on internal composition clearly harmful to the medium term growth and the increasing integration of

European markets, as its restrictive impact would be concentrated on gross capital formation and exports. In addition, persistent rigidity in the labour market gave rise to fears that a deflationary strategy based principally on appreciation of the exchange rate could have facilitated the maintenance of rates of growth of domestic costs incompatible with long-run convergence with inflation rates prevailing in the rest of the system, as, in these conditions, the favourable impact of the exchange rate on prices would have been absorbed by an increase in wages, without being transferred to the underlying core of domestic inflation.

For this reason, since 1986 the monetary authorities have tried to contain the trend towards appreciation of the peseta within moderate margins, intervening in the exchange markets and occasionally having recourse to administrative controls on the entry of capital in order to restrict appreciation of the exchange rate to levels compatible with maintaining growth of the monetary and credit aggregates at rates coherent with the objectives of domestic stability.

Before 1986, the exchange rate indicator followed up by the Banco de España was a peseta nominal exchange rate index vis-a-vis the currencies of the developed countries, weighed by the volumen of trade with Spain. However, with the exception of very specific periods, the behavior of this index was not a reaction mechanism of the economic authorities. When Spain joined the EEC, at the beginning of 1986, the Banco de España started following up a peseta nominal exchange rate index vis-a-vis the EEC countries, except Greece and Portugal. The behaviour of this index has been increasingly assuming importance in the decision making process of monetary policy and in the interventions in the exchange markets. Several reasons

related with the way of operating the Banco de España in this market and the form in which the EMS has been working, with the Deutsch-mark (DM) as key currency, fostered the spanish exchange rate policy to take the german currency as an essential reference. So, in a formal way, since 1988 and until the entry of the peseta in the EMS in June 1989, decisions about the exchange rate were ruled by the behaviour of the nominal peseta-DM exchange rate.

In periods of strong upward pressure on the rate of the peseta, the initial reaction of the monetary authorities has been to intervene in the exchange markets to avoid a rapid shift in the rate. On occasions, specific interventions have been sufficient to normalize the exchange market. However, at other times, the size of the intervention by the Banco de España has reached very high volumes, as can be seen in Chart 1; this has appreciably increased variability and shifts in the central reserves and enormously hindered the complete sterilization of these movements on domestic markets.

In some situations, the Banco de España has favoured short-run adjustments in interest rates on the domestic money markets to relieve tensions in the currency market. In fact, in certain periods the level of interest rates has been the result of the search for a compromise solution to the divergent requirements of the domestic and external aspects of monetary control.

However, not even with recourse to exchange control measures was it possible to avoid the appearance of conflicts compelling the authorities to choose between trying to maintain control of liquidity, and consequent acceptance of an appreciation of the exchange rate above the level desired, or to accept a certain overflow of monetary targets in order to avoid excessive upward

pressure on the peseta.

These problems worsened during the 1987–89 period, when the strong growth of the Spanish economy prompted a deterioration in the basic balances which drew it away from the path of convergence with the EMS countries (Chart 2 shows some indicators of this trend). In this situation of growing difficulties, a variety of factors revealed the unsustainability of the strategy of monetary control followed up to then:

1) A succession of phases in which priority over control of monetary aggregates gave way to others with greater emphasis on exchange rate stability, together with difficulties in interpretation of monetary aggregates, reduced the credibility and the stabilizing efficiency of monetary policy.

2) The prospect of complete deregulation of capital movements and full integration of the Spanish economy with European financial services markets prevented continued use of exchange control measures as a valid instrument for dealing with conflicts between monetary targets and exchange rate stability.

3) The deepening of the commercial and financial relations with the European economies conferred growing importance on exchange rate stability. Full participation by Spain in the European Single Market involves abandoning the use of the exchange rate as a tool for dealing with problems of lack of efficiency or lack of discipline and the adoption of new rules of behaviour aimed at moderating nominal growth in domestic costs as the basis for maintaining the external competitiveness of the economy.

4) Finally, the increasing interrelation of financial and monetary markets prevented recourse to monetary control strategies involving sudden and frequent changes in interest rates. These strategies, as well as being incompatible with exchange rate stability, are ineffective and lack credibility in highly integrated financial markets in which the increases of the cost in domestic financing are strongly influenced by an abundant availability of external financial resources.

### **3. CHANGES IN SPANISH MONETARY POLICY ON JOINING THE EMS**

The Spanish authorities believed that entry into the EMS and full acceptance of a process towards a fixed exchange rate, with closer multilateral coordination of economic policies, constituted the most appropriate response to the loss of effectiveness and credibility experienced by monetary policy in recent years, after a long period in which control of monetary aggregates had played a very effective part in correcting strong inflationary pressures, especially in the first half of the eighties (see Chart 3).

Membership of the exchange mechanism of the European Monetary System, decision taken by the Spanish Government in June 1989 on the eve of the Madrid summit, was an attempt to attain the discipline and credibility which derive from exchange stability. The announcement of a commitment to reduce the flexibility of the exchange rate is a stimulus for making decisions taken by economic agents compatible with a reduction in price growth to levels similar to those at the centre of the System and, at the same time, allows the reputation for anti-inflationary strategy of the central banks of the countries with greater tradition of stability to be shared



among the other members. Both effects were specially necessary in the situation of the Spanish economy in 1989, when, after a number of years of strong pressure from domestic demand, clear symptoms of overheating were threatening to set off strong expectations of inflation, and when following up targets based on the growth of monetary aggregate did not create confidence nor provide sufficient reliability, given the deviations occurring (see Malo de Molina, 1990).

The setting of margins to the fluctuations of the exchange rate also permitted to limit the expectations for a revaluation of the peseta, thus breaking the vicious circle, fed by the speculative capital inflows, which had lead to a permanent upward trend in the exchange rate, not fully justified by the competitiveness of the Spanish economy nor by its capacity to attract stable foreign investments, despite the latter being very important.

The trend of the Spanish economy since joining the EMS reflects a strengthening of anti-inflationary strategy and a more stable environment for the expectations formation of economic agents. This was what had been expected to result from the decision, despite the fact that it occurred in a particularly delicate situation, due to the persistence of the strong growth in domestic demand, a resurgence of inflation and a rapid tendency to deterioration in the current account deficit.

Since then, the policies implemented have channeled the growth path of nominal spending in the economy towards more moderate rates, compatible with correcting the imbalances, and the conflicts between the application of the restrictive demand policies and the desire to avoid a prolonged artificial appreciation of the exchange rate have been kept within manageable limits. The

peseta has moved in the upper part of the fluctuation band of the exchange mechanism and the occasions when it has approached the maximum appreciation limit have been corrected by minor interventions in the exchange markets; these have not had their former expansionary effects on domestic liquidity, and it has not been necessary to relax domestic interest rates, contrary to the requirements of domestic stability (see Economic Bulletin of the Banco de España, June 1990).

However, these results were achieved using direct mechanisms to restrict private sector borrowing and the continuance of some of the exchange controls which restrict foreign capital inflows. The analysis of the reasons for the temporary use of these heterodox instruments for monetary control is of great interest for clarifying the outstanding problems of Spanish economic policy in articulating its anti-inflationary credibility within the EMS, as well as for studying the characteristics of the decision-making process in the formulation of monetary policy, in a situation where commitments severely restrict possibilities of changes in the exchange rate.

These reasons are based on the links between the exchange rate and monetary aggregates. In fact, the effects of discipline and an anti-inflationary reputation, which can be derived from closer links with the currencies of an area of greater stability, can only occur if exchange rate stability is perceived by the economic agents as sustainable in the medium run, and this, in turn, is only possible if growth in liquidity is compatible in the short run with convergence with the prevailing inflation rate in the area of exchange stability. In this sense, the experience of many economies, including up to a point some events in the

Spanish economy in the 1986-89 period, show that a commitment to exchange rate stability does not, by itself, provide mechanism of sufficient discipline; consequently, monetary and credit aggregates continue to play a primordial role in the credibility of the instruments of economic stability.

If, under cover of the tranquility which exchange rate stability provides and of the doubts surrounding the interpretation of the monetary aggregates, the authorities allow an excessive growth of liquidity, in relation to the dynamism of expenditure and not to simple financial movements, it will end up by creating imbalances which in the medium run will erode price stability and hence the exchange rate.

When Spain agreed to abide by the rules of the EMS, the monetary and credit aggregates were growing at rates certainly incompatible with convergence of the Spanish inflation rate with that of the more stable countries, whatever the margin of uncertainty attributed to the significance of the growth in monetary and credit aggregates.

Simple confidence in the disciplinary effects of the new exchange strategy, which would have tolerated an excessive growth of liquidity in the economy and of private sector borrowing, would have exacerbated the imbalances and eroded, in the medium run, the possibility of meeting exchange commitments. In these circumstances, it was necessary to curb quickly the expansive momentum of the monetary and credit aggregates without recurring to new increases in the level of interest rates which could have conflicted with the limit imposed on appreciation of the peseta by the fluctuation bands in the exchange mechanism. Both these factors created, in opinion of the

authorities, an exceptional situation justifying recourse to emergency measures based on temporary restrictions on credit to business and families; to be effective this measure required the maintenance, also temporarily, of certain exchange controls to make the possibility of foreign borrowing by the private sector more expensive, mainly by the imposition of a compulsory non-earning deposit. With this temporary parenthesis in the usual techniques of monetary control, an attempt was made to direct the growth of liquidity, while obtaining more time to apply other policies, particularly fiscal, to strengthen the mechanisms for stability within the restrictions imposed by the exchange discipline.

Generally, this strategy has allowed re-direction of the growth of the monetary and credit aggregates, and in last instance of nominal spending itself, towards a path coherent with the containment of inflation and an improvement in the current account deficit. This satisfactory result, which has not been exempt from difficulties and costs, could permit a speedy return to monetary control based on the management of interest rates and the lifting of the credit restrictions at the end of the year, after they have had the desired effect and as over time their effectiveness is reduced by a process of disintermediation.

Thus, at the end of this exceptional period of credit restriction, Spanish monetary policy can return to dealing with the difficulties for combining containment of the monetary aggregates with exchange rate stability. To get a useful focus on these possible difficulties the following three aspects must be considered:

- 1) The mutual compatibility of monetary and fiscal policy.

2) The role of the monetary targets with limited exchange rate fluctuations.

3) The setting end meeting of money supply targets.

4) Short-run manipulation of interest rates and criteria for monetary intervention.

### 3.1 The mutual compatibility of monetary and fiscal policy

The achievement of an appropriate combination of the instruments of monetary and fiscal policy has great importance for maintaining the growth of monetary aggregates within a path coherent with the inflation target and exchange commitments. When the dilemma between the stability of the exchange rate and control of monetary aggregates persistently occurs, it shows that the global tone of economic policy is not sufficient to induce convergence of inflation rates, and this problem cannot be resolved by monetary policy alone.

For this reason, the most divergent EEC countries have to make a significant effort to meet the inflation rates of the more stable countries in the system, while accepting to reduce margins for the exchange rate modifications, that is narrower fluctuation bands and realignments as something exceptional. This implies they must give a greater role to fiscal policies in the task of macroeconomic regulation. This strategy means that the countries with the most divergent economies in the EMS and the EEC will have to adopt more austere fiscal policies. This objective faces a number of difficulties which could reduce the effectiveness and the credibility of domestic monetary policy and stand in the way of the process of

construction of the EMU.

During the next few years, the most divergent countries, Spain among them, will have to apply tighter policies aimed at stability and supported basically by fiscal measures, after fixed exchange rates and deregulation of capital movements eliminate the present narrow margin for differentiation of monetary policies.

This means that the credibility of an anti-inflationary monetary policy depends on its link with the other components of economic policy. The effects of containing price expectations, which can be expected from exchange rate stability and from rigorous monetary implementation, could be nullified by inadequate definition of budgetary policy. Once the economic agents are aware of the restrictions under which monetary policy operates in a system of fixed exchange rates, the impact of monetary targets on price expectations is conditioned by the action of the other instruments of economic policy, particularly budgetary. In Spain, in the last few years, the markets have attributed growing importance to the definition of fiscal policy when anticipating the effects and effectiveness of a monetary policy announced to the public, and the authorities, for their part, have attempted to assign a greater role to fiscal policy in the task of stabilization. With the imminent disappearance of credit restrictions both factors will increase in importance.

From this perspective, the credibility and effectiveness of this economic policy outline is vulnerable to the difficulties which could arise in aiming budgetary policy in the right direction. In fact, the characteristics of the decision-making process in fiscal policy and the lack of flexibility in adjusting its

influence on economic activity in response to changing circumstances limit its potential use as an instrument for short-run stabilization, and make its use based on criteria of convergence and stability in the medium term more advisable. For this reason, the limits to the autonomy of monetary policy arising from the context of exchange rate discipline combined with the incapacity of fiscal policy for short-run action can generate occasions of instability which affect the credibility of this set of policies, and hence of monetary policy targets and decisions.

These occasions can be more serious if fiscal policy lacks the room for manoeuvre sufficient to take on the medium-run stabilizing role required of it. Some of the countries with greatest problems of convergence inside the EEC are also countries implicated in a process of reducing income level differentials with the more advanced countries. In these cases, fiscal policy may find limitations on its room for manoeuvre as an instrument for stabilization.

These problems also have important repercussions for the EMU. The gradual process set out in the Delors Report involves, in the first phase, increasing coordination of domestic economic policies, followed later by multilateral supervision, in order to avoid undisciplined behaviour which could erode the stability of the whole area and to reinforce stimulus for convergence. An important part of this will be to coordinate the monetary policies of the participating countries by using a set of homogeneous economic indicators in which monetary aggregates will have to play a primary role, particularly in the larger economies, in line with the preliminary work done by the Monetary Policy Subcommittee of the EEC Committee of Governors.

However, it is not possible to analyze the compatibility of national monetary policies with the objectives of price stability and parities in the EMS while respecting the margins for action in monetary policy, without formulating an opinion on the character of domestic fiscal policies in relation to each country's different requirements for convergence. All of which raises new issues in the process of creating the EMU which have not as yet been sufficiently considered.

### 3.2 The role of monetary targets in the context of limited exchange-rate fluctuations

The insufficiency of exchange rate stability to provide the necessary anchor confers great significance on monetary and credit aggregates. Following up targets for growth in liquidity must serve as a reference to avoid, as already pointed out, expansionary policies which, in the short-run do not appear to be inconsistent with currency stability, can lead to the blocking up of serious imbalances leading to occasions of exchange instability (see Fernández de Lis, 1989). For this reason, Spanish monetary policy continues to be based on following up targets for aggregates having stable relationships with nominal expenditure (see the annex detailing their selection strategy). The importance given to monetary aggregates will be greater while conditions exist which counsel maintenance of a wide fluctuation band ( $\pm 6\%$ ) and while capital movements have not been fully deregulated.

Nevertheless, exchange commitments exclude any rigid implementation of quantitative targets. For assuring the compatibility of monetary control with the limited margin for exchange rate fluctuation, it must be managed with important doses of flexibility in its approach to



targets, and priority attention must be given to the behaviour of interest rates and their desired effect on movements in the foreign exchange market.

In this context, the emphasis to be given to following monetary targets has to vary according to the different time horizons. In the short run, the orderly movement of interest rates, in consonance with requirements for stability on financial and foreign exchange markets, should be given priority over meeting quantitative targets; above all, because the significance of possible deviations is surrounded by such uncertainty in the short run and because an excess of activism in the management of interest rates is not compatible with exchange rate stability and leads to increased uncertainty in financial markets, reducing the effectiveness of the signals monetary policy is attempting to make to the economic agents.

Thus, the targets must be approached with a longer-term perspective (between six and twelve months), unless the available information and the expenditure trends reveal a incompatible juncture with medium-term stability targets. During this period, an assessment has to be made of the deviations caused by financial movements which could affect the informative content of the aggregates and also of the information available on the final variables. When persistent deviations are observed, not attributable to phenomena of a strictly financial nature, an adjustment to the tone of monetary policy is made through interest rates, provided that the limits of exchange rate variation allow it. In the opposite case where departure from monetary targets cannot be corrected by monetary policies, but where the behaviour of the aggregates provides a signal that a combination of inadequate policies is being used, other instruments of

economic policy are needed. In this respect, the credit counterparts of the growth of the monetary aggregates, particularly the foreign one, provides potentially valuable indications of possible inconsistencies in the links between the components of economic policy.

In synthesis, the announcement and following of quantitative monetary targets, although subject to uncertainty due to unstable relationships between monetary aggregates and the final variables and from limitations on monetary control resulting from the commitments to exchange rate stability, continue to play an important part in securing an economic policy consistent with the objective of stability.

### **3.3 The setting and meeting of money supply targets**

The setting and meeting of quantitative targets have been adapted during the last years few to the new environment for monetary policy, in which not only the exchange rate stability commitments foster a more flexible short-run control of the money supply but also deregulation and financial innovation processes point in the same direction.

The Banco de España has been setting targets in terms of a broad monetary aggregate since 1973 (see Rojo and Pérez, 1977). Until 1983 the variable used was M3. After 1984, the growth targets of the money supply began to be calculated in terms of a wider definition of liquidity: ALP (liquid assets held by the public). This aggregate encompasses, in addition to all the bank liabilities in M3, a group of financial assets which, due to their characteristics of liquidity and return, are considered as very close substitutes for bank deposits.

Among these assets are, because of their quantitative importance, the short-term financing instruments issued by the State held in private sector portfolios, whether as a result of outright purchases or "repo" operations with the financial institutions (1).

During the early years of setting money supply targets, they were used as internal references and were not published. Since 1978, the targets have been published and announced prior to the beginning of their period of operation. There is a first announcement of the targets during the State Budget presentation to Parliament. Later, in the first issue of the year of the Banco de España Economic Bulletin, a detailed analysis of the monetary targets set for the year, as well as the assumptions on which they were based, is carried out.

The targets are, in principle, applicable for the whole calendar year. However, on some occasions it has been necessary to make changes before the end of this period when substantial changes in the macroeconomic indicators used to support the monetary programme have occurred or there have been very severe disturbances in the financial markets. Under these circumstances, the Banco de España has sometimes opted to redefine formally the targets and announce new ones, and, more recently, by communicating its willingness to tolerate certain departures from the original targets.

The ALP targets are formulated in terms of a growth band for the whole year. The width of the band has varied over the years between three and four percentage points. Table 1 shows the bands of targets set since 1978 and real changes in the related monetary aggregates.

The growth target set for a year essentially

results in an operational path of constant growth for the whole period. Chart 4 shows the monitoring of the ALP targets, expressed in terms of accumulated growth compared with the December balance of the preceding year. It can be seen that since 1988, together with the band of constant growth, two parabolas are superimposed which converge in December at the maximum and minimum limits of the band. These broader references for evaluating the targets allows more flexible follow-up during the year, particularly in the early months, when revisions of the monetary series are usually more frequent; growth rates on the December balance are subject, by definition, to more erratic behaviour; and, sometimes, certain difficulties arise for linking the new range of targets to the trend of the monetary aggregate.

The movement of ALP is affected by continuous disturbances of varying nature and intensity, which means that the course of the aggregate during the year does not generally coincide with the programmed path. Fluctuations in the level of economic activity, short-run instability of demand for money, movements in the autonomous factors relating to creation of liquidity and the difficulties in estimating with accuracy the seasonal pattern of the monetary series are among the factors causing irregular behaviour in the rate of growth of ALP. These phenomena have meant that the Banco de España has had to accept temporary deviations from medium-term targets, even when these have been strictly pursued.

When fairly serious deviations occur, the Banco de España sets guidelines for growth of the aggregate of very short-term operation which serve as a link with the annual range of reference. These short-term targets are expressed in terms of an intermonth rate of change applied to a seasonally-adjusted series of ALP. Changes in the

monthly targets set during recent years shows a tendency towards a flexibility in short-run control of the money supply, reflected in the programming of processes of convergence, or, more precisely, speeds of return of the growth rate of the aggregate towards the annual range of reference, more gradual and smoother. This fact has meant accepting that deviations from the range take place over longer periods of time (see Escrivá and Peñalosa, 1989). In fact, the monthly targets for ALP set since 1988 have generally followed a rule of base drift. This technique for setting targets involves accepting the deviation recorded up to that time with respect to the annual range and setting a rate of expansion for the aggregate in the following month equal to the target for the annual growth rate.

It is a strategy which accommodates the fluctuations observed in the quantity of money in the short run and, by having stable guidelines for setting the targets, avoids frequent reconsideration of them which could be influenced by temporary factors.

These tendencies show flexibility in the role played by the intermediate target of monetary policy. Though ALP continues to provide very relevant information on the growth of the money supply, the deviations recorded with respect to the reference ranges do not constitute a completely automatic mechanism for reaction by the monetary authorities, as it was the usual behaviour at the beginning of the eighties. On the contrary, the process for taking decisions on monetary policy has become more complex. The rates of growth of ALP are assessed on the basis of observations of their behaviour over long periods of time and are complemented with information coming from other monetary and real aggregates. Although ALP continues to be the main indicator, additional information is also

used from changes in smaller monetary aggregates, from credit aggregates and from information available on the final variables themselves (see the anex).

When analysis of all this information indicates the emergence of undesirable trends in the economy which, in the opinion of the authorities, have to be corrected by a change in the degree of monetary control, the Banco de España makes signals by manipulating interest rates in an attempt to affect in the desired direction the spending decisions made by economic agents and the formation of expectations.

#### 3.4 Short-term management of interest rates and the criteria for monetary intervention

In the implementation of this monetary policy outline, banking reserves have lost their character as a basic short-term reference, in line with the gradual change experienced in recent years. In fact, though during a first stage, essentially the second half of the seventies, a relatively strict control of reserves was the rule (see Martínez Mendez, 1980), during the eighties the tendency was towards a mixed strategy of rates and quantities. Consequently, the Banco de España has been accepting progressively more variations in the ten-day targets set for reserves (see Chart 5).

In contrast to greater variation in quantities, variability in interest rates has been falling. This process concluded, particularly since 1988, with the existing outline which is mainly based on ensuring in the short run reduced fluctuations in interest rates around the levels set by the monetary authorities (see in this context, Chart 6 and Escrivá, 1989).

Among possible interest rates strategies, the Banco de España has been moving towards implementation of a policy based on direct control of the interest rate in the money markets in the very short run, acting mainly to balance the overnight segments, while allowing the interest rates negotiated for longer periods to be influenced by market expectations. In operational terms, for the short-run implementation of monetary control, the Banco de España sets internally a band of maximum fluctuation, generally very narrow, for the interbank rate for overnight deposits. In this context, the range of reference for banking reserves, which is fixed from month to month, does not now play any role as a target or mechanism of reaction by the authorities. Its usefulness is relegated to an advance indicator of movements in ALP.

In recent years, short-run control of interbank interest rates, fluctuating to a small extent around the level desired by the monetary authorities, has been maintained fairly strictly, despite the usual rigidity of the demand curve for reserves, changes of slope and unexpected movements in its position. In this context, if the supply of reserves were relatively inelastic and did not adjust flexibly to changes, interest rates would tend to behave erratically, as occurred frequently in Spain during the second half of the seventies.

The Banco de España strategy in the last few years, on the other hand, has been based on maintaining a short-term supply of banking reserves generally perfectly elastic to an announced interest rate. The auction of monetary regulation loans has been the main instrument for this. At the same time, the Banco de España has used other instruments in order to maintain the fluctuation of the overnight rate within the reference band, avoiding an excessive degree of tension or easing in money markets.

These can be grouped into two categories: use of the traditional instruments for credit to financial institutions or open-market operations, that is buying and selling public securities, in general with repurchase agreements.

The monetary authorities have been laying the foundations for injections and cash drains on the open market to become gradually the main instrument for operations between the Banco de España and financial intermediaries. The creation and development of the Book-entry Public Debt Market in the middle of 1987 was the main advance in this direction. The recent reduction of the reserves ratio to the level of 5%, in force since the third ten-day period of March 1990, and the issue of Banco de España certificates on the public debt market in relation to the volume of freed banking reserves, constitutes a new move within this strategy and tends to avoid the rigidity of the traditional credit instruments available for financial institutions (2).

The new conditions in the financial environment in which monetary policy operates, together with the need to harmonize some of the targets and the short-run stability of the exchange rate, make a degree of diversification advisable in the instruments used for monetary control; some should be reserved for sending definite messages on the main lines of monetary policy, while others should be used as more versatile tools for managing liquidity in the very short run and as a contrast to the reactions of the economic agents, prior to issuing firmer signals which can be difficult to revise. This has been the strategy followed by the Banco de España in recent years, with the use of open-market operations as the main instrument for daily regulation of money markets.



At the same time, changes in the marginal interest rate set for the regular auction every ten days of short-term Banco de España certificates held by the banking system (which replaced on 14th May last the auction of monetary regulation loans), as well as alterations in the level of the cash reserve ratio (3), are used only in those short-term situations when permanent changes in the degree of monetary control have to be made. Thus, the Banco de España uses its main intervention rates to signal clearly restrictive periods or periods of monetary easiness. The changes in the intervention rate during the eighties, shown in Chart 7, reveal a tendency to greater stability and a new frequency of change.

The development and improvement of monetary control mechanisms and the management of the intervention instruments, following the outline described in preceding paragraphs, provides the means to deal with the fundamental challenge faced by the monetary authorities: the attainment of a high level of efficiency in the working of the financial markets and guaranteed exchange rate stability, within a context in which the monetary actions by the Banco de España are adequately transmitted to the economic agents.

## ANNEX

### SELECTION STRATEGY FOR MONETARY TARGETS AND INDICATORS

In the outline of monetary targets described in the main text, the existence of a close and stable relationship between monetary aggregates and final variables constitutes the essential criterion for selecting the indicators to be used as the basis for decision-making by the monetary authorities. Since the beginning of the seventies, the Banco de España has been making successive empirical tests of these relationships, which, generally, have been dealt with in the framework of estimates of money demand functions.

The M3 demand function, which had good results until the early eighties, in terms of long-run stability and goodness of fit, ensuring its use as an intermediate target in monetary policy, started to deteriorate significantly in 1983 (see Dolado, 1985 and 1987). Accordingly, in 1984, the Banco de España began to concentrate its attention on a wider monetary aggregate, ALP, which neutralized in its definition the movement of the public towards assets other than deposits, highly liquid. Chart 8 shows the movement in the internal structure of ALP and this substitution process is clearly evident.

The behaviour of this aggregate during recent years has not been free from disturbances of different kinds, which have had their origin, to a large extent, in the strategies designed by the financial institutions to avoid Banco de España regulations and to offer their customers tax-free assets, although there have been some genuine financial innovations. Though the effect of these phenomena have eroded, at certain times, the informative

capacity of ALP, its long-term relationship with the final variables has maintained acceptable levels of stability. Thus, prediction of the velocity of circulation of the aggregate, used in the years of monetary programming, has reached a reasonably satisfactory degree of closeness to the actual behaviour.

The studies of the demand for ALP made in the eighties, though they detect specific short-run instabilities in the estimated equations, show some very stable long-term elasticity, resistant to changes in specification and producing values for the parameters easy to justify by economic theory. A particularly attractive feature of the results of these equation is the ease with which long-run homogeneity is accepted among the nominal ALP balances and the price level, without any apparent erosion of the stability of this relationship over the last few years. Similarly a unit elasticity in the long run between ALP and real income is observed. The specification of these equations is completed by using an own interest rate to measure the increasing sensitivity of the aggregate to changes in the return on the assets contained in its definition, and an alternative interest rate and inflation rate as opportunity cost variables. These three variables have an appreciable effect on the solution of the estimated equations in both short and long run. The response functions deduced from the dynamic presented by these equations generally extends considerably over time, which is consistent with the slow adjustment processes of prices and quantities in the goods and labour markets and with the shock-absorber role of the more liquid financial assets in the disturbances affecting the decision-making process of the economic agents.

Recently, since the third or fourth quarter of 1989, the ALP demand function has begun to show marked

signs of instability. The process of financial disintermediation which followed the imposition of restrictions on bank credit has caused a large increase in the velocity of circulation of the aggregate. As this disturbance is associated with a transitory regulation, it es to be expected that once the credit restrictions are lifted the stability of the ALP demand function will be restored.

Nonetheless, these difficulties have given rise to new empirical studies, still in preparation, on the following two aspects: first, demand functions for an extended ALP have been estimated, with the inclusion in its definition of balances of commercial paper in the hands of the public, growth of this financial instrument has been very rapid since credit restrictions were imposed. The results point to a recovery, although only partial, of the stability of demand for this expanded ALP. Second, the opposite path has been taken, constructing aggregates which, while maintaining within the spectrum of wide liquidity definitions, are more limited in size than ALP.

The first results obtained with more limited definitions of liquidity, excluding from ALP some of the components -for example, the outright purchases of Treasury bills or longer-term "repos" with public debt- are promising and point to the possibility of obtaining for these aggregates well defined demand functions. However, they have had similar problems of stability since the tightening of credit.

Finally, in line with Banco de España strategy to use the informative capacity offered by other monetary indicators, there are studies underway to evaluate existing relationships between final variables and narrow

monetary aggregates and credit aggregates, which area already under close observation by the monetary authorities. Although still provisional, some results can be advanced.

The smaller aggregate than M3 have shown in recent years a relatively stable relationship with nominal expenditure, resulting from the lower sensitivity of its components to the interest rates for financial assets excluded from its definition. As the process of financial deregulation and innovation takes place, and the taxation affecting financial assets stabilizes, it is probable that the informative content of the smaller aggregates will improve.

The M2 demand equations appear to show the best properties. Although the short-run behaviour of this aggregate was subject to financial disturbances of some size, the equations have shown very stable behaviour for the last four years; long-run homogeneity between prices and money is accepted without difficulty; long-run elasticity with respect to real income is greater than unity; in the long run solution of the model, an important part is played by the opportunity cost variables, the inflation rate and return on the nearest substitutes to demand and savings deposits, while in the short run the most appreciable response to demand are the changes in the interest rate for those assets included in M2; the response functions deduced from the dynamic of the equations are appreciably faster than those obtained in the case of ALP. This latter feature is of special interest in a context in which several indicators can be relevant in the marking of decisions on monetary policy. Consequently, observation of the behaviour of M2 is very useful as it provides information complementary to that provided by ALP on the momentum of the adjustment processes of financial and real variables.

### NOTAS

- (1) A detailed description of the financial assets included in the definition of ALP is founded in Aríztegui and Pérez (1984) and with more recent information in Sanz (1988).
- (2) The Boletín Económico del Banco de España for May this year carries an extensive description of the change made in the implementation of monetary policy resulting from this reform.
- (3) The Banco de España is authorized to change the level of the cash reserve ratio up to a maximum level of 7%.



**Table 1**

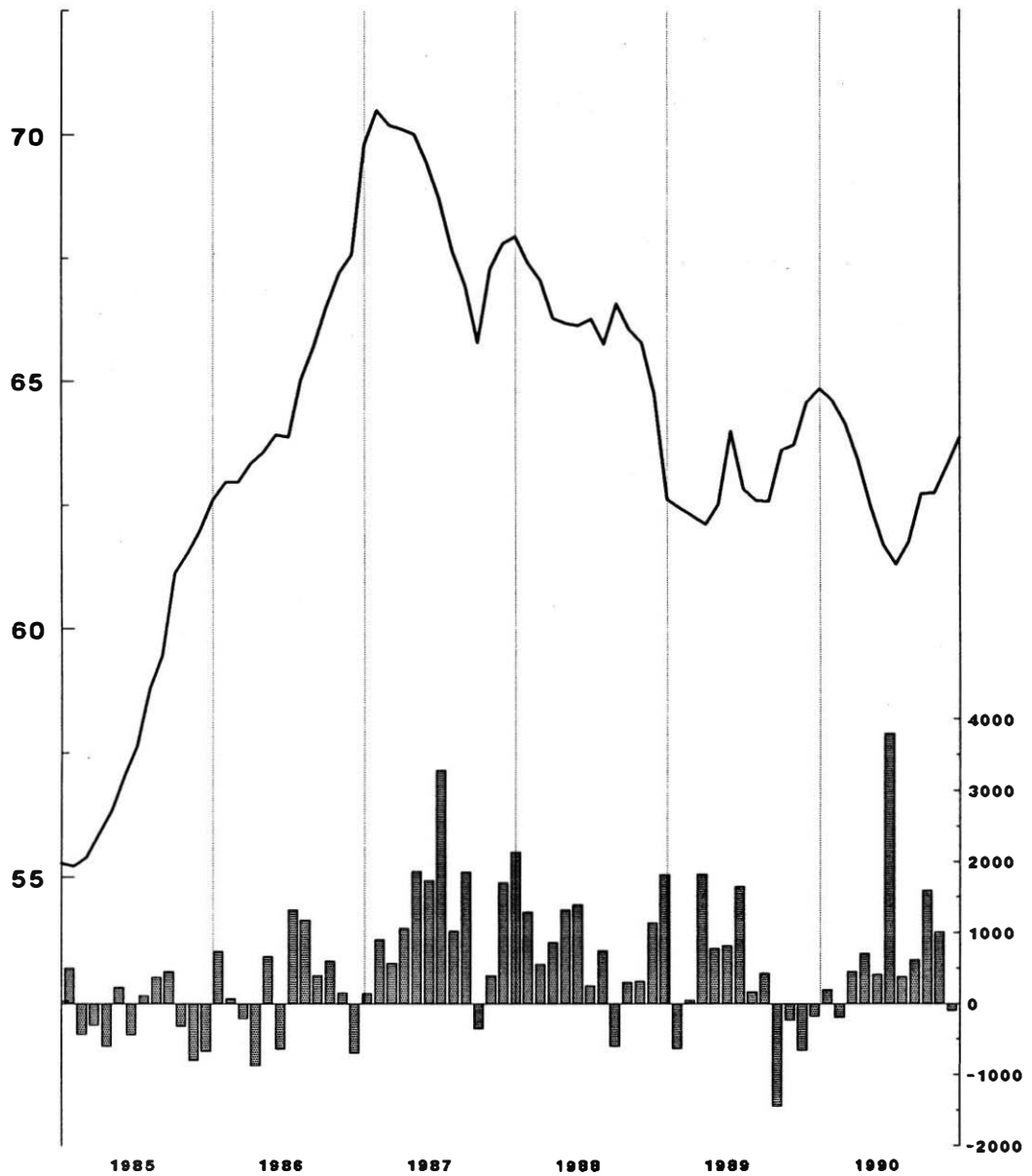
**Monetary targets in Spain**  
**(% December t/December t-1)**

	Target band		Actual figure	
	M3	A.L.P.	M3	A.L.P.
1978	14,5 - 19,5	-	20,3	-
1979	15,5 - 19,5	-	19,4	-
1980	16,0 - 20,0	-	16,1	-
1981	14,5 - 18,5	-	15,7	-
1982	13,5 - 17,5	-	15,3	-
1983	11,0 - 15,0	14,0 - 18,0	12,8	16,1
1984	8,5 - 12,5	11,0 - 15,0	12,8	14,0
1985	-	11,5 - 14,5	-	13,2
1986	-	9,5 - 12,5	-	11,9
1987	-	6,5 - 9,5	-	14,3
1988	-	8,0 - 11,0	-	11,0
1989	-	6,5 - 9,5	-	10,4
1990	-	6,5 - 9,5	-	9,3(*)

(\*) Accumulated growth to September.

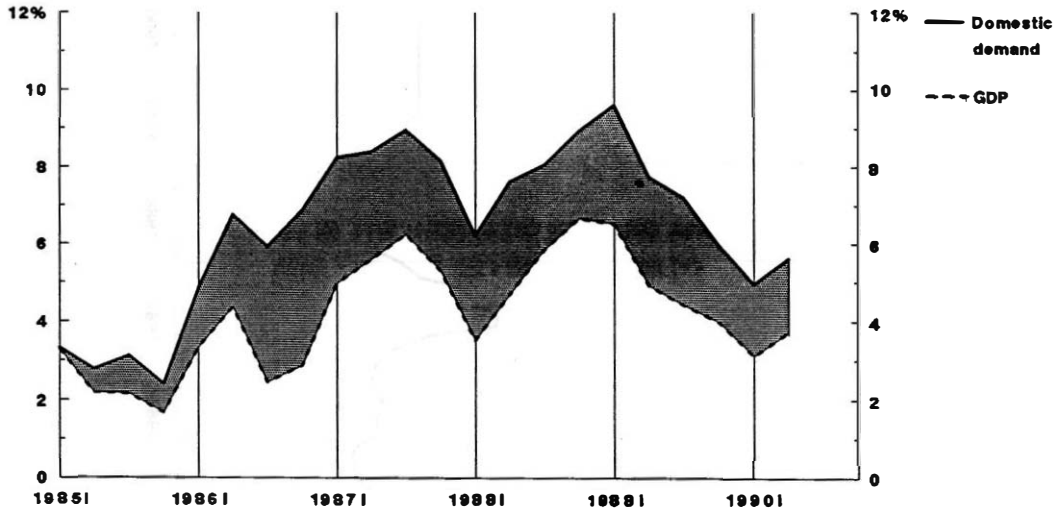


### PTA/DM EXCHANGE RATE AND MOVEMENTS IN CENTRAL RESERVES (1)

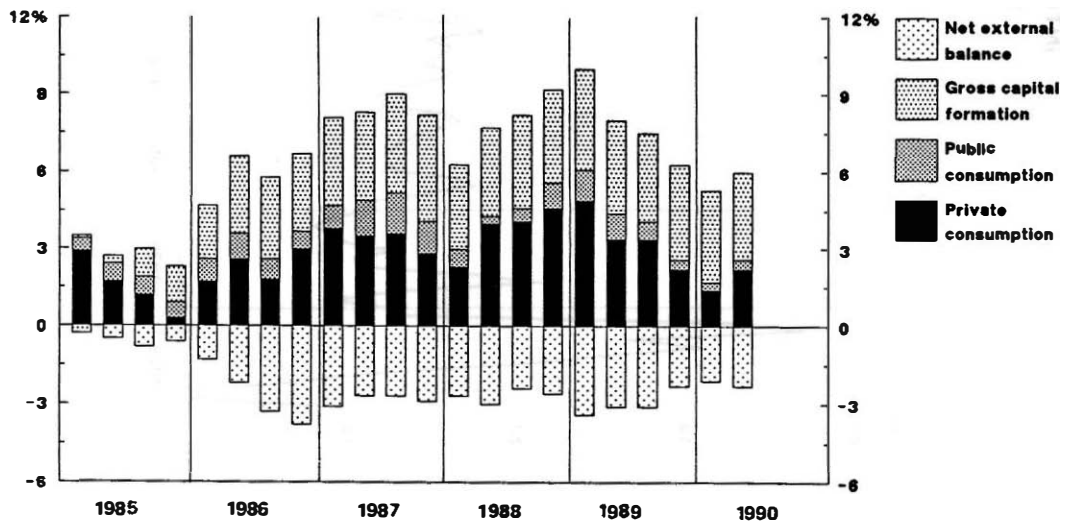


(1) Movement in reserves in million of dollars.

**CHANGES IN THE DOMESTIC DEMAND AND GDP,  
AND THE GAP BETWEEN THEM (\*)  
(Real growth)**

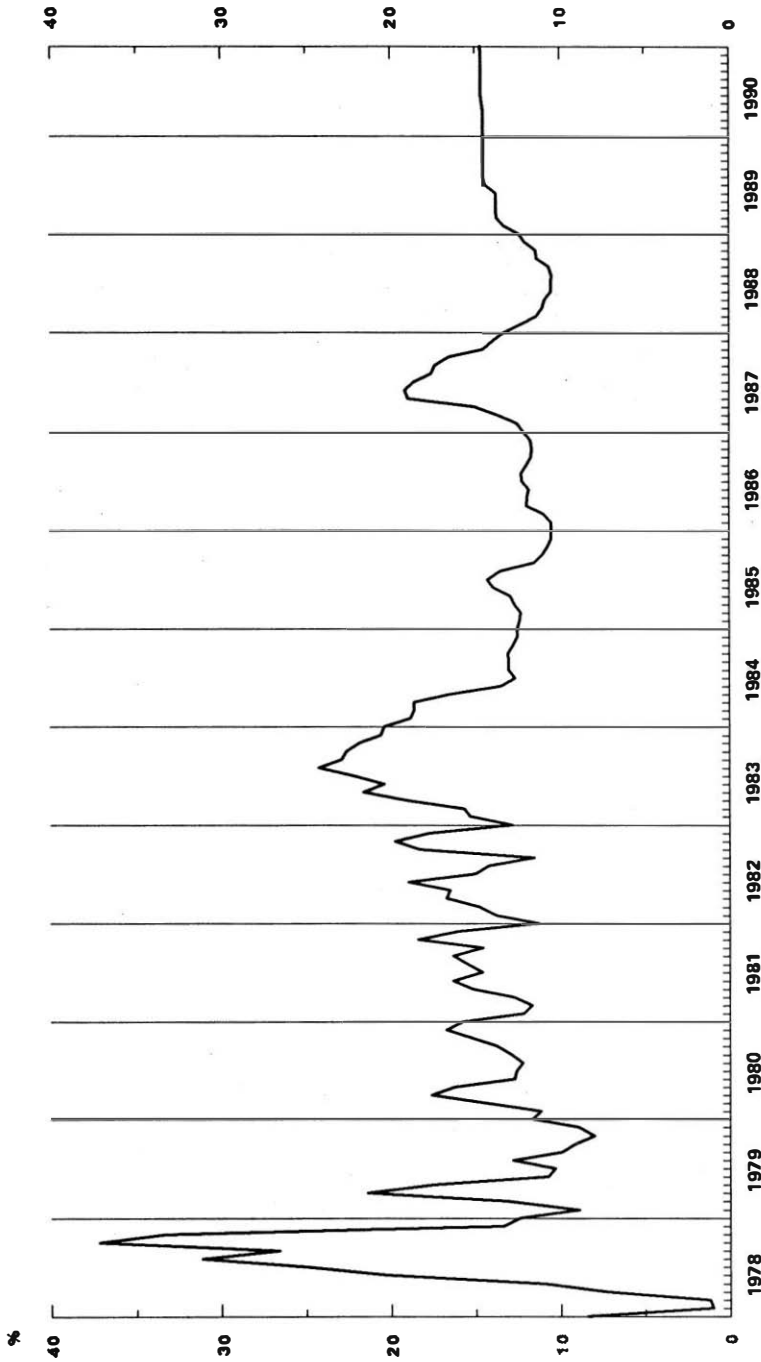


**CONTRIBUTION TO GDP GROWTH BY ITS COMPONENTS (\*)**



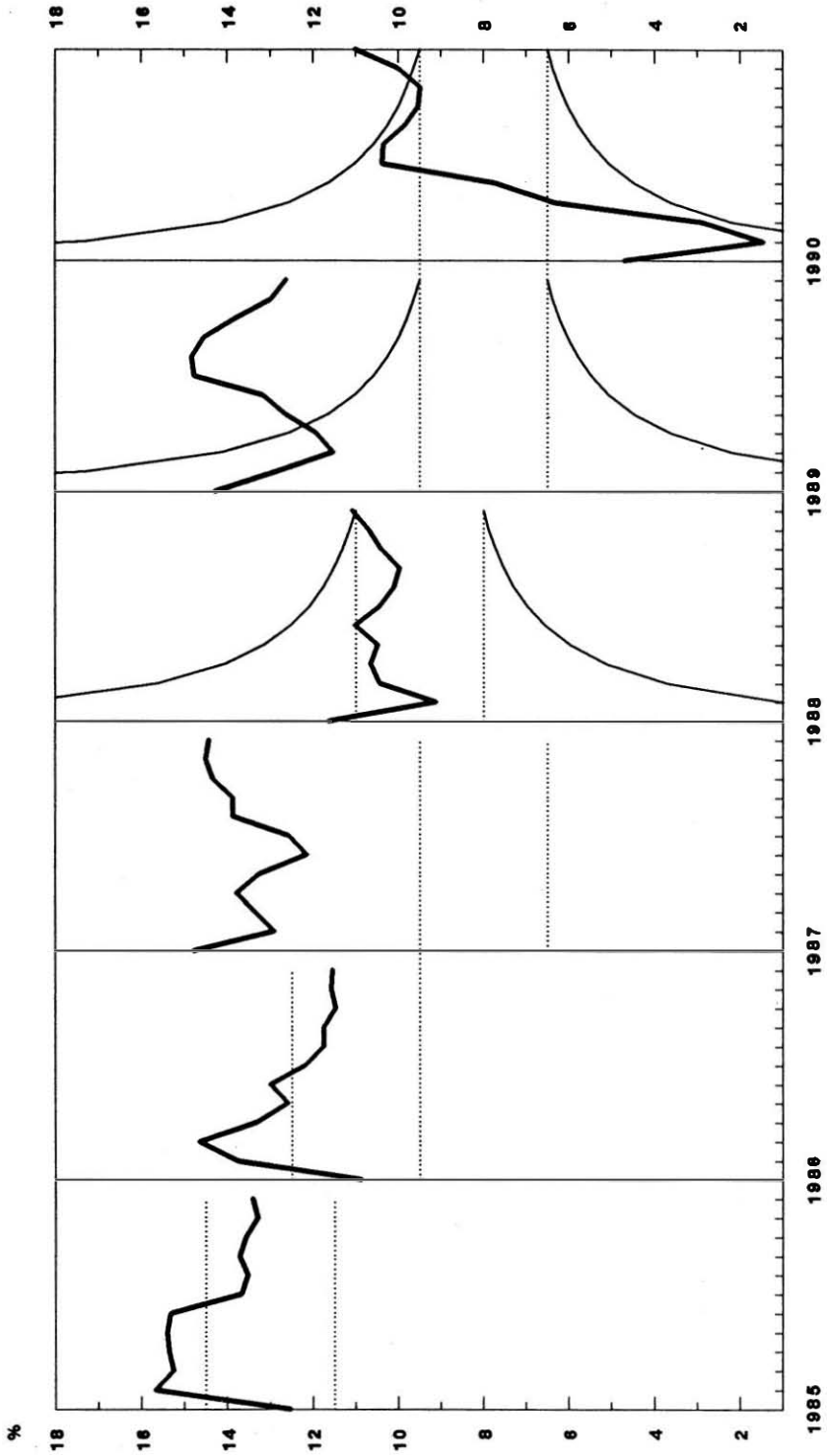
(\*) Growth rates for one quarter compared with same quarter of preceding year.

**INTEREST RATE FOR INTERVENTION  
BY THE BANCO DE ESPAÑA (\*)  
Monthly mean of daily data**

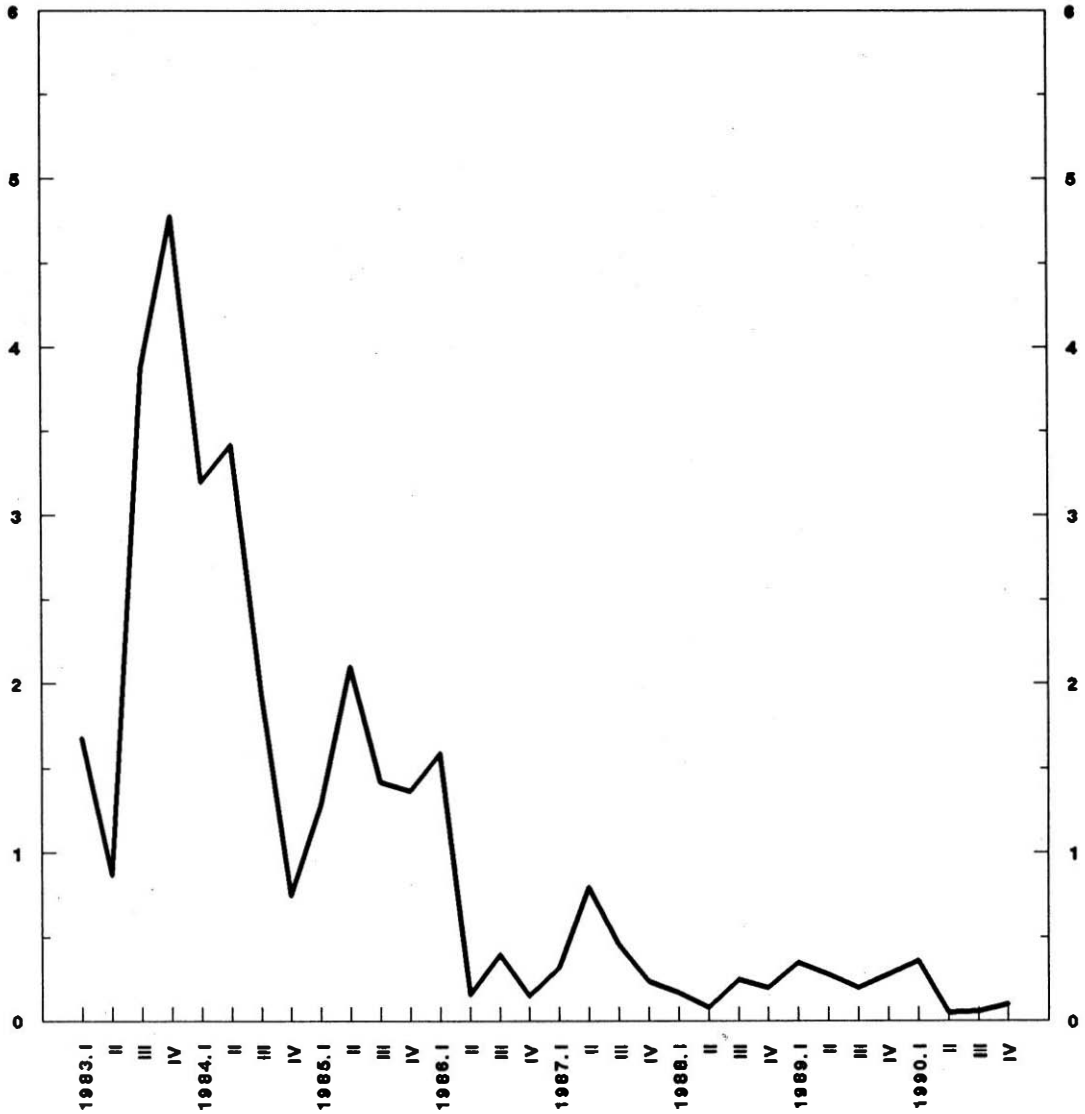


(\*) The marginal interest rate of the daily auction of monetary regulation loans was used until April 1990. Since May, the rate of interest used is that for the ten-day auction of Banco de España certificates.

**TARGETS AND ACTUAL FIGURES FOR ALP**  
Annualized rate on December of preceding year

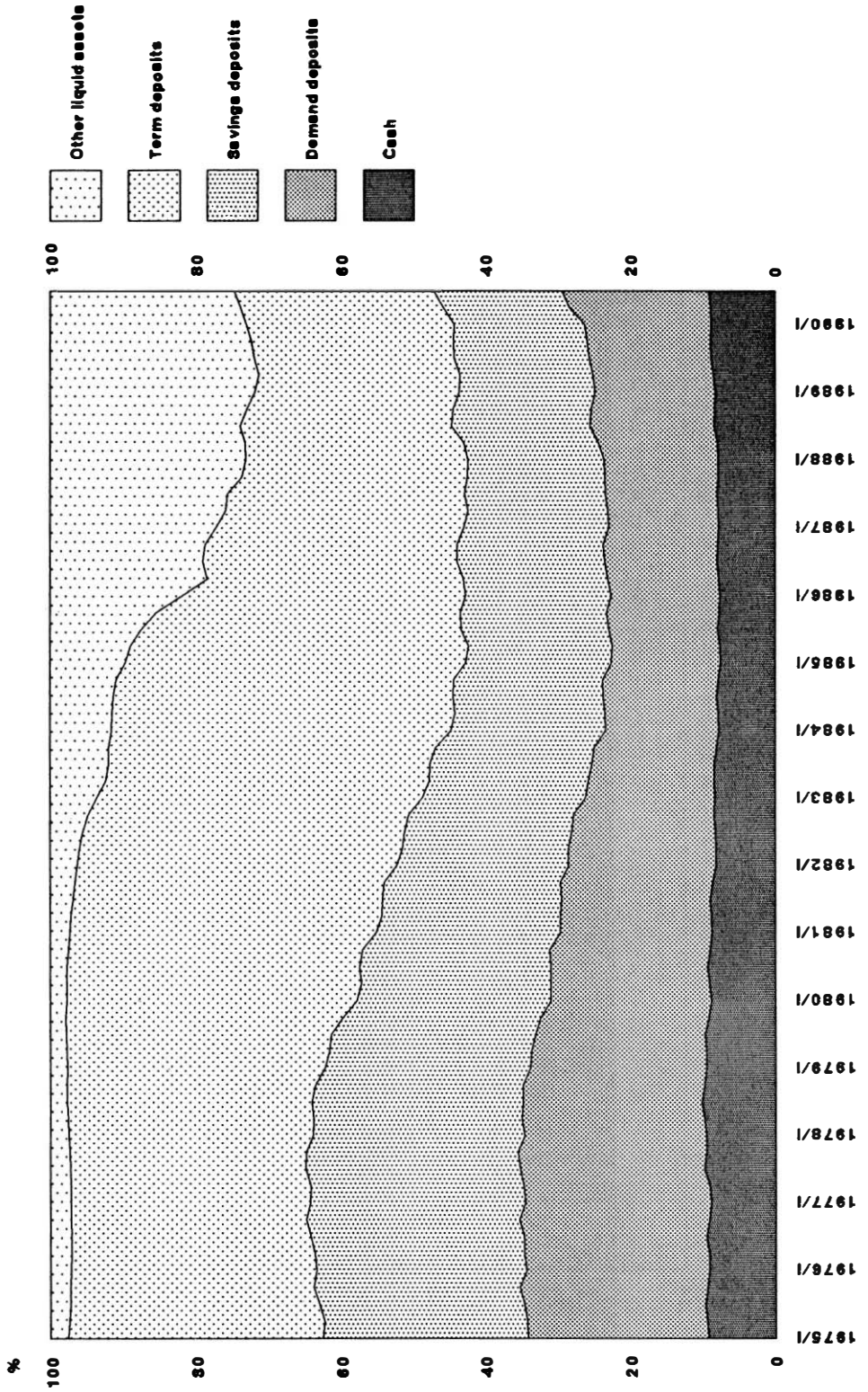


### VOLATILITY OF THE INTERBANK INTEREST RATE FOR OVERNIGHT DEPOSIT OPERATIONS. (a)

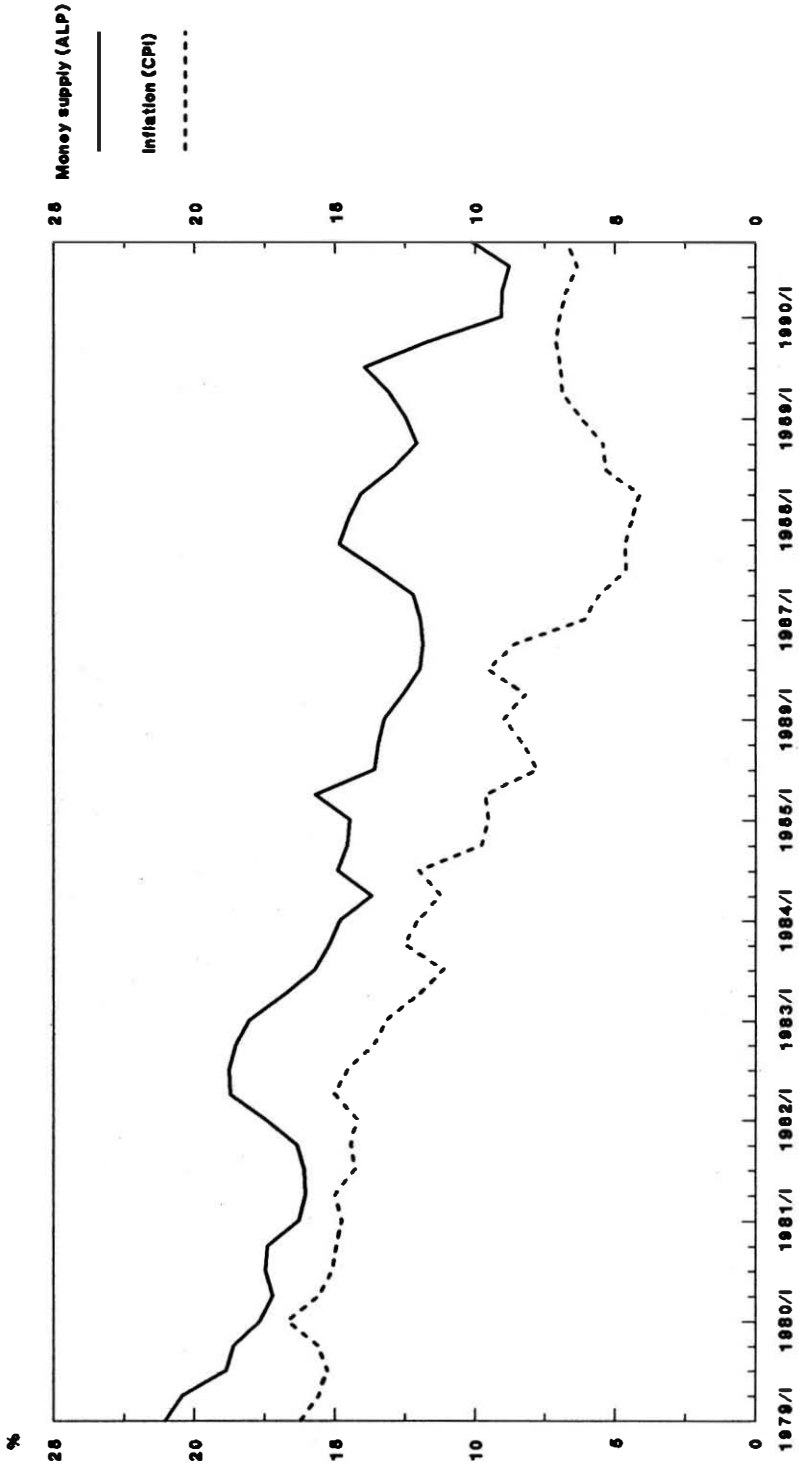


(a) Quarterly standard deviations of the day-to-day change.

### INTERNAL STRUCTURE OF ALP Breakdown by Instruments

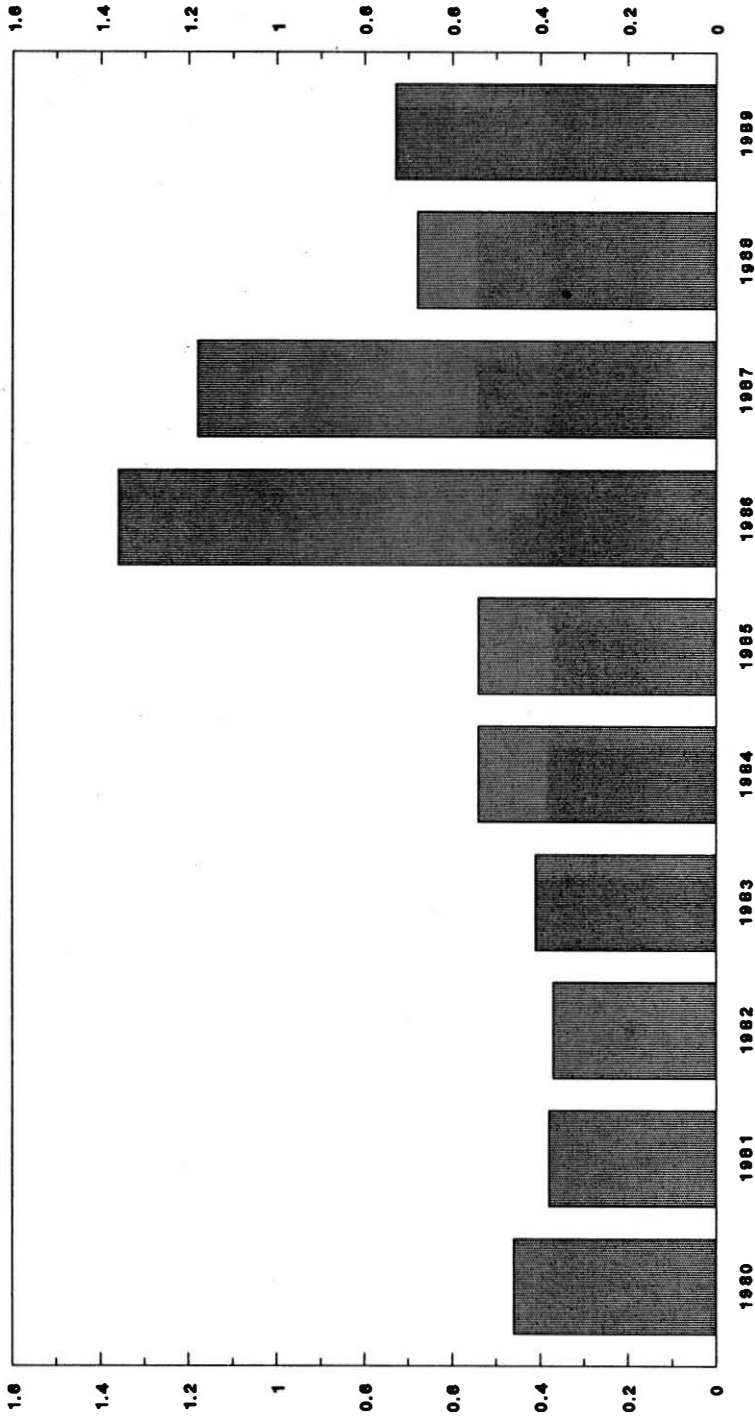


### INFLATION AND MONEY SUPPLY TRENDS (\*)



(\*) Growth rates for one quarter compared with same quarter of preceding year

**DEGREE OF DEVIATIONS IN THE TEN-DAY TARGETS  
FOR BANKING RESERVES. (\*)**



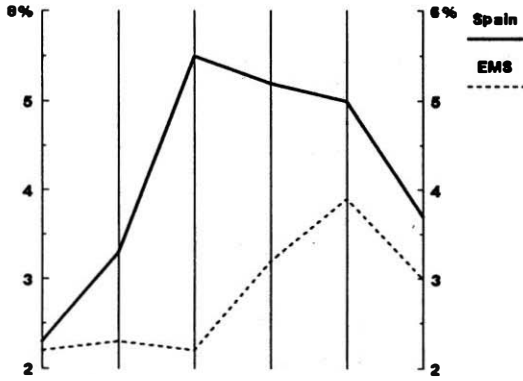
(\*) Annual standard deviation of the differences expressed in logarithms, between the ten-day period mean of the daily balances of banking reserves and the related targets.



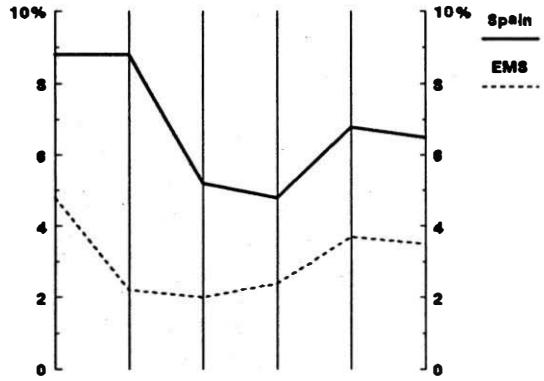
### CONVERGENCE INDICATORS

#### SPAIN - EMS (a)

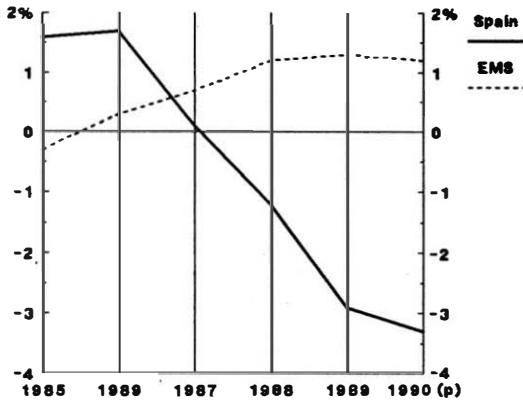
REAL GDP



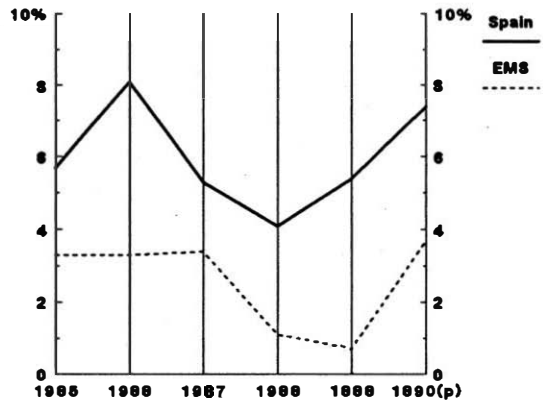
CONSUMPTION PRICES



CURRENT ACCOUNT (% GDP)



UNIT LABOUR COSTS



(a) The data on the EMS relates to the simple mean, without Spain.

(p) Forecast.

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