

THE OPERATION OF MONETARY POLICY IN IRELAND

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1. INTRODUCTION

Most reviews of monetary policy concentrate on its appropriate ultimate objective, the degree to which it is being achieved and, from a macro-economic perspective, why the outcome may be deviating from that envisaged. A different emphasis is given here, which timelessly captures the significance of the financial markets nowadays for the successful operation of monetary policy, and concentrates on how it is conducted from day to day. This account also highlights why the ultimate objective of monetary policy will not be realised unless the cumulative results of the daily operations of monetary policy in the financial markets are compatible with realising price stability over time.

The daily, weekly or monthly monetary policy operations are undertaken with the objective of realising the medium-term goal of stable prices. It is generally accepted nowadays that it is by realising price stability and minimising uncertainty in financial markets that monetary policy plays its part in promoting higher employment and production. While this review is informed by operational experiences since joining the European Monetary System (EMS) in 1979, it presents an up-to-date picture of the daily implementation of monetary policy. It does this as the Single European Market in financial services is about to become a reality at the beginning of 1993 and as the route towards economic and monetary union (EMU) is under construction.

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Membership of the EMS, particularly its Exchange Rate Mechanism (ERM), and the abolition in March 1979 of the one-for-one - no-margins fixed link between the Irish pound and sterling, led to significant changes in the financial markets. It also resulted in major changes in the techniques and instruments used by the Central Bank in implementing monetary policy. There was a switch to market oriented instruments for providing and withdrawing Irish pound liquidity to and from the banks. Much faster responses were required to the effects of capital outflows and decreases in the official external reserves on the banks' Irish pound balances at the Central Bank. As confidence was gained with the change in approach, less reliance was placed on administrative arrangements such as credit ceilings.

The more market oriented approach by the Central Bank to its interventions in the Dublin money and foreign exchange markets coincided with similar experiences by many other Central Banks in developed and developing countries. These, in turn, were in response to the significant changes since the early 1970s in financial markets worldwide. However, changes in the market operating procedures introduced by the Central Bank of Ireland in the late 1970s and early 1980s were much more substantial than those experienced by a number of other central banks. The latter were not confronted with as significant a degree of change over as short a period of time.

An account is given here of the major developments in the evolution of the financial markets in the 1980s and early 1990s and how monetary policy is being implemented in anticipation of the Single European Market in 1993. Initially, the stance of the Central Bank from day to day in implementing monetary policy is outlined. Subsequently, the importance of reasonably well developed financial markets in the context of implementing monetary policy is examined with particular reference to the Dublin money market, the Dublin foreign exchange market and the Dublin bond market. Throughout this review, specific attention is given to the main factors that influence interest rates both during the day and from day to day. In particular, the focus is on the manner in which the Central Bank uses its instruments and techniques to influence the exchange rate in the ERM; to influence money market interest rates; and to provide and withdraw balances at the Central Bank from the banks.

Before proceeding to the more technical issue of how monetary policy is conducted, it is appropriate to identify the aim or objective of monetary policy. The goal of monetary policy is to realise price stability, that is, to maintain the value of money. While it is easy to state or specify the ultimate objective of monetary policy, it is quite another matter to achieve it, that is, to avoid inflation. In a small open economy, where most prices are strongly influenced by international price developments, it is very difficult to have price stability unless prices are also stable in the country's trading partners; the exchange rate is strong in the ERM; the external reserves are adequate to maintain confidence in the exchange

rate while allowing some scope for foreign exchange interventions; and interest rates are high enough to yield an adequate level of reserves.

Certain targets are intermediate in the sense that they are important monetary magnitudes between the daily operations of the Central Bank and the ultimate goal of price stability which must be maintained at appropriate levels over time. They come between the Central Bank's policy actions and the realisation of price stability in the market economy. However, small movements in the exchange rate, the external reserves and interest rates are continuously occurring in the financial markets. These movements equate the demand for and supply of Irish pounds and facilitate the Central Bank in managing the intermediate objectives of monetary policy. The ultimate or primary objective of monetary policy, and what are described as the intermediate objectives of monetary policy, may be summarised as follows:

Ultimate Objective	(i) Stable domestic prices including strong exchange rate
Intermediate Objectives	(i) Level of the exchange rate
	(ii) Level of the official external reserves
	(iii) Level of the money market interest rates

The fundamental task in implementing monetary policy is to maintain the attractiveness of the Irish pound *vis-à-vis* that of the currencies of other countries, especially those of the country's trading partners. If this is achieved, the Irish pounds in circulation will tend to increase in line with the currencies of the country's trading partners. Furthermore, the degree of price stability in Ireland will tend to be similar to that in the country's trading partners.

However, the problems of implementing monetary policy change fundamentally in circumstances where the currency becomes less attractive relative to other currencies. This would happen if there was an expected or actual decline in its purchasing power and in its rate of return compared with other currencies. Such experiences open up a gap between the payments and receipts that are made in Irish pounds as foreign currencies are substituted for holdings of Irish pounds. As a result, the exchange rate declines, the external reserves fall and interest rates increase as the amount of Irish pounds in circulation contracts.

In the short term, the Central Bank may offset most of the automatic adjustment to market forces by creating Irish pounds to replace those converted into other currencies and discourage interest rates from rising. If the conversion of Irish pounds into foreign exchange continues, the Central Bank will become concerned about replacing them. It will be forced to respond by making it less attractive, through higher interest rates, for holders of Irish pounds to continue converting them into other currencies and replacing them by borrowing from the Central Bank. In turn, this would contribute to restoring the relative attractiveness of the Irish pound, to the reconstitution of the external reserves (through the conversion of foreign currencies into Irish pounds) and to the repayment of the Irish pounds temporarily lent by the Central Bank.

These experiences are now explored with the emphasis on the technical implementation of monetary policy. The approach adopted is to gradually build up the picture of the day-to-day operation of monetary policy in the markets. While monetary policy is a macro or overall phenomenon, its implementation or operation is micro or detailed in orientation. However, the cumulative effects of the detailed or daily operations should be consistent with achieving, over time, the intermediate and ultimate objectives of monetary policy and with minimising instability in the financial markets from day to day.

The environment in which monetary policy is implemented from day to day is a complex one. Uncertainty is an inherent characteristic of markets, including the money and foreign exchange markets. Consequently, the interface and communication between the Central Bank and the market participants takes place in a milieu that is uncertain but normally not disorderly as it was in recent times. The Central Bank itself may not always have a complete view of what has happened or is currently happening in the markets and, of course, it can only guess at what may happen in the future. Market participants are operating with even more limited knowledge of the recent past, the present and the future.

Consequently, both the market participants and the Central Bank are continuously interpreting one another's actions in an environment in which a varying degree of uncertainty exists. Thus, there is ample scope for both sides to hold different views and interpret what is happening differently. As a result, the day-to-day operations and implementation of monetary policy are far from being mechanistic even though a description of them may suggest that they are from time to time. Rather it is the interaction of market forces that is continuously being observed in the money and foreign exchange markets, with the Central Bank conveying signals to the market and intervening on occasions with a picture that is blurred about what may be the outcome of its actions in reducing uncertainty. Indeed, both the market participants and the Central Bank are involved in invoking signals from one another, the latter with a view to reducing uncertainty and erratic movements in the

exchange rate and in interest rates. This is the market environment in which monetary policy is implemented.

The manner in which the day-to-day implementation of monetary policy is conducted is portrayed here, with the emphasis on the strategies that are pursued. Particular developments during any specific period of time are not discussed as they do not readily lend themselves to future replication because of the existence of uncertainty and because circumstances differ. Furthermore, what is said relates primarily to present practices and should not be interpreted as heralding future changes in the day-to-day operation of monetary policy.

Finally, it is appropriate to point out that there is a wide range of economic and related considerations that the Central Bank takes into account in implementing monetary policy. These include the latest trends in prices at home and abroad; relevant developments in the international interest rate, exchange rate and bond markets; the conditions in the domestic money, foreign exchange and bond markets; the important macro-economic developments in the Irish economy, including fiscal developments, incomes, production, competitiveness, unemployment, credit, money supply, prices, balance of payments, level of external reserves; and finally the appropriateness of the domestic economic policies being implemented. The day-to-day operation of monetary policy is informed by these macro-economic considerations and also by the exchange of views between Central Banks.

2. MONETARY POLICY: DAILY INTERFACE WITH MARKETS

The Central Bank implements monetary policy through its relationships with and influences on the financial markets. Consequently, the Central Bank exercises a reasonable degree of influence over the movements in short-term interest rates during the day or days ahead but not continuously over time. The day-to-day links between the Central Bank and the markets are mainly through two interconnected channels.

The *first channel* is through the money-market transactions with the banks that are conducted at the initiative of the Central Bank. They are undertaken in quantities and maturities selected by the Central Bank, but at rates of interest that normally are determined by the markets. However, one cannot ignore that as the Central Bank is itself intervening in the markets it has an indirect influence on interest rates. The transactions conducted through this first channel may be described as the *Central Bank's discretionary position*. The *second channel* that provides a link between the Central Bank and the markets is the moderate scope that is provided to the banks to borrow overnight or place funds overnight at the Central Bank at their initiative. This may be described as the *banks' overnight position vis-à-vis the Central Bank*. These transactions are conducted at rates of interest already

chosen, in the short term, by the Central Bank but the amounts borrowed or lent overnight are the outcome of the interaction of market forces with Central Bank influence.

The *banks' overnight position*, (the activities conducted through the *second channel*), together with their other short-term lendings and borrowings that are reflected in the *Central Bank's discretionary position* (the activities conducted through the *first channel*) may be described as the *banks' short-term position vis-à-vis* the Central Bank. Their *longer-term position* consists of their holdings of primary liquidity deposits with the Central Bank. The banks are rarely in the situation where their *short-term position* is not changing from day to day whereas their *longer-term position* remains fixed from month to month.

The banks' short-term position is always changing because of the continuous ebb and flow of funds in and out of the country, to and from the Exchequer Account at the Central Bank and between the banks and the Central Bank. These payments and receipts are rarely in balance either during the day or over longer periods and are the financial forces that change the magnitude of the banks' short-term position.

More specifically, the changes during the day and from day to day in the magnitude of the banks' short-term position are the outcome of the following: the net effect of the private sector's total Irish pound transactions *vis-à-vis* those in foreign currencies, which include those of both a personal and corporate nature and those by the banks and other financial institutions; the net effect of the public sector's transactions with the private sector; and the net effect of the Central Bank's own non-market transactions with the banks. The daily impact of the main sectoral transactions on the changes in the Central Bank's involvement with the money market may be depicted as follows:

Chart II: Influences Affecting Central Bank's Involvement with Money Market			
Private Sector¹	Central Bank	Public Sector	Central Bank
(including banks) Net foreign exchange transactions against Irish pounds (interventions by Central Bank)	(non-market activities) Currency required by public and changes in Banks' Primary Liquidity	(with private sector) Exchequer and other Official Agency Transactions with private sector (including banks)	(market activities) Repos, Swaps, Term Deposits, STF Drawings and Overnight Balances

3. PREDICTING MARKET INVOLVEMENT

A quantitative assessment is made of the expected major flows of money in the economy each day and how they converge on the size of the banks' short-term position *vis-à-vis* the Central Bank. Apart from forecasting a macro or overall view of the economy, for periods from three months to a year or more ahead for the purposes of formulating policy, the Central Bank is also continuously updating its estimates of the banks' expected short-term position. It does this for the expected position at the close of business today, tomorrow and for a number of days ahead as an aid to implementing monetary policy. These short-horizon financial forecasts for up to a week or so ahead are useful for keeping in touch with the market and support the ongoing management of bank liquidity. They are used to form a view about the magnitude of the expected changes from day to day in the banks' short-term position.

In forecasting the changes in the banks' short-term position from day to day some transactions can be anticipated. For example, the maturity dates of the foreign exchange swaps and of the sale and repurchase agreements and term deposits, which are conducted by the Central Bank for the purposes of managing bank liquidity, are known in advance. Other transactions can be anticipated because of institutional arrangements such as the next-day settlement for Government security transactions and the internationally recognised two-day lag in settling foreign exchange deals.

More can be anticipated because the dates of some payments are fixed in advance, for example, the redemptions of and dividends on Government Securities and interest on primary liquidity deposits at the Central Bank. Furthermore, prior knowledge of certain large lodgements to, or disbursements from, the Exchequer Account that are for settlement the same day is also available to the Central Bank. In addition, the Central Bank would have details of other lodgements to, or disbursements from, the Exchequer Account that are for settlement through the cheque clearing system that day, the next day or over the days ahead.

However, it is not possible to predict precisely at the start of the day the outcome of the impact of some types of transactions that must be settled before close of business that evening. Such transactions from time to time include special presentations of large-value cheques in the afternoon in respect of unexpected taxation receipts and disbursements of public expenditure. In addition, unanticipated lodgements or withdrawals of currency - legal tender notes - by the banks may occur during the day. The unanticipated transactions also include the net settlement in respect of certain types of money-market transactions (Exchequer Notes and Section 69 Securities)² conducted during the day with the National

Treasury Management Agency (NTMA). These transactions must be settled by the close of business on the day on which they are conducted.

Thus, the Central Bank is in the situation that it is not possible to anticipate precisely the net amount to be settled between itself and the banks at the close of business each day. Consequently, the Central Bank, by way of its Short Term Facility, is prepared to lend overnight on a secured basis up to a given limit to any bank and also to accept overnight balances from any bank. Furthermore, the Central Bank would have announced that morning the rate of interest (the STF Rate) it will charge that evening for drawings of overnight funds under the Short Term Facility and the rate that it will pay on banks' overnight balances with it.

4. CONSTRAINT ON CENTRAL BANK

Because of these arrangements, the Central Bank is regarded as normally being in the position to influence the level of money market interest rates in the very short term, that is, during the day and from one day to the next. However, the Central Bank is not in a position to continue to maintain the level of the money market rates over time. It could only do this if, as a result of the private sector's external transactions, there was no cumulative movement, in either direction, in the official external reserves from what the Central Bank already regarded as an adequate level.

Normally, small changes in the official external reserves, due to the private sector's transactions with abroad, that are expected to be reversed fairly quickly, are financed or accommodated by the Central Bank. The Central Bank provides or withdraws liquidity from the banks at current market rates, and leaves the banks with little change in their capacity to draw on the Short Term Facility. In this way the additional uncertainty associated with significant changes in interest rates which would be reversed within a short period is avoided. Even if the external reserves continue to either contract or expand for a short period of time, the Central Bank may be prepared, depending on the specific circumstances in domestic and international financial markets, to temporarily offset most of the effects of the movements in the external reserves on the domestic money market.

The Central Bank would do this if it were confident that the movements in the external reserves would be reversed quickly, with little required change in interest rates. To achieve this, the Central Bank would rely in most circumstances on three main techniques to change the level of its discretionary position. These are known as Sale and Repurchase Agreements (short-term repayable advances secured by Irish Government Bonds); Term Deposits from banks and Foreign Currency Swaps (temporary exchanges of foreign currency and Irish pounds between the banks and the Central Bank).³ The maturity distribution of these

borrowings and lendings falling within the scope of the Central Bank's discretionary position would be planned to take account of when the movements in the official external reserves were likely to be reversed.

5. IMPACT OF EXCHEQUER'S OPERATIONS

Apart from the liquidity implications for the banks of changes in the level of the official external reserves, it is also necessary to take into account the effects of the Exchequer's transactions, including those of the NTMA, on the banks' short-term position at the Central Bank. In normal circumstances a temporary increase in the Exchequer's receipts from the private sector will be accommodated by, for example, additional repos and vice-versa if the Exchequer's balance declines due to payments to the private sector.

To be more precise, it is the net effect on the banks' balances at the Central Bank (due to the change in the external reserves arising from private sector transactions and due to the movements in the Exchequer's balance as a result of the public sector's transactions with the private sector) that is taken into account before deciding on the magnitude and direction of repos, term deposits and swaps. The extent to which these techniques or instruments are used is also determined in conjunction with the Short Term Facility borrowings (or repayments) that are envisaged by the Central Bank to take place the next day, or during the days ahead.

Unwarranted changes in domestic interest rates are discouraged by pursuing this strategy. For example, this strategy would be pursued if it were judged by the Central Bank that the domestic liquidity effect of recent foreign exchange market developments on the external reserves would be reversed without much delay. In practice, of course, the external reserves are rarely at an optimum level. They are either moving from or towards this level either in a downward or upward direction.

Similarly, the Exchequer's transactions with the private sector can result in temporary flows in either direction that can persist for some time before being arrested or reversed. They may also be accompanied by little change in the external reserves arising from the private sector's transactions with abroad. In such circumstances, the impact of the temporary movement in the Exchequer's balance at the Central Bank on the banks' short-term position *vis-à-vis* the Central Bank would be effected with little or no change in interest rates.

However, one cannot always be as relaxed about the activities of the Exchequer in the money market, especially if the swings in the Exchequer balance are of such a magnitude that they are difficult to offset in the market. At times the operations of the Exchequer could have disruptive implications for the day-to-day implementation of monetary policy. A major

temporary increase in a short period of time in the level of the Exchequer balance, due to taxes and the proceeds of borrowing being withdrawn from the private sector, could be disruptive. In such circumstances, a large but temporary rapid increase in Central Bank support to the market could arise.

Such experiences could lead to greater uncertainty unless the market was confident that the accumulation of funds in the Exchequer was temporary and would be reversed in an orderly manner. In such circumstances, the accompanying commitments by the banks of their Irish Government bond portfolios and their increasing foreign currency borrowings could also add to uncertainty, as interbank limits and other prudential requirements were becoming exhausted. Such occasions would be rare.

Conversely, problems could also arise with a large and rapid decline in an already-accumulated Exchequer balance during a period when the Central Bank was limiting its market support with a view to increasing the external reserves or strengthening the exchange rate. A large contraction in the Exchequer balance in such circumstances would make it more difficult for the Central Bank to manage the reduction in its short-term support to the banks with an orderly impact on money market rates. Thus, swings in the balance maintained in the Exchequer Account that quickly flooded or squeezed the money market are not supportive of the day-to-day operation of monetary policy, even though the effects of the swings cancel each other out over a relatively short period of time.

6. MANAGING BANKS' SHORT-TERM POSITION

One of the objectives of external reserves and bank liquidity management is to facilitate short-term movements in them while at the same time avoiding large cumulative swings. Movements in external reserves and bank liquidity have the potential to gather a strong momentum and become relatively large, thereby leading to major unnecessary temporary changes in interest rates. With a view to minimising the occurrence of such events, the temporary provision or withdrawal of liquidity, through the repos, term deposits and swaps referred to earlier, is normally conducted at competitive current market interest rates.

However, in exceptional circumstances, the Central Bank may effect some repos and term deposits bilaterally with banks at rates of interest that may not fully accord with those currently prevailing in the market. The Central Bank would do this in very exceptional circumstances where it felt it was appropriate that its views about the level and direction of change in short-term interest rates ought to be communicated to the market in this manner. The Short Term Facility Rate (STF Rate) is normally above short-term money market rates. As this rate is the only rate that applies to Short Term Facility borrowings, it contributes to the stability of money market rates. Between July 1980 and December 1985, the STF Rate

for an individual bank was higher the greater and more frequent the degree of utilisation by that bank of its quota. This feature was dropped in late 1985 as it was felt that it was encouraging movements in money market interest rates that were not representative of the total market.

Nowadays, however, the movements in the excess of the STF Rate over market rates solely reflect the overall market conditions. At times, especially when the banks are not indebted to the Central Bank and are enthusiastically offering overnight deposits in the money market, the money market rates may fall away significantly from the STF Rate. This would be likely to occur especially if domestic money market sentiment suggested that a general decline in both foreign and domestic interest rates was likely.

If such market expectations were not judged to be well founded, the Central Bank would absorb funds from the market to discourage an unwarranted drop in money market rates. In such conditions, the Central Bank would borrow the Irish pounds from the banks by taking term deposits from them. It might also conduct negative swaps with them, that is, temporarily sell foreign exchange to banks for Irish pounds to discourage interest rates from declining to levels that were not considered appropriate.

There are also circumstances when very short-term market rates may rise towards and indeed go above the STF Rate. Normally, money market rates are not likely to rise above the STF Rate which is set some distance above market rates. This is to allow a reasonable degree of movement in market rates *vis-à-vis* rates abroad while at the same time, maintaining the external reserves at an adequate level. However, if the Central Bank is increasing its lending under the Short Term Facility and is not increasing its short-term lending to the banks through repos and swaps, very short-term market rates will tend to rise towards the STF Rate.

In such circumstances, as banks bid more vigorously on the inter-bank market for overnight deposits, short-term money market rates may rise above the STF Rate and attract funds from abroad. Such developments would be more likely to occur if market sentiment suggested a more than temporary rise in short-term interest rates. They would be more likely to increase if short-term rates were increasing generally in EC countries and were not likely to suddenly be reversed.

7. STABILITY AND COMPETITION

Given the absence of unsustainable trends in the official external reserves, short-term interest rates in the markets and those charged or paid by the Central Bank would be at levels that would be conducive to promoting stability in the exchange rate and in the official

external reserves. The banks, in responding to money and other market forces, would have set the combination of their Irish pound deposit and lending rates to both residents and non-residents to retain at least their existing market share of the growing Irish pound deposit and short-term credit markets. At the same time, the banks would be trying to avoid increasing their overnight reliance on the Short Term Facility or accumulating more than the normal level of overnight balances at the Central Bank.

Similarly, the other credit institutions, such as the building societies, would have set their interest rates with a view to maintaining, or perhaps increasing, their shares of the Irish pound deposit and credit markets. Furthermore, the rates of interest on that part of the public debt that is regarded as a substitute for deposits with banks and building societies would have been set at levels that would be consistent with official policy in relation to its share of the small savings market.

In this situation, the banks would be accumulating the primary liquidity deposits at the Central Bank that would be required to accommodate the growing productive potential of the economy at stable prices. The official external reserves would also need to be increasing so that they remained at an adequate level. In this environment, interest rates would be determined by the market and would be at a level that preserved the attractiveness of the Irish pound relative to other currencies.

The reality would be that, although the Central Bank would appear to be setting the overnight interest rate on the banks' borrowings from and on their overnight balances with the Central Bank, these rates would be as attractive, after taking expected exchange rate movements into account, as comparable interest rates in international financial markets. Otherwise, the prevailing Irish pound interest rates in the market place would not be yielding a sufficient accretion of foreign exchange to realise an adequate level of official external reserves which, in absolute terms, should be increasing over time.

To summarise, in such short-term circumstances, the banks and other credit institutions would be competing with each other and either maintaining, increasing or experiencing a reduction in their share of the growing deposit and short-term credit markets. Furthermore, the Central Bank would be confident that the level and structure of domestic interest rates were not out of line with those abroad. Interest rates would be at a level that would yield, over time, a rising level of adequate official external reserves. This increase in the reserves would be required to support the growth in currency and in the banks' primary liquidity deposits that would accompany the higher level of economic activity at stable prices. A summary statement given below of the Central Bank's assets and liabilities at the end of December 1991 highlights the manner and extent to which the Central Bank had directly

provided or withdrawn funds from the market at that date. The statement also shows the magnitude of the official external reserves at the end of December 1991.

Chart III: Summary of Central Bank's Assets and Liabilities (£ Million)

Liabilities		Assets	
Currency Notes and Coins	1,568.2	Official External Reserves	3,256.0
Government Balances	1,247.8	Short Term Facility Drawings	18.3
Banks' Primary Liquidity	668.7	Sale and Repurchase Agreements	798.8
Banks' Term Deposits	Nil	Secured Advances to Banks	Nil
Banks' Overnight Balances	1.9	Irish Government Bonds	229.3
Capital, Reserves and other Liabilities (Net)	815.8		
	<u>4,302.4</u>		<u>4,302.4</u>

Note: There were no positive or negative foreign currency swaps outstanding at 31 December 1991. If, for example, there were positive swaps outstanding, their impact would have been reflected in a higher level of Official External Reserves and a correspondingly smaller level of Sale and Repurchase Agreements.

The description given above may be regarded as no more than an instantaneous snapshot of the financial markets. To more fully appreciate how the markets function and the nature of the Central Bank's transactions and interface with them, it may be helpful to consider in more detail the day-to-day market activities that are of relevance to the implementation of monetary policy.

8. DUBLIN MONEY MARKET: DAILY OPERATIONS

The banks, and the other credit institutions - some 25 to 30 in total - are involved or becoming more involved in lending and borrowing Irish pounds between themselves. This is mainly done by placing funds with one another for relatively short periods of time. Placements can vary from overnight to over a year ahead but are mostly for one month or shorter. Ultimately it is bank balances at the Central Bank that are being temporarily exchanged between the banks. Otherwise these balances would be surplus to some banks' requirements while other banks would have higher overnight borrowings from the Central Bank. For this and other reasons, the Central Bank is closely associated with the daily operations of the banks in the Dublin money market.

Each morning, at around 8.15 a.m., the Central Bank conveys a qualitative operational signal to the banks' money market desks and to the money brokers. It gives an indication

of the expected overnight position of the banks *vis-à-vis* the Central Bank at the close of business that evening. The position from the perspective of the Central Bank may be described as expected to be a small, medium or large shortage, to be virtually in balance or to be in surplus. Each bank is facilitated by this in forming its own view about the level of interest rates during the current day compared with the previous day. It also gives continuity to the interface between the participants in the Dublin interbank market and the Central Bank from one day to the next, thereby providing a reasonably confident background against which business in the interbank market is conducted.

At the start of the day, each bank has its own estimates and views about whether or not it will be likely to reduce, increase or experience little change in its own position at the Central Bank that day. Banks take into account the expected net settlement arising from their customers' foreign payments and receipts and also their transactions with the public sector. Each bank is also aware of its own maturing borrowings or deposits that day at the Central Bank. They are also aware of whether their domestic cheque clearings, including special presentations against other banks, will increase or decrease their overnight position at the Central Bank. Each bank also has a view of the expected net change that day in its interbank money market and certificates of deposit positions. Certain banks also have projections of their lodgements or withdrawals of currency notes during the day from the Central Bank.

On the 20th working day of each month, the banks also take into consideration the change in their required primary liquidity deposits at the Central Bank. The magnitude of this would have been known since the last working day of the previous month, the date to which the monthly statistical return by banks to the Central Bank relates. The three-week lag in the effective date for the changes in primary liquidity, which was introduced in April 1981, is designed to give the banks ample opportunity to plan for the accumulation of the additional primary liquidity deposits at the Central Bank, assuming the banks' Irish pound denominated current and deposit accounts have increased.

The sentiment associated with the previous day's money market activities, including the rate or rates of interest at which term deposits and repos were effected the previous afternoon by the Central Bank, are incorporated each morning into the market's expectations about interest rates. Moreover, overnight developments in interest rates abroad and in the unofficial Dublin market since the official close of business at 4 p.m. the previous day, are also embodied in the interest rates quoted each morning by individual banks.

As the day progresses the implications of the continuous dealing during the day in the interbank market, the certificates of deposit market and in the forward rate agreement market, together with the latest changes in money market interest rates abroad, are

immediately reflected in the Dublin interbank interest rates. Furthermore, the rates at which the Central Bank's swaps are conducted, including those on the bilateral repos and term deposits that it may conduct during the day for settlement that evening, are also reflected immediately in the interbank interest rates. Normally, the STF Rate and the rate on overnight balances at the Central Bank to be applied at the close of business will have been announced to the market at 10.45 a.m.

Foreign currency transactions against Irish pounds give rise to the most important set of financial flows in a very open economy. Thus, conversions of Irish pounds into foreign currencies or vice-versa are critical influences on the day-to-day changes in the banks' open foreign currency positions and also in their short-term position *vis-à-vis* the Central Bank. Apart from the normal two-day lagged impact of external transactions on the banks, the Central Bank is concerned, in the first instance, with their immediate implications for the movements of the Irish pound exchange rate within the ERM band. It is also concerned with their effects on the market making banks operating in the Dublin foreign exchange market, with the implications of the expected change in each bank's holdings of foreign currencies *vis-à-vis* Irish pounds (or Irish pounds *vis-à-vis* foreign currencies), and with their immediate effect on the foreign exchange and on the money market sentiments.

For these reasons, the Central Bank maintains close contact throughout the day with the foreign exchange desks of the banks. These, and related issues, will be reviewed later when considering the operation of the Dublin foreign exchange market. However, foreign exchange swaps are considered here in the context of the Dublin interbank money market. This is because the Central Bank conducts them primarily for providing or withdrawing Irish pound balances from the banks.

9. MONEY MARKET INSTRUMENTS

Shortly after the Central Bank gives an indication in the morning to the Dublin money market about the expected overnight position of the banks that evening, it again assesses the latest relevant interest-rate and exchange-rate quotations in the money and foreign exchange markets. It will also take note of the latest interest rates, yields and levels of activity in the interbank foreign currency swap market, the certificates of deposit market, the forward rate agreement market, the Government bond market and on the Irish Futures and Options Exchange (IFOX). Sometimes, developments in the swap, forward and futures markets may anticipate those in the cash or spot market. The Central Bank then conducts, between 8.30 a.m. and 9.00 a.m., the positive swaps (provides liquidity) or negative swaps (withdraws liquidity) that it has already planned for the day.

In doing this, the Central Bank initially contacts a number of banks directly seeking quotations for both positive and negative swaps. The total amount that is entered into and their maturity profile will be determined by the Central Bank. In responding, the banks, given their recent market experiences, will have a feeling for whether the Central Bank will be providing or withdrawing Irish pounds to or from the market. The maturities of the foreign currency swap contracts, which are for same-day settlement, will vary from overnight up to a week and, occasionally, longer maturities may be involved. Apart from the general or auction-type approach to the market in the morning the Central Bank, in rather exceptional circumstances, may contact a bank or banks in the afternoon to conduct bilateral swaps for next-day settlement.

Normally, the Central Bank would request swap quotations for the Irish pound against sterling. This is because of the liquidity, range of facilities and convenience of the sterling financial markets to banks located in Dublin for borrowing or placing sterling. On occasions, swaps may be conducted against the US dollar. Having quoted, a bank is obliged - in accordance with normal market convention - to do business if the Central Bank is willing to accept its quotation taking account, among other things, of the amount and maturity. Thus, it is only the banks whose quotations are accepted that have direct confirmation of the rates of interest at which the Central Bank conducted the swaps. Nevertheless the rest of the banks will not be much out of touch with the market conditions because they would also have been involved in providing quotations to the Central Bank.

The specific prices of the swaps entered into by the Central Bank are instantaneously integrated into the interbank market as the banks continue to conduct foreign currency swaps between one another. In any event, the Central Bank's swaps are allocated between the banks primarily by reference to their attractiveness from a market viewpoint to the Central Bank. The extent to which a bank is already involved in swaps, the Central Bank's views about the distribution of liquidity between the banks and its views about the influence of dominant players in the market, may also have a bearing on the allocation of swaps between the banks.

The Central Bank's swap transactions would have a neutral effect on the banks' short-term position *vis-à-vis* the Central Bank if they were replacing an equal amount of maturing swaps and repos. Banks would be adding to or reducing their short-term position if the value of the swaps being entered into were larger or smaller than the maturing swaps plus repos being replaced. Swaps themselves do not directly influence money market rates because they are conducted at market rates quoted by banks following the qualitative operational signal conveyed earlier by the Central Bank to the market. Nevertheless, the swaps do have an indirect influence on interest rates as the situation would be different if the swaps were never conducted.

Swaps are undertaken with the overall intention of encouraging the banks to increase, reduce or maintain unchanged the aggregate magnitude of their overnight positions at the Central Bank at the close of business that evening. In conducting the swaps it is hoped to elicit a particular market response. Consequently, swaps, like any other instrument that is used for influencing bank liquidity, indirectly influence interest rates through the changes they bring about in the aggregate amount of support extended to the banks under the Short-Term Facility. Apart from this indirect effect on interest rates, swaps and, indeed, any other forms of intervention in the markets by the Central Bank also lower or increase interest rates compared with the levels that would prevail otherwise.

Repos and term deposits are relied upon to a much greater extent than swaps for providing or withdrawing liquidity. Normally the Central Bank does not conduct repos, which are for settlement next day, until between 3.00 p.m. and 3.30 p.m. From day to day, whether or not the Central Bank conducts repos would depend on the expected change in the banks' short-term position the next day and on the maturity profile of outstanding repos. If the required magnitude of the Central Bank's support to the market was relatively small and concentrated into one day in the week, the Central Bank might only conduct repos once a week. Where the Central Bank was temporarily extending a sizeable but variable amount of daily support, it might be conducting repos from morning onwards for next-day settlement. By way of contrast, there may also be reasonably long periods during which the Central Bank may be relying on the other instruments instead of repos.

To effect repos, the Central Bank indicates over the Reuter screen to all banks that it wishes to conduct repos, specifying the terms to maturity but not the quantity. Banks respond to the invitation by quoting the rate of interest at which they are prepared to enter into repos. In allocating them, the Central Bank would take account of the competitiveness of the interest rates quoted, the amount already borrowed by a bank from the Central Bank and the Central Bank's views about the distribution of liquidity across the banks. As with swaps, it is only the banks with whom the repos are conducted that have a direct appreciation of their rates of interest but these rates are reflected very quickly throughout the Dublin interbank market. Furthermore, if considered appropriate the Central Bank may conduct bilateral repos at market rates, normally for same-day settlement.

From time to time, the Central Bank may wish to accept term deposits from banks for next-day settlement. The terms to maturity, but not the amount, would be indicated by the Central Bank. Such transactions also tend to be conducted in the afternoon. The banks are given the opportunity to quote rates of interest for term deposits in substitution for what otherwise would be overnight balances with the Central Bank. The Central Bank enters into term deposits, including on occasions overnight deposits, if it feels that there would be

temporary excess liquidity in the market that it wishes to withdraw by remunerating it at a rate above that which it is paying on banks' overnight balances.⁴

Apart from this general or auction approach to the market for term deposits, the Central Bank may discreetly contact - at any time during the day, but usually before 9.00 a.m. - a number of individual banks with exceptionally large accruing overnight balances. It would invite them to place a specified amount for a given period of time on deposit for settlement that evening. The rate of interest would be above that on overnight balances at the Central Bank but it may not fully accord with the going market rates for term deposits. These bilateral interventions for same-day settlement in the money market, whether repos or term deposits, are designed to deal with very large unanticipated liquidity developments and, in exceptional circumstances, to convey signals to the market about what might be a more appropriate level of interest rates.

Secured advances are only extended when a bank's Short Term Facility quota is fully used and its operating or settlement account with the Central Bank is about to become overdrawn. This rarely occurs. The rate charged for this accommodation is the highest overnight rate dealt on the market that day. A secured advance, because of its very nature, is for same day, or to be specific, same evening settlement and it must be secured by a pledge of bonds equal to at least 110 per cent. of the magnitude of the secured advance.

Throughout the day, the Central Bank keeps in almost continuous contact with the banks and moneybrokers about the ongoing changes in the money market interest rates being quoted. Changes in the rates of interest or yields in the interbank foreign currency swap market, on Irish pound certificates of deposit, forward rate agreements, IFOX money market and bond products, Exchequer Bills, Exchequer Notes and Government Bonds are also kept under review during the day. The Central Bank also gets a frequent indication in respect of the money market products of the amount of funds being lent or borrowed between the banks themselves at the various maturities and rates of interest. It also keeps in touch with the level of activity in Exchequer Notes, Exchequer Bills and Government Bonds.

If, contrary to what was expected, interest rates began to change rapidly during the day by what the Central Bank regarded as an inappropriate magnitude or in an inappropriate direction, it might give the market a revised indication of the change since morning in the expected overnight position of the banks that evening. Instead of this, or in addition to it, the Central Bank might, in exceptional circumstances, contact a number of banks bilaterally. The Central Bank might enter into what it regarded as an appropriate magnitude of repos or term deposits with the banks at rates of interest that may not fully accord with those being quoted in the market.

Such steps would be taken rather infrequently and, in doing so, the Central Bank would be extending a signal about interest rates. In conducting bilateral interventions with banks, the Central Bank might be confirming that the expected overnight position of the banks was becoming either much larger or much smaller than anticipated. By intervening, the Central Bank might be taking steps to accommodate the unanticipated change in the overnight position without a change in interest rates. The Central Bank might also be trying to have the unexpected change offset by inducing appropriate market transactions through revised expectations about interest rates. Apart from large unanticipated changes in the expected overnight position, the Central Bank might also intervene if market sentiments about interest rates were obviously out of line with some significant development or facts about which the market was not or could not yet be aware. Following this account of the usage of the money market instruments, it may be helpful to summarise the interconnections between the Central Bank and the interbank money market in the following manner.

Chart IV: Central Bank and the Interbank Money Market

Relationships with Market	Facilities and Instruments
Central Bank's Discretionary Position (normally transacted at market rates but at the Central Bank's discretion).	Sale and Repurchase Agreements. Positive or Negative Foreign Currency Swaps. Deposits, mainly term, from banks.
Banks' Overnight Position (transacted at banks' initiative but at rates announced in advance by Central Bank).	Short Term Facility Drawings. Overnight Balances at Central Bank.
Banks' Short-Term Position (Combination of Central Bank's Discretionary Position and Banks' Overnight Position).	Total of the banks' short-term borrowings (net) from or lendings (net) to the Central Bank whether at the discretion of the Central Bank or that of the banks.

10. DAILY INTERBANK SETTLEMENT

It would seem appropriate to refer here to the Daily Interbank Settlement (DIS) at the Central Bank which commenced in December 1980. All of the transactions between the Central Bank and a bank are reflected in its operating account maintained with the Central Bank. This account cannot become overdrawn with the result that all of the transactions on it during the day, including a secured advance by the Central Bank, add to zero.

In addition to the transactions between the banks and the Central Bank itself, there are domestic transactions between the banks themselves that do not involve changes, when all the banks are considered together, in their short-term position *vis-à-vis* the Central Bank.

Such transactions redistribute rather than change the total of the short-term positions of the banks *vis-à-vis* the Central Bank. Nevertheless, these transactions are also put through the DIS. They include the final interbank transactions arising from the ordinary clearings of domestic cheques and other payment instruments between banks, the special afternoon presentations of large-value cheques and bankers' drafts, and those transactions associated with the daily telephonically - remitted balances on behalf of corporate customers. Moreover, the settlements arising from the purchase and sale of Government Bonds are effected through the Gilt Settlement Office (GSO) and finally put through the DIS. Furthermore, the payments and receipts between banks arising from the effect of the day's business on the Dublin interbank market and similar interbank activities are also passed through the DIS.

The settlements arising from the domestic cheque clearings and the interbank market activities do not require specific support from the Central Bank. In principle, these settlements are interbank transfers that the Central Bank effects on behalf of the banks through the DIS after the official close of the markets at 4.00 p.m. However, it can take up to 5.30 p.m. before all of the transactions arising from the day's business are agreed and confirmed and the final transactions, including the drawings on the Short Term Facility or placings of overnight balances with the Central Bank, are finally given effect through the DIS.

11. PRIMARY LIQUIDITY RATIO: TEMPORARY CHANGES

The Central Bank uses one other intervention instrument, not yet discussed, in connection with the pre-Christmas demand for currency. It provides accommodation to the banks by way of a temporary reduction in the primary liquidity ratio that normally is reversed in the opening weeks of the New Year. The effect of this is to reduce the banks' primary liquidity deposits at the Central Bank for a period of a few weeks before and after Christmas. Primary liquidity balances are released to pay for the extra currency notes put into circulation before Christmas. If the funds were not made available in this manner, the Central Bank would be conducting a larger amount of repos to supply the settlement funds to pay for the currency notes supplied by the Central Bank.

After Christmas, as the note circulation falls, the Central Bank automatically reduces the amount of repos outstanding to an exceptionally low level. However, they are revived as soon as the primary ratio is raised to its normal level. In other words, with the lower primary liquidity ratio, the repos do not increase temporarily before Christmas and are smaller than they would be otherwise for a short period afterwards.

A limitation to using movements in the level of the primary liquidity ratio is that it is an inflexible instrument for the purpose of sensitively managing the interbank market from day

to day. Rather its purpose is to accommodate the seasonal demand for currency notes in the month of December. It avoids a temporary increase in the balance sheet of the Central Bank and the banks when the private sector temporarily increases its holdings of currency, partly by withdrawing deposits and partly by increasing borrowings from the banks.

In other words, what happens is that the private sector temporarily substitutes or acquires currency in exchange for a combination of a reduction in bank deposits and an increase in indebtedness to the banks. The Central Bank accommodates this by temporarily reducing primary liquidity deposits as its currency notes in circulation increase. However, with the decline, in two steps, of two percentage points each in the level of the primary liquidity ratio, from 10 per cent in 1990 to 6 per cent in January 1992, the scope for lowering it temporarily to accommodate seasonal currency demand may be diminishing.

12. INTEREST RATES AND SHORT TERM FACILITY

The variations in the sum of repos, term deposits and swaps, that is, the Central Bank's discretionary position together with that in the banks' overnight position *vis-à-vis* the Central Bank, are significant short-term influences on the Dublin interbank interest rates that emanate from the Central Bank. Changes in the short-term position of the banks *vis-à-vis* the Central Bank are brought about in this way, and impinge on the usage of the Short Term Facility, which may vary from being unused to having a reasonable degree of utilisation.

Drawings on the Short Term Facility at the close of business, if required, bridge the ultimate gap arising from the day's business between the private sector's net demand for and the Central Bank's net supply of funds (other than in the form of drawings on the Short-Term Facility). If the Short Term Facility is unutilised, the private sector's net demand and Central Bank's net supply are matched. Excess overnight balances arise if Central Bank supply exceeds private sector demand.

Short-term interest rates in the Dublin interbank money market would tend to rise if the banks' utilisations of the Short Term Facility were expected to increase substantially, especially at a time when the STF Rate was above comparable market rates by a significant margin. As the banks drew more heavily on the Short Term Facility, they would also be increasing their reliance on the interbank market. In these circumstances, market rates would rise and could equal and indeed exceed the STF Rate. In these conditions, a bank that did not need to use its own Short Term Facility accommodation would draw down its quota and place the funds overnight in the interbank market. During turbulent conditions in the foreign exchange markets, interest rates would rise to levels considerably in excess of the STF Rate. The higher market rates would strengthen the exchange rate and lead to

inflows that would provide the liquidity to relieve the strain on the Short Term Facility and restore the external reserves to an adequate level.

The opposite would tend to happen if the banks' utilisations of the Short Term Facility were expected to decline from a high level towards zero or if they were expected to find themselves with surplus overnight balances. As more funds became available for reducing Short-Term Facility drawings, and, in particular, for placing on the Dublin interbank market, interest rates would be falling away from the STF Rate. They could fall towards the rate on the banks' overnight balances at the Central Bank, which is normally three and one quarter percentage points below the STF Rate. It is set at this level to minimise the extent to which the Central Bank is drawn into the money market and to give the market an incentive to stretch itself to the maximum.

However, there would be little scope for a reduction of this magnitude in interest rates as it would lead to a decline in the exchange rate and outflows of funds externally as Irish interest rates fell substantially relative to those abroad. Normally, it is the variations between the one-month interbank rates and comparable rates abroad that are relied upon when focusing on the responses of flows of funds across the foreign exchange market to changes in the level of Dublin money market interest rates compared with money market rates abroad.

In most circumstances, however, the Central Bank's STF Rate does not directly influence money-market rates when the banks' drawings on the Short Term Facility are negligible or nil, though it does have a signal effect. Similarly, the rate on the banks' overnight balances at the Central Bank would have little impact on market rates if the amounts being placed overnight were negligible or nil. If the market were more or less in balance, and if, at the same time, the Central Bank's discretionary money-market actions (repos, term deposits and swaps) were being conducted at market rates, the STF Rate or the rate on overnight balances would have little direct influence. Similarly, during temporarily disturbed conditions in the international foreign exchange markets it would be the rates applied to the Central Bank's discretionary money market actions that would have influence rather than the STF Rate.

The Central Bank commences its money market operations each day with a forecast of the change that may occur that day in the banks' drawings under the Short Term Facility or in their overnight balances at the Central Bank. It also has a view, though less precise, at the start of each day for the overnight position of the banks *vis-à-vis* the Central Bank at the close of business the next day. The Central Bank's provision of liquidity over the day through repos and positive swaps or absorption of it through term deposits and negative swaps is conducted with these views or forecasts to the fore. Its activities in the money

market during the day are also conducted with a number of operating targets in mind which may be described as follows:

Chart V: Monetary Policy: Targets

Operating Targets

- (i) Daily movements of the exchange rate in the ERM band.
- (ii) Daily movements in the official external reserves.
- (iii) Daily movements in the interbank rates especially the one month rate against comparable rates abroad.

The implications of this combination of money market and foreign exchange market-operating targets will become clearer in the light of the discussion below on the foreign exchange market. Before turning to the foreign exchange market it is worth recalling that one of the implications of the emphasis on markets since 1979 is that the traditional official rediscount rate has not been playing a significant role since the break in the link with sterling. Since 4th June 1979, when the Short Term Facility was introduced, the STF Rate has played, with vigour on occasions, the role of the official rediscount rate which lost its operational significance in the early 1980s.

13. DUBLIN FOREIGN EXCHANGE MARKET: DAILY OPERATIONS

The foreign exchange market is a wholesale market between banks where currencies are bought and sold for settlement two days later. A number of different types of foreign exchange contracts give rise to the transactions in the foreign exchange market, the most widely known being the spot purchases and sales of currencies. Spot or cash market foreign exchange transactions also arise when forward foreign exchange transactions are entered into by banks. The call or put foreign exchange option contracts written by banks also give rise to foreign currency hedging transactions by banks in the spot or cash market. Purchases of call and put foreign exchange options by banks do not have a significant counterpart in the cash markets. Finally, foreign currency swap transactions involve temporary spot exchanges of currencies for a specific period of time at the end of which they are reversed.

Apart from the different contracts mentioned above, there are three interrelated categories of foreign exchange business conducted on the Dublin foreign exchange market. First, there is the conversion of Irish pounds into foreign currencies and vice-versa on behalf of banks and their customers. Spot and swap interbank purchases and sales facilitate the transfer of

surplus foreign exchange arising in some banks to others who happen to be experiencing a shortage. Second, non-residents, especially banks abroad, are generating a growing level of foreign currency transactions *vis-à-vis* the Irish pound. In addition to these two categories of transactions, a substantial amount of foreign exchange business not involving the Irish pound or Irish residents is conducted with banks and companies located abroad. This third category of business is about ten times larger than that involving the Irish pound.

The third category is not of direct concern to the Central Bank in its exchange rate policy operations in the foreign exchange market. However, the Central Bank has a prudential concern about the total open foreign exchange position of a bank which requires the dedication to it of a specific proportion of the bank's capital. The capital requirement for prudential purposes relates to all of the branches of a bank whose head office is incorporated in Ireland and also to its subsidiaries, whether they are located at home or abroad. It encompasses all of the foreign currency assets and liabilities, whether reflected on the balance sheet in spot positions, or off balance sheet in forwards, futures, swaps and options contracts.

14. THE EXCHANGE RATE MECHANISM

The net effect of the different types of foreign exchange transactions impacts daily on the supply or demand for Irish pounds *vis-à-vis* foreign currencies, and influences the exchange rate within the ERM band during the day. According to the EMS rules, the Central Bank is obliged to enter the foreign exchange market and deal at the margin if the Irish pound exchange rate is 2.25 per cent⁵ away in either direction from its bilateral central rate against another currency participating in the narrow ERM band. These compulsory interventions, which do not occur very often, are designed to prevent the exchange rate from depreciating or appreciating further and keep it within the permitted margins of fluctuation in the ERM. The interventions, i.e., selling one currency and purchasing another, tend to move both currencies away from their respective upper and lower intervention limits. Compulsory interventions are financed with no addition to overall market liquidity by the temporary extension of credit between EC Central Banks participating in the ERM rather than by an immediate decline in the external reserves of the Central Bank acquiring its own currency.

Interventions may also be undertaken when currencies are not at their compulsory intervention limits. Such discretionary interventions, known as intra-marginal or between the margins interventions to distinguish them from interventions at the margin, may be undertaken in US dollars subject to the constraints of the international understandings being applied. However, if a Community currency is used, the prior agreement of the Central Bank whose currency is involved is required. In addition to interventions, it is also expected that other measures will be employed to influence the exchange rate. Since September 1987,

there has been agreement between all EC Central Banks to use all available instruments, that is, changes in interest rates; exchange rate movements within the ERM band; and interventions financed by drawing on the Central Bank's official external reserves.

The Central Bank contacts the foreign exchange market shortly after it opens at 8.00 a.m. and reviews developments in the international foreign exchange markets since the close of business the previous evening. It remains in close contact throughout the day with the banks' foreign exchange desks up to the official close of the foreign exchange market at 4 p.m. After that the Central Bank does not defend the ERM margins for the Irish pound exchange rate until the official market opens the next morning at 8.00 a.m. Nevertheless, the Central Bank continues to keep in touch with the unofficial market until around 5.30 p.m. Irish time or 12.30 p.m. New York time.

The purpose of keeping in contact with the market over the day is to observe the changes in each bank's net holdings or net borrowings of foreign currencies against Irish pounds and also to monitor the position of the Irish pound *vis-à-vis* the other currencies. In addition, the banks must also inform the Central Bank of all foreign exchange transactions involving the Irish pound of £1 million or over in magnitude.

A tight overnight limit on the magnitude of each bank's net holdings of foreign currencies or net liabilities in foreign currencies against the Irish pound was put in place by the Central Bank in early 1979 under the Exchange Control legislation. This limit, which applied to the aggregate activities of the branches of a bank in the Republic, was referred to as a bank's net open spot position in Irish pounds. Consequently, if towards the close of business on the foreign exchange market, a bank's net holdings of foreign currencies exceeded its overnight limit, the excess would be sold to the Central Bank, normally at the market rate for settlement two days later. Even though the Central Bank has phased out its overnight limit the operation of the foreign exchange market has not changed fundamentally as each bank applies its own prudential overnight limit.

Alternatively, banks might sell their excess foreign exchange in the market especially towards the end of the day's trading. This could lead to an appreciation of the Irish pound exchange rate that might not be regarded as appropriate. The Central Bank, however, might take the initiative to request a bank or selected number of banks to quote their latest buying or selling exchange rates for the Irish pound and then acquire their excess holdings of foreign exchange. It might do this in exceptional circumstances if it held the view that a sizeable appreciation of the Irish pound from its existing level might not be appropriate in the particular circumstances prevailing.

Similarly, if banks' net borrowings of foreign currency towards the end of the day were in excess of their own prudential overnight limits, the excess could be reduced by the Central Bank selling foreign currency to the banks at the rates of exchange quoted by them. Like other foreign exchange deals, these transactions would be settled in two days time. The alternative would be for the bank or banks to sell Irish pounds in the market before the close of business and let the Irish pound exchange rate depreciate in the ERM band. However, in exceptional circumstances the Central Bank might intervene in the foreign exchange market if it considered it appropriate to see little change towards the end of the day in the exchange rate from its existing level. Normally, the banks tend to avoid having open positions towards the end of the day that are much in excess of their overnight prudential limits.

The Central Bank might wish to see the exchange rate appreciate or depreciate in the ERM band at any time during the day from the level prevailing in the market. It would encourage the accumulation of surpluses or shortages of foreign exchange to achieve this objective. This would be achieved by refraining from intervening during the day to withdraw accruing foreign exchange or by not providing it to replenish the banks' depleted holdings. By allowing the banks' excess holdings of foreign currency to increase, the disposal of the excess would tend to appreciate the Irish pound exchange rate in the foreign exchange market as desired. Similarly, the elimination of a shortage of foreign exchange would tend to depreciate the Irish pound exchange rate.

There has never been a limit during the day on a bank's net open spot position in Irish pounds. In other words, a bank is free to go long, that is, build up a holding of foreign currencies against Irish pound liabilities, or go short, that is, borrow foreign currencies to acquire Irish pound assets. Nevertheless, over the day, the Central Bank reserves the right to take initiatives to sell or buy foreign exchange. It would do this with a view to influencing the exchange rate for the Irish pound if considered appropriate. In this connection, downward or upward movements of the exchange rate to the ERM limits against another currency participating in the ERM discourage selling or encourage buying of Irish pounds.

On the other hand, by deliberately refraining from intervening, as the banks go long or short *vis-à-vis* the Irish pound, the Central Bank gives the market the opportunity to determine the position of the exchange rate in the ERM band. This is the normal stance that is adopted by the Central Bank. In normal circumstances, the sensitive movements in the exchange rate in response to demand and supply conditions in the foreign exchange market may be reflected also in the change in the magnitude of the banks' open positions against the Irish pound.

If, as a result of the posture being adopted by the Central Bank, banks are acquiring what they regard as excessively large holdings of foreign currencies against the Irish pound, they respond by making it more costly in terms of foreign exchange for their customers to purchase Irish pounds. If the banks are building up what they regard as excessively large liabilities in foreign currencies *vis-à-vis* the Irish pound, they respond by making it cheaper in terms of foreign exchange for their customers to purchase Irish pounds. Such variations in exchange rates encourage their customers, including banks abroad, to vary the demand for and supply of Irish pounds against other currencies in the foreign exchange market. This helps them to avoid having to dispose later of relatively large surpluses or eliminate excessive shortages of foreign exchange at what might well become unfavourable rates of exchange to the banks themselves.

When the separate Irish pound foreign exchange market emerged in Dublin in the Spring of 1979, the Central Bank initially administered the exchange rate for the Irish pound within the ERM band. It did this by operating a gradually widening mini-band within the ERM band until the full 2.25 per cent ERM band was reached on 13 June 1980. The Central Bank also administered the forward market for the Irish pound, a practice which was phased out over the period August to November 1980.

15. IMPLICATIONS OF EXCHANGE CONTROLS - 1979 to 1992

During the 1980s, the Irish pound foreign exchange market continued to be partly insulated by exchange controls from the full rigours of the market. The exchange controls that were designed to limit longer-term capital movements had little day-to-day influence over the movement of funds through the foreign exchange market. However, those exchange controls that focused on prohibiting day-to-day movements of funds into or out of the Irish pound were reasonably effective, as they limited in particular the capacity of the banks and other financial institutions to do so.

No bank was permitted to make overnight and other short-term Irish pound loans to banks abroad or to accept large overnight or short-term Irish pound deposits from them. Each licensed bank operating in the Republic was also limited in the extent to which it could maintain overnight an open spot foreign currency position against the Irish pound.

A limit was also placed on the total amount of spot foreign currency a bank could hold against its forward commitments to deliver foreign exchange. Forward foreign exchange delivery commitments that are matched with spot holdings of foreign currency do not create an open currency position for a bank, when the on and off balance sheet items are considered together. However, they result in a withdrawal of external reserves from the Central Bank and put upward pressure on interest rates. It was for these reasons that spot

against forward limits were introduced at the time of the break in the link with sterling. In addition, it became illegal for the banks' domestic customers to hold unauthorised foreign currency balances either abroad or with banks locally. Furthermore, the capital transactions which could be covered forward were closely restricted. The spot against forward limits were relaxed in Autumn 1990 and subsequently dropped in February 1992.

These controls on short-term capital movements limited the extent to which there were conversions into or out of the Irish pound and reduced the scope for speculation against it. Similarly, the exchange controls helped the Central Bank, particularly in the early years after the break in the sterling link, to manage the interventions in the foreign exchange market and influence the movements of the Irish pound exchange rate in the ERM band. They also made it easier to manage bank liquidity and reduced the scope for erratic movements in interest rates in the Dublin interbank money market.

16. ANTICIPATING THE SINGLE EUROPEAN MARKET

Virtually all of the exchange controls were phased out gradually between the beginning of 1988 and Spring 1992, with the few that remain to disappear by the end of 1992⁶ though substitutes for temporarily limiting very short-term capital movements cannot be ruled out. This has provided growing scope for larger inflows and outflows through the foreign exchange market. Since the late 1980s, a wider but more concentrated range of non-residents hold Irish pounds while residents are also diversifying their portfolios by acquiring additional foreign assets. With the abolition of the controls on short-term capital movements, greater scope is being provided for more active market-making in the Dublin foreign exchange market and for more sensitive responses of the exchange rate in the ERM band to market developments. Closer synchronisation of changes in Dublin money market interest rates with comparable rates in EC member countries is also being experienced.

Since March 1992, the banks are not expected to apply a specific legal limit on their overnight open currency position against the Irish pound at their domestic branches. Nevertheless, it is expected by the Central Bank that the banks themselves are imposing prudential limits on open currency positions and that large open positions are not being carried overnight by banks. A bank is free to vary and carry over time a modest spot open currency position *vis-à-vis* the Irish pound and anticipate movements in the Irish pound exchange rate within the ERM band.

With the removal of virtually all of the remaining exchange controls in the early 1990s, the Central Bank may go through periods in which it is purchasing or selling foreign exchange to the banks with greater frequency than in the past in response to movements of the Irish pound in the ERM band. Such periods may be associated with turbulence internationally in

foreign exchange markets that also impinges on the Irish pound. However, for most of the time the Central Bank is not intervening in the foreign exchange market. Nowadays supply and demand in the market, together with changes in the banks' open spot positions against the Irish pound, result in an exchange rate that normally remains reasonably stable against the other currencies in the ERM band. Moreover, in the absence of an overnight legal limit on the spot position against the Irish pound, the Central Bank is not required to intervene in response to banks' desires to bring their open positions against the Irish pound into line with their own prudential overnight limits.

Central Bank interventions in the foreign exchange market, when they now occur, are less predictable with regard to timing than when the exchange controls were in place. Moreover, they may not have as predictable an effect because some interventions by the Central Bank may be reflected in the banks' holdings of foreign exchange rather than being placed in or taken out of the market. It is also recognised that changes in the banks' holdings of foreign currency may have the effect of avoiding a movement in the exchange rate that would have occurred if rigid overnight open spot position limits had been in place. Nowadays, in the absence of an overnight legal limit on a bank's open spot position against the Irish pound, interventions by the Central Bank are normally conducted with a view to arresting erratic movements in the Irish pound exchange rate. In exceptional circumstances, interventions might be conducted to signal some small movement in the exchange rate that might be regarded as appropriate or indeed to defend the exchange rate at its existing position in the ERM band.

Before concluding this discussion about the Irish pound in the foreign exchange market it should be noted that a strong exchange rate in the ERM depends on the appropriateness of the economic policies pursued to support this objective. It also depends on the successful implementation of these policies. Changes in interest rates, movements of the exchange rate in the ERM and interventions in the foreign exchange market have the freedom to play their full role in successfully implementing exchange rate and monetary policy. The interconnections between the Central Bank, the exchange rate, the foreign exchange market and the external reserves discussed above are summarised in Chart VI, p. 31.

17. BOND MARKET: EMERGING SCOPE

Outright purchases or sales by the Central Bank of Government Securities in the Dublin bond market have not been used for the purposes of increasing or decreasing the banks' short-term position *vis-à-vis* the Central Bank. Virtually all of the bonds acquired by the Central Bank were the result of providing accommodation either directly or indirectly to finance residual Exchequer requirements in exceptionally difficult circumstances between

1966 and 1980. The Central Bank did not acquire bonds directly for the purposes of managing bank liquidity or for the specific purpose of making a market in bonds.

The Central Bank acquired most of its holdings of Government Securities at the following times - in 1966 (£25 million), on a few occasions during the 1970s (totalling £97 million) when it provided some exceptional residual finance to the Exchequer, and again in Spring 1980 (£244 million) when the clearing banks' secondary liquidity ratio was reduced. On that occasion, rather than having the clearing banks selling bonds to the strained Exchequer, the Central Bank acquired them and the proceeds were applied to reduce some of the clearing banks' indebtedness to the Central Bank. The Central Bank's holdings of Government Securities did not increase in the 1980s, but an absolute decline of £120 million was recorded in 1991 with further reductions in prospect.

The development of the bond market in the 1980s, especially the secondary market, resulted in the Central Bank becoming less involved in supporting the prices of bonds to facilitate portfolio adjustment by the private sector. With the rapid growth in Irish pound-denominated Government paper outstanding in the 1980s, the proportion held by the Central Bank has fallen from 8.5 per cent. at the end of 1980 to somewhat over 1.5 per cent at the end of 1991. Following the establishment of the NTMA in December 1990, the Central Bank is no longer involved in facilitating purchases and sales of either bonds, Exchequer Bills or Exchequer Notes.

The Central Bank gave priority in the 1980s to the need for flexible techniques and instruments for intervening in the foreign exchange and money markets. The development of what might be described as conventional outright open market purchases and sales was not a priority. It was necessary to concentrate on the foreign exchange and money markets in the 1980s and minimise the threats to monetary stability posed by the financing requirements of large budget deficits that existed before the late 1980s.

Outright purchases of bonds in the secondary market are more appropriate in a country where there is a target for the growth in the money supply that is backed to a substantial extent by gradual increases of a permanent nature in the Central Bank's holdings of domestic bonds. In a small open economy, it is additional official external reserves rather than bonds that are required over time by the Central Bank to directly underpin the exchange rate. However, this is not to say that there is no scope in a small open economy for limited Central Bank outright purchases and sales in the bond market.

It was appropriate for the Central Bank as it was gaining experience in the EMS to rely primarily on money market instruments for intervention purposes. Such instruments could be used discreetly as external reserves fell or rose temporarily. Outright market purchases

Chart VI: Central Bank and the Foreign Exchange Market

Irish Pound	- Independent monetary unit of the State and member of the Exchange Rate Mechanism (ERM) of the European Monetary System (EMS)
Foreign Exchange Market for Irish Pound	- A market between the banks where movements in the exchange rate are determined by supply and demand. The banks buy and sell Irish pounds in exchange for other currencies on behalf of their customers and themselves.
Scope for Movement in Exchange Rate of Irish Pound	- The margin of fluctuation permitted in the narrow ERM band is a maximum of + or - 2.25 per cent ⁺ from the bilateral central rate of the Irish pound against another currency in the narrow band.
Changes In Banks' Open Foreign Currency Positions	- Each bank's net holdings or net liabilities in foreign currencies against Irish pounds is continuously changing due to activities in the foreign exchange market.
Interventions by Central Bank	- Purchases or sales of foreign exchange conducted with banks: <div style="margin-left: 40px;">Compulsory - when the exchange rate for the Irish pound reaches its ERM margins.</div> <div style="margin-left: 40px;">Discretionary - when the exchange rate is between its ERM margins.</div>
Official External Reserves of Central Bank	- Increase with positive interventions Decrease with negative interventions

⁺ 15 per cent since August 1993.

or sales of bonds in a thin bond market that was being overfled with new issues would not have readily accommodated flexible interventions. It was easier to conduct the interventions in the interbank money market where they could be unwound relatively easily as the official external reserves reverted to what was regarded as an appropriate level.

There was another limitation to the purchasing and selling of Government Securities for managing the banks' short-term position *vis-à-vis* the Central Bank. It would have had the potential in a small developing bond market to run counter to public debt management policy

in the relatively small illiquid market that existed. Now that the public debt is exceptionally large and has a reasonable turnover in the secondary market, there would seem to be some scope for the conduct of outright purchases and sales of bonds in the bond market rather than relying primarily on repos directly *vis-à-vis* the banks. These would be conducted independently by the Central Bank for the purposes of temporarily providing or withdrawing bank liquidity. Such outright purchases and sales of bonds on a limited scale would be conducted at market rates and, on occasions, would reduce the extent to which it was necessary to rely on discretionary swaps, repos and term deposits in managing the banks' short-term position.

Following this review of the interactions between the money market, the foreign exchange market, the bond market and the Central Bank one can summarise the operations of the Central Bank as in Chart VII on the following page. It is by relying daily on the policy actions and instruments shown in Chart VII to influence the monetary policy operating targets highlighted on page 23 Chart V that the intermediate objectives and the ultimate goal of monetary policy identified on page 3 Chart I are realised.

18. THE CENTRAL BANK: PERSISTENT ANCHOR AND BUFFER

One can regard the official external reserves as the ultimate base or anchor of the banking system. Increases in the private sector's holdings of notes and coins and in the banks' primary liquidity deposits are accommodated by permanent additions to the official external reserves rather than short-term increases in the Central Bank's domestic assets. As the ultimate objective of monetary policy severely constrains the Central Bank from increasing its holdings of domestic bonds and lending to banks on a permanent basis, the growth over time in the private sector's claims on the Central Bank must lead to an increase in the official external reserves. In other words, since increases in the Central Bank's domestic assets are limited, its liabilities to the private sector can only continue to increase if its external assets also rise.

Over time, the Central Bank accumulates the official external assets through net receipts of foreign exchange from the private sector. In turn, the private sector is able to finance its increasing holdings of currency and the banks are able to accumulate primary liquidity deposits at the Central Bank. The external reserves must be maintained at an adequate level so that the exchange rate can be firmly anchored. A growing level of reserves is required over time. They must remain adequate to act as an effective buffer in meeting the growing magnitude of short-term imbalances between external receipts and payments, in supporting the exchange rate during turbulent times in the foreign exchange market and in allowing time for policy measures to become effective.

Chart VII: Monetary Policy - Reliance on Instruments

Policy Actions and Instruments used Daily by the Central Bank

- (i) Morning operational signal from Central Bank's Money Market Desk about the expected overnight position of the banks that evening *vis-à-vis* the Central Bank
- (ii) At the Margins and between the Margins interventions by Central Bank at market rates in Foreign Exchange market
- (iii) Bilateral between the Margins interventions in exceptional circumstances by Central Bank in Foreign Exchange market at exchange rates that may not fully accord with the market
- (iv) Discretionary Repos, Term Deposits and Foreign Currency Swaps by Central Bank in money market at market rates
- (v) Bilateral Repos and Term Deposits in exceptional circumstances by Central Bank at interest rates that may not fully accord with those in the money market
- (vi) Change in Short Term Facility Rate - the cost of secured overnight borrowing from the Central Bank and the key official rate used to confirm market developments and endorse policy

Apart from this increase over time in the external reserves, the Central Bank's domestic monetary operations act as a buffer between temporary changes in the official external reserves and the banks' domestic liquid assets. With a relatively small temporary fall in the external reserves, the Central Bank intervenes between the Dublin interbank market and the official external reserves. It temporarily replaces the liquidity lost through a contraction in the official external reserves with liquidity created domestically by the Central Bank itself. The level of interest rates remains much the same despite the temporary reduction in the official external reserves.

If the decline in the external reserves is leading the Central Bank into becoming a larger and larger buffer, policy actions, namely less discretionary Central Bank support and higher utilisation of the Short Term Facility, must be taken to arrest and reverse the decline. When the Central Bank is required to act suddenly as a major buffer due to turbulence in the foreign exchange market, interest rates in the money market and those associated with the Central Bank's discretionary support rise significantly without delay before being followed by a substantial increase in the STF Rate.

Normally, the magnitude of repos, positive swaps and drawings on the Short Term Facility can be regarded as giving a reasonably accurate indication of the extent to which the Central Bank is acting as a temporary buffer. At times, however, the Central Bank may be operating also as a buffer between the Exchequer's operations and the private sector. It could be providing or withdrawing liquidity following a sharp increase or decline in the Exchequer's balance at the Central Bank due to Exchequer receipts or payments *vis-à-vis* the private sector. On occasions, an allowance must be made for the temporary effects of the Exchequer's impact on the money market in judging the extent to which the Central Bank is acting as a buffer due to changes in the official external reserves.

To discourage further decreases in the external reserves and reconstitute them, the Central Bank may limit the accommodation it is extending in the form of repos and swaps with a view to increasing drawings under the Short Term Facility. This increases the marginal cost of accommodation from the Central Bank which becomes reflected in money market rates. The banks increase their Short Term Facility drawings and the money market rates tend to rise towards the STF rate. They could continue to rise and exceed this rate as the utilisation of STF accommodation rises towards full capacity.

The emergence of higher market rates should not be interpreted as an increase in interest rates caused by the Central Bank. Rather they rise because the Central Bank does not regard it as appropriate to continue with downward pressure on Irish interest rates. In any event, the role played by the Central Bank as a buffer is not sustainable because of its constraining implications for the banks. It only temporarily replaces the banks' Irish pound liquid assets by inducing them to undertake secured short-term borrowing abroad or from the Central Bank in anticipation of sustainable adjustment.

Irish interest rates would have risen initially on the occasion of the decline in the official external reserves if the Central Bank did not act as a temporary buffer. When they come back into line with underlying market developments, it would be normal to expect a reconstitution of the external reserves within a reasonable period of time and an elimination of the temporary buffer provided by the Central Bank. In these circumstances, Irish interest

rates would normally have risen to restore their customary differentials *vis-à-vis* interest rates abroad.

The extent to which the Central Bank, without putting upward pressure on interest rates, decides to continue providing the banks with Irish pounds to replace those being converted into other currencies (which would be reflected in a reduction in the official external reserves) depends on a wide range of factors. These vary in importance from one circumstance to another. They include the level and adequacy of the external reserves; the significant changes in monetary, exchange rate and fiscal policies in major industrial countries; the specific developments in interest rates and exchange rates abroad; the conditions in the domestic credit, money, bond and foreign exchange markets; the trends in the public finances, the balance of payments, bank credit, money supply, prices; unemployment; the general competitive state of the economy, and the appropriateness of the domestic economic policies being pursued.

All of these factors would be converging on the domestic money market and would be influencing the magnitude of the differences between the levels of Irish interest rates and those abroad. The external interest rates that are of greatest relevance nowadays to the implementation of monetary policy are those in Germany and in the other EC members whose interest rates follow closely those in Germany. However, interest rates in the UK and even those in the USA cannot be ignored. Such factors would be considered by the Central Bank in deciding on the extent to which it uses its discretion to continue providing temporary domestic liquidity to reduce the upward pressure on interest rates as official external reserves continue to decline. It is noteworthy that, in normal circumstances, the magnitude of the changes in the differentials between Irish interest rates and those abroad that would not rapidly lead to substantial changes in the exchange rate and in the level of the official external reserves is now very small.

In practice, it is the changes in the differentials between the domestic money market rates, especially the one-month rate, and comparable rates abroad that are significant in promoting stability in the exchange rate and maintaining adequate external reserves. Nowadays, changes in the STF Rate may follow relatively small changes in the differences between Irish and external rates, especially in respect of those currencies that are members of the ERM band.

In normal circumstances there is little scope nowadays for the persistence of large or even medium-sized differences between the level of Irish interest rates and those in other ERM countries. Market rates move quickly in line with those in the other member countries even before being confirmed by a change in the STF Rate. This also reduces interventions by the Central Bank in the foreign exchange market. However, going on experience to date, when

there is downward pressure on the foreign exchange rate the excess of Irish interest rates over those abroad increases substantially, thereby increasing the attractiveness of the Irish pound in defence of the exchange rate.

Variations in the Central Bank's discretionary position *vis-à-vis* the banks and in the banks' overnight position *vis-à-vis* the Central Bank play an important part in the daily implementation of monetary policy. The day-to-day tone of the money market reflects the responses of the participants to supply and demand in the market, including the change in the Central Bank's discretionary money market activities, and to the expected change in the banks' overnight position *vis-à-vis* the Central Bank. The Central Bank's day-to-day discretionary money market activities and its daily influence on the banks' overnight position must be kept in tune with the markets, while at the same time promoting confidence and minimising instability in them. Otherwise, the ultimate objective of monetary policy, namely price stability, will not be realised over time.

Stable prices promote confidence throughout the economy, in the currency and in the stability of the financial system. It is by promoting price stability and reducing concerns about instability in financial markets and throughout the financial system that monetary policy plays its part over time in promoting growth and employment. Price stability will continue to be the ultimate goal of monetary policy in the 1990s which should foster competitiveness in the Single European Market and prepare the way for participation in Economic and Monetary Union. When that stage is reached fundamental changes in the manner in which monetary policy is operated and implemented will be required - a subject that would take us far beyond the scope of this Address.

Footnotes

1. When referring to the private sector's external transactions or its transactions with abroad one is referring to the net effect of both resident and non-resident transactions in foreign exchange against Irish pounds.
2. These are short-term instruments issued by the NTMA to raise funds for the Exchequer.
3. These are known as repos, term deposits and swaps (p. 8) in the jargon of the financial markets. The usage of these techniques will be considered in more detail later.
4. Interest on overnight balances was introduced in January 1982 and, since January 1986, it is set 3.25 percentage points below the STF Rate.
5. Since August 1993 this figure has been increased to 15 per cent.
6. All outstanding exchange controls were terminated on 31 December 1992.

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DISCUSSION

Patrick Honohan: Having received an account of the detailed day-to-day operation of monetary policy, it seems appropriate to ask oneself the question: just how important is monetary policy in Ireland? On the one hand, we have many historical illustrations of just how damaging bad monetary policy can be. The most significant of these is clearly the Great Depression in the United States. Most authors now attribute the severity and length of that depression primarily to poorly designed monetary policy, where instead of vigorously acting as a lender of last resort, the Federal Reserve allowed a severe tightening of liquidity, forcing banks to call-in loans at a time when this was likely to - and did - lead to bankruptcies, and allowing a large number of banks to fail for want of liquidity.

In less dramatic times, and especially while events are still unfolding, it is less easy to discriminate between good and bad policy episodes. For instance, I believe that history may well prove German monetary policy at present to have erred on the side of tightness, whereas there can be little doubt that UK policy in the late 1980s was too lax. Part of the problem is that signals are so unreliable. That this is so with nominal interest rates has long been understood; indeed that was the principal message of early monetarism. On the other hand, it is now also widely recognized that money growth can often provide a misleading indicator as, for example, in the US in 1982, when some took the great expansion of money as a signal that inflation would rapidly increase. On this occasion, excellent judgement was exercised, policy was not tightened, and 8 years of unbroken growth ensued.

So monetary policy can be decisively important in large economies. It might still be asked whether this is true for small economies like Ireland. Under the Sterling link this was indeed a moot question. So long as we have our own currency, it is clear that monetary policy must be important for the long-run evolution of inflation; but how about the short run? Padraig McGowan's paper provides us with a detailed account of the mechanisms used to manage monetary policy in the short run, and the active way in which this is done indicates that the Central Bank itself believes that short-run monetary management is important. Discretionary interventions made by the Central Bank have frequently amounted to hundreds of millions of pounds (up to 3 per cent of GNP) over periods as short as a few weeks in recent years.

McGowan divides Central Bank support into two categories: discretionary and what he calls overnight balancing. Discretionary support, which so far as can be made out from published data¹ is by far the most important quantitatively, has the objective of avoiding "unwarranted changes in domestic interest rates". In contrast, overnight balancing is done at off-market interest rates, and thus by systematically undersupplying or oversupplying the market with discretionary liquidity, the Central Bank can put pressure on interest rates. It may be for this reason (i.e., that discretionary interventions are far more important) that McGowan argues

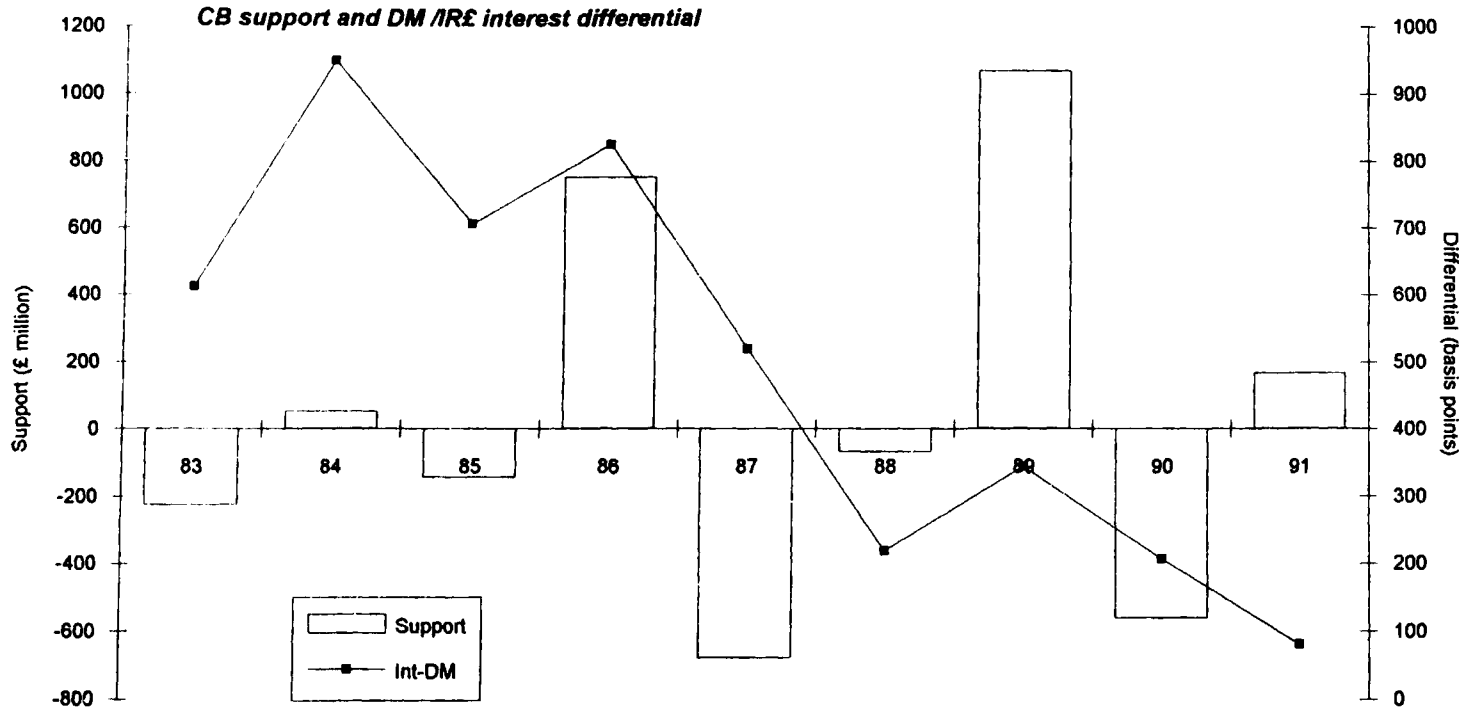
that the Central Bank is a buffer and that "the emergence of higher market rates should not be interpreted as an increase in interest rates caused by the Central Bank". I cannot wholly agree with that view, as it seems clear to me that decisions regarding the huge interventions by the Central Bank over the years must have had a significant influence on interest rates.²

Indeed, the most important, and one of the oldest, decisions for a Central Bank is to decide when it will finance a liquidity shortfall (or absorb a surplus) and when to allow that shortfall to drive up interest rates. Traditionally, predictable seasonal fluctuations in liquidity (coming from harvests and tax collection cycles) have been seen as appropriate to finance (Miron, 1986) - though recent studies have questioned whether such stabilisation is welfare-improving. More difficult is the question of liquidity fluctuations due to panics or speculative flurries. In the 19th century, Bagehot insisted that these should be financed, but at some penalty rate. It is difficult to know whether one's determination not to devalue is more convincingly shown by raising interest rates (thereby incurring political, but not financial risks) or by using the available international borrowing facilities without a substantial increase in interest rates. Whatever the correct answer to that may be, I do not think that we should read McGowan's paper to imply that the Central Bank has been willing to finance speculation without an increase in interest rates.

Irish interest rates in the 1980s have been extremely volatile and frequently high in real terms, despite heavy discretionary support by the Central Bank. It is interesting to note that Irish interest rates have moved in a way that is quite different to other European interest rates. Koedijk and Kool (1992) in a recent study, attempted to extract the main common trends in seven national interest rate series (including Ireland and the UK). They found two significant principal components, the second of which had a significant loading only on Ireland. Thus Ireland's interest rate movements are unique in the EMS. To what extent this is attributable to Central Bank policy is not clear.

Let me turn to some other aspects of the paper. As Dr McGowan indicates, there has been a dramatic shift to the use of market-based instruments of monetary policy over the past decade.³ Bank-by-bank credit ceilings are gone, as is the interest rate cartel. Primary liquidity ratios have been lowered, thereby reducing an implicit tax which has in recent years been equivalent to about £30 million annually. Spot-against-forward foreign exchange positions have been completely liberalised: they had apparently been seen as a tool of exchange control rather than one of prudential regulation; likewise it also appears that there are no longer any limits on the Banks' open foreign exchange positions, though there is a separate capital adequacy requirement for open forex positions.

Yet there are a number of indications that the Bank is not wholly indifferent to the identity of its counterparts in monetary policy implementation. Thus, "the Central Bank's views about



the distribution of liquidity among the banks and its views about the influence of dominant players in the market" may influence the allocation by the Central Bank of swaps between the banks. This is a surprising statement, in the light of what has been said about market orientation. One would have thought that the essence of the market-oriented policy was that the authorities would be blind to the identity of the participants (provided the participants all satisfied minimum criteria for market participation).

Certainly, such a parochial view will be unlikely to prevail when monetary policy is being determined by the European Central Bank. Indeed it is interesting to contemplate the range of considerations, listed at various points by Dr McGowan, which will presumably no longer weigh in the European Central Bank's evaluation of appropriate monetary policy interventions. There will presumably be no scope for special cognisance to be made in the new regime for the liquidity of the local banking market. This (combined with a natural tendency for local borrowers to diversify their portfolio into foreign deposits) seems to be among the greatest threats to the prosperity of the domestic banks and their borrowing customers in the EMU. It would be interesting to hear more about the future of monetary policy - and the likely scope for discretion by the local Central Bank - under the EMU.

Footnotes

1. In this regard I would note that foreign currency swaps, which have been an important source of support to the market, were not reported before 1993, except for the end-year position, and some indication of average volumes. This seems to be a throwback to an older attitude of secrecy which used to pervade monetary policy and which seemed appropriate in the 1960s and 1970s when the prevailing model of monetary policy stressed the engineering of surprises and unanticipated policy actions.
2. The figure shows annual changes in Central Bank support for the market (and separately the overnight balancing support) along with the detrended interest differential of Irish pound rates over those in Deutsche Marks. It shows that peaks in the interest differential have been associated with increases in Central Bank support, and suggests that the Bank's policy has effectively been one of "leaning against the wind".
3. The Central Bank now certainly has a very wide range of instruments at its disposal (perhaps the only instrument used elsewhere that is not available to it is the placement of Government deposits in commercial banks). Furthermore, it is clear that co-ordination between these different instruments has greatly improved,

though it would have been interesting to hear about institutional arrangements within the Central Bank and between it and the Department of Finance and the NTMA to ensure this co-ordination.

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Pat Ryan: In seconding the vote of thanks this evening, I am talking from the perspective of a market participant. I welcome this textbook description of why and how the Central Bank interacts daily with the money and foreign exchange markets in Dublin. It is an invaluable guide to all participants and other parties interested in the workings of these markets. It also is a useful reminder of the progress that has been made over the last 10 years or so in moving from an administered system to a more market-oriented approach. I had nearly forgotten about the Rediscount Rate, which was the mainstay of the old ways. It has been replaced by the STF and a whole range of market-oriented mechanisms.

I found that this paper prompted me to think about a range of practical and technical issues. So, in my seconding the vote of thanks this evening, I thought I would highlight some of these.

The points I would like to highlight touch on the ongoing workings of the markets and some extra lessons that we learned during the recent turbulence in the ERM.

I will pick out a few points under the following headings:

- Interest rate support for the external reserves
- Operation of the STF
- Operation of the ERM intervention
- Exchange Control phaseout
- Publication of information
- Further evolution of Irish financial markets

Interest Rate Support for the External Reserves

The paper notes that maintaining an adequate level of external reserves necessitates keeping interest rates at a sufficiently high level. Also it notes that, in normal circumstances, the movement in external reserves is very sensitive to changes in differentials between Irish and other interest rates. One needs to stress the importance of the sensitivity of the reserves, in normal times, to the yield differentials with other currencies. A lot of progress was made over the last couple of years in narrowing the sustainable differentials because of the progress made on other policy fronts. However, there is always the danger of pushing this too quickly.

In this regard, I wonder how closely does the NTMA tie in its pricing policies for Irish pound Government paper with the Central Bank's targets for Irish yield differentials. Clearly, the NTMA's overall objective is to minimise its borrowing costs. For the past couple of years it has been narrowing Irish gilt yield differentials over German bond yields to the stage that domestic institutions are willing to substitute German bonds for some of their Irish gilt holdings. Of course it has been able to substitute this loss of domestic investors with a group of non-resident buyers of Irish gilts but these may be a less stable base in the long run.

Clearly, in abnormal market conditions the relationships are not that clearcut. When the currency comes under abnormal pressure, diminishing and indeed negative results may be obtained by progressively increasing interest rates beyond a certain point.

The recent ERM turbulence was a good example. When the currency came under pressure then, it was clearly necessary to raise interest rates to discourage capital outflows. However, driving short-term interest rates up to the 20 per cent + level for some time, was counterproductive. This gave a message that the currency was in distress and was no enticement to capital inflows. It has been noticeable that the steady reduction by the Central Bank in its lending rates from 20 per cent to 14 per cent in the past two weeks has been accompanied by a reversal of some of the capital outflows. This statement of confidence implied by these interest rate reductions has been more effective than keeping the price up.

Operation of the STF

The Short-Term Facility system operates as a convenient secured overdraft system for banks. The price is known in advance and each bank knows its borrowing limit under the facility. On the other hand, a bank that is generating daily surpluses knows that the rate it will normally be paid for overnight deposits with the Central Bank is 3.25 per cent below the STF rate. These arrangements may be encouraging some banks to be over-reliant on the

STF facility as a cash flow source and penalising banks which have a more prudential focus on providing for liquidity in advance. This could lead banks which have a high dependence on wholesale funds to underrate the importance of long-term secure funding.

I therefore query whether it was a good idea to drop, in 1985, the system of ratcheting the STF rate for the more frequent borrower. In the US, for example, the more a bank goes to the Discount Window the higher the rate it pays. In Dublin, when there was a ratcheting STF rate system, there was almost a stigma attached to being a heavy user of the STF and this may have made people more careful. Also, is it a good idea to be so penal with the low rate paid on overnight balances?

The STF interest rate gets the most public attention, though the yields applicable to repurchases between the Central Bank and the market are more representative of market rates. This would also be more in line with the European pattern. Maybe the Central Bank should give more publicity to its repo activities. This would give clearer signals about the movement on interest rates. As movements in repo rates from day to day are less dramatic, compared with the .25 per cent multiples that apply with the STF, this approach might help to depoliticise interest rate moves.

Operation of the ERM Intervention

The paper gives a clear exposition of the distinction between compulsory interventions and the discretionary interventions that the Central Bank may undertake at its own initiative to smooth out temporary blips in the market. It spells out the point that compulsory interventions to buy the Irish pound are temporarily financed by other ERM Central Banks and do not immediately deplete Irish external reserves. It is very important to note that it is only at these compulsory intervention points of 2.25 per cent that the support of other Central Banks automatically comes into play. We have heard a lot of "loose" talk from "teenage scribblers" that Ireland could stay within a 1 per cent band of the DM. Unfortunately, some of them sold this idea to German portfolio managers who made some of their Irish gilt investment in the mistaken belief that their exchange rate downside was limited accordingly. Needless to say, these investors exhibited the symptoms of panic when they discovered that this was not the case recently. I have no doubt that this factor was a major contributor to the turmoil in the days immediately following Sterling's withdrawal from the ERM.

As long as 2 years ago the Governor of the Central Bank warned against this 1 per cent talk. Why did people choose to ignore this warning as well as overlook the published rules of the ERM?

Exchange Control Phaseout

The paper charts the recent history of exchange control. It reminds us that the few remaining controls are due to disappear by the end of this year, although it adds that "substitutes for temporarily limiting very short-term capital movements cannot be ruled out". There is no doubt that the remaining exchange controls were helpful in limiting the capacity of institutions to speculate against the Irish pound when the ERM was under pressure recently. It is therefore tempting to make a case for the retention of these remaining exchange controls.

However, I think it would be interpreted as a serious sign of weakness if we were to seek such retention when all other members went for total abolition. We had a very good example recently of how easily local actions by the authorities can be misinterpreted in the European media. During the recent ERM turmoil, the Central Bank took back to itself the administration of some exchange control procedures that it had delegated to banks. No new exchange controls were introduced. Yet the British and other European media persisted in portraying this as new exchange controls despite many attempts by people, including ourselves, to put them straight. This was very unhelpful. It should serve as a warning against appearing weak by having any unique exchange controls after 1992. I am therefore very interested in what the author has in mind when he talks about "substitutes" - no doubt our Continental friends can teach us a few tricks!

Publication of Information

The paper highlights the amount of attention that the Central Bank devotes to giving signals to the market about the likely short-term movement. I'm afraid we have on occasions found these signals a little more opaque than the paper would suggest, but that keeps us on our toes! We would, however, be very interested in more timely information on the key economic statistics and especially the external reserves data. There has been a lot of good news in our key economic statistics in recent times. However, we haven't got much of the positive impact of this because announcements of these figures are made after European markets are closed.

As the ultimate base of the banking system, the external reserves are the single most important statistic. Other Central Banks publish their external reserves figures very quickly after the date to which they relate, but the Irish figures take many weeks! Could we shorten the timescale here, please?

Further Evolution of Irish Financial Markets

As the paper mentions in its very last paragraph, when Economic and Monetary Union becomes a reality there will be fundamental changes in the manner in which monetary policy is operated and implemented. What should we be doing in the interim? I believe that we should be using the interim period to maximise the potential of the financial services sector for that environment. The market-oriented approach of the Central Bank, as described in this paper, has done a lot to foster an environment where financial skills have been grown locally. The IFSC (International Financial Services Centre) itself couldn't have got off the ground if these developments had not taken place.

We should note that not all this business is any longer dependent on an Irish element. For example, the paper draws attention to the fact that the Dublin market already does 10 times as much foreign exchange business in currencies not involving the Irish pound or Irish residents as it does in Irish pounds. Areas where private sector capabilities might be built up include:

1. Market making in Irish Government paper
2. Foreign exchange market making in Irish pounds

Conclusion

As I said at the outset, this paper gives an invaluable description of the day-to-day activities of the Central Bank in the Dublin financial markets. It shows how these activities are conducted in support of the objectives of monetary policy. The approach of the paper creates scope for developing ideas on further refinements of the Dublin markets without losing sight of the objectives of monetary policy. I've found the approach of the paper very stimulating and it gives me great pleasure to second the vote of thanks to its author, Dr Padraig McGowan.

Reply by President: Dr McGowan thanked Professor Honohan for proposing the vote of thanks and Mr Ryan for seconding it. He also expressed his appreciation to the other speakers for their contributions to the discussion.

The President agreed with Professor Honohan that the benefits of stable prices resulting from a well designed and effectively-implemented monetary policy are not easy to attain or even recognise but that the costs of inflation and uncertainty that would easily arise from an inappropriate monetary policy would be obvious. Given an exchange rate target, the

primary objective of monetary policy in an open economy is to maintain the given exchange rate. The exchange rate arrangements and the target consistent with the arrangements are chosen by the Minister for Finance following consultation with the Central Bank. These legally imposed consultative requirements are designed to promote consistency between exchange rate policy and the legal or statutory duty imposed on the Central Bank to maintain the integrity or purchasing power of the currency.

The exchange rate target has to be maintained over time by avoiding increases in domestic credit that would have the potential to threaten the exchange rate through depletion of the external reserves. In the past, when the no margins fixed link with Sterling prevailed, the exchange rate had to be maintained primarily by avoiding excessive domestic bank lending. Since the Irish pound became a member of the Exchange Rate Mechanism of the European Monetary System in 1979 it is maintained by placing much more emphasis on using interest rates while also avoiding excess domestic bank credit to both the private and public sectors.

In circumstances like those being experienced since early September 1992, the Central Bank is called upon immediately to apply itself rigorously to the defence of the exchange rate against a rapid and substantial conversion of Irish pounds into foreign currencies. The present challenge arises from an outside shock to the economy and a sudden temporary expectation, unrelated to earlier domestic economic forces, that the exchange rate will be devalued in the context of ERM turbulence. In such circumstances, the Central Bank has three means of defence. It must immediately and decisively increase the rate of interest on its rapidly rising support to the banks, use its own external reserves to defend the exchange rate in the ERM band and, if the exchange rate falls to its lower ERM limit, avail of temporary support from its ERM partners by drawing on the Very Short-Term Facility to defend the exchange rate. It is required to pursue these courses of action to maintain the exchange rate in the ERM.

Unless the Central Bank defends the exchange rate, monetary policy would be in danger of allowing inflationary pressures to become persistent over time. Monetary policy is important in a small open economy because if it were not implemented consistently and rigorously, especially when required to defend the exchange rate, inflation would be much higher due to repeated devaluations. The day-to-day management of the implementation of monetary policy in a small open economy is just as important as it is in a large one. It can contribute to reducing uncertainty in the financial markets while, at the same time, minimising inflation and promoting confidence. However, there is no case for trying to fine tune the real economy by deliberate variations in the short-term management of monetary policy and this is not attempted.

Dr McGowan agreed that, normally, changes in the amount of discretionary support by the Central Bank would be much greater than that in the banks' overnight position. Maximum drawings under the Short-Term Facility would not exceed £150 million while banks' overnight balances at the Central Bank in excess of £50 million would be exceptional. Large movements, in multiples of £150 million, in the external reserves over a month or so have been experienced. This gives an indication of the much greater scope for changes in the short-term *Central Bank's discretionary position* compared with that in the *banks' overnight position*. As indicated in the Address, the movement in the discretionary support may be regarded as a buffer that minimises increases or decreases in interest rates compared with what would occur otherwise. In this sense, the Central Bank does influence interest rates. When, however, it has reached the limits of its discretion the markets gradually take over. In those circumstances, the markets, rather than the Central Bank, decisively determine the changes in interest rates which are then endorsed by changes in the STF rate.

On the further question raised by Professor Honohan about the range of instruments available to the Central Bank, Dr McGowan responded by saying that the Central Bank had developed a reasonably comprehensive and flexible range of appropriate instruments for managing the money markets. The instruments used in Ireland do not have the frills associated with some of those relied upon in a number of other countries. As a result, those applied here have a more direct impact. The Central Bank saw little useful scope for providing liquidity to the market by transferring public sector deposits from the Central Bank to licensed banks at the initiative of the Central Bank.

The President agreed with Mr Ryan that the policy of encouraging a narrow range of non-residents to hold, in an unhedged manner, a growing proportion of the Irish pound denominated public debt was creating a less stable environment for defending the exchange rate. The experiences since mid-September 1992 were a demonstration of this. The policy had the effect of exposing the exchange rate to increasing pressures when non-residents sought to close their open positions in Irish pounds by either selling gilts to residents or by trying to increase their indebtedness in Irish pounds to match their Irish pound denominated assets. Dr McGowan agreed that the more firmly the public debt was anchored in the hands of residents, the more compatible would be the management of it with pursuing a strong exchange rate policy in the EMS.

Mr Ryan and Professor Honohan, for quite different reasons, expressed reservations about what could be described as non-competitively determined intervention by the Central Bank that did not appear to be related to the implementation of monetary policy. In responding, Dr McGowan referred to the structure of the money market in Dublin where two domestic banks accounted for over three-quarters of the market, the remainder being divided between the smaller Irish banks and the branches and subsidiaries of international banks, both

European and North American. Because the money market had a limited number of participants of great unevenness in size, the Central Bank had found it useful, on occasions, to temper the influence of dominant surpluses or shortages of individual institutions on money market rates. The Central Bank does this with a view to having interest rates *vis-à-vis* those abroad as supportive as possible of the exchange rate rather than facilitating short-term gains for some institutions that may not be competitively determined.

Another reason for Central Bank intervention is to help to create a two-way market. At a time of major uncertainty, for example, on the morning after a realignment in the EMS or the departure of a currency from the ERM, all market participants tend to act in a similar manner being either sellers or purchasers, thereby resulting in stalemate. In such conditions, the Central Bank modestly enters the market on the opposite side as a seller or purchaser to put it in motion again. As a secondary objective, a Central Bank must also be concerned with improving the competitive functioning of the money and foreign exchange markets. A small developing money market, in which a few institutions dominate, may require intervention from a Central Bank in certain situations to encourage the market to function more efficiently. This type of small scale structurally oriented intervention should be distinguished from the substantially larger normal interventions that are associated with the day-to-day implementation of monetary policy.

Mr Ryan suggested that the Central Bank may not apply high enough rates to some banks that utilise the STF rather frequently and inadequately award the overnight balances of those banks that are primarily providers of funds to the market. In reply, Dr McGowan stated that the Central Bank's policy was to provide an incentive for all banks with surplus Central Bank funds to lend them directly to other banks rather than leaving it to the Central Bank to indirectly recycle them. On the other hand, the Central Bank may provide secured overnight accommodation, up to an aggregate of around £150 million, for the whole banking system. Individual banks are free to draw on this facility up to a maximum level set roughly in proportion to their share of the banking system's Irish pound resources, namely, current and deposit accounts. Normally the market is managed so that it is necessary for some of the £150 million to be drawn but the distribution of the drawings between the banks and the frequency of the drawings by individual banks is left to market forces. Thus all banks have the right to resort quite frequently, if they so wish, to the Central Bank on an overnight basis. Normally, Central Bank accommodation is more expensive than resorting to competing banks in the interbank market.

Dr McGowan did not endorse the idea of raising the cost of accommodation from the Central Bank to an individual bank, the more frequently, over a given period of time, it resorted to the Central Bank for secured overnight accommodation. This was because such a policy would have the potential to introduce some distortions into the level of the overnight

rate in the money market. The President added however that there was an expectation by the Central Bank that a bank would minimise erratic Irish pound funding shortages and prudently manage this funding requirement. It would be expected to do this irrespective of whether its funding difficulties were due to its own lending and treasury behaviour, that of its major corporate customers or that of the banks, including those abroad, with which it chooses to do business.

The President responded to the suggestion that the Central Bank should publish more timely and extensive information about the changes in the magnitudes and prices of its discretionary activities by saying that it might be helpful to publish immediately on screen the results of the tenders for repos and swaps. He remained to be convinced, however, that there would be a net gain to society from publishing with little delay the official external reserves compared with the present lag of, on average, 4 to 5 weeks. However, the President did not rule out a shortening of this lag by a week or so.

Similarly, regarding the magnitude of swaps, Dr McGowan said it was debatable whether or not it would be in the public interest to publish the level of outstanding swaps at frequent intervals. The concern was that private sector developments in the market emanating from abroad as well as within the country, in response to the more timely release of information about the magnitude, composition and interest rates reflected in the *Central Bank's discretionary position*, might be solely of a short-term nature that did not take account of negative longer-term implications for society. The smaller a currency in the international foreign exchange market, the greater the case for managing conservatively the release of sensitive market information by its Central Bank. This is the practice of a number of smaller EC Central Banks who release the external reserves data no earlier than 3 weeks after the end of the month. If the monthly banking figures were provided by the banks with a shorter lag after the end of the month it might be possible, as already mentioned, to bring forward the release of the external reserves figures by about a week.

In replying to the question from Fr Brady about why it appeared that the French were able to prevent disturbances in the wholesale financial markets from spilling over into higher costs of home finance, Dr McGowan said that since many of the major banks were nationalised in France, they may have accepted a significant temporary lowering of the return on their capital; this did not become a major budgetary issue for the French as the crisis receded reasonably quickly. Furthermore, mortgages in France may be funded with longer-term sources of funds rather than short-term deposits on which the rate of interest fluctuates significantly.

Dr McGowan expressed disappointment that the credit institutions had not developed more flexible mortgage instruments which could be linked to stable long-term savings rather than

to relatively mobile deposits. Longer-term savings would be less sensitive to temporary developments in wholesale financial markets than the existing source of funds for financing residential mortgages. However, over the life of a mortgage, the interest costs might be the same irrespective of how it was financed. Nevertheless, insulating mortgage rates from the implications of a defensive monetary policy could enhance the effectiveness of monetary policy while at the same time increase economic welfare by reducing uncertainty for people.

Taking a broader view, the contribution of monetary policy to minimising the interest costs and prices of housing is through the promotion of price stability throughout the economy. A stable monetary environment is also supportive of employment which is the foundation that enables people to afford reasonable living conditions. These are the routes, mainly indirect, through which monetary policy contributes to alleviating poverty and to reducing the cost of housing on the less well off members of society.

Mr Durkan posed a question about the relevance of the day-to-day money market activities by the Central Bank. Dr McGowan said that its day-to-day influence on the markets was not an indication that the Central Bank believed in an activist monetary policy designed to offset short-term real developments. Rather the Central Bank takes the stability of the exchange rate in the ERM as given, budgets for the required growth in the external reserves and bank liquidity but, within this framework, pursues an active approach to managing the evolution of the external reserves and bank liquidity towards their desired goals. This intervention by the Central Bank in the money markets contributes to minimising uncertainty in the real economy by promoting greater certainty in the money and financial markets. It is not to be confused with what is sometimes described as an activist approach to the objectives of monetary policy rather than to its implementation.

The President did not reply directly to the question by Mr Ryan about the nature of the substitutes for exchange controls which he had in mind as, at that juncture, these issues were under consideration by the Authorities and it would not have been appropriate for him to comment. However, he did indicate that the exchange rate needed to be underpinned by reducing costs within the economy, particularly through lower increases in incomes and also by fiscal measures. Such supportive policies would be much more effective than holding on to the remaining exchange controls which were abolished from 1 January 1993, as had been planned for some years.

In anticipation of their removal the Central Bank, when the exchange rate was under strain in November 1992, changed its operating arrangements to announce two days in advance that higher interest rates would be applied to any additional accommodation to be provided by it in two days time. It would be anticipated that in two days time the additional accommodation would be sought to finance the ultimate settlement of the sales of Irish

pounds in the foreign exchange market two days earlier. The implication of this is that the higher cost of the Central Bank accommodation can be built immediately into money market rates two days before the funds are provided by the Central Bank. This provides potential sellers of Irish pounds with more information in making decisions and, when sales have occurred, an incentive to reverse them by purchasing Irish pounds later during the same day. Nevertheless, the removal of the exchange controls, which heretofore minimised the extension of across frontier interbank short-term accommodation in its various forms, withdrew an element of comfort in managing the daily movements in the exchange rate within the ERM band. Some would argue that, at this juncture, there are no satisfactory substitutes for exchange controls on interbank short-term capital movements other than fixed exchange rates in EMU.

Finally, in a subsequent written response to Mr Smith's question about the research that may have been undertaken of the overall fiscal consequences of state borrowing from German bankers rather than from the Irish market, Dr McGowan said that he was not aware of any specific research on the practical consequences of external rather than total domestic funding by the NTMA. He recognised that Mr Smith's question was well founded in that there is a tax claw-back from dividends paid to residents. Over time, the yield on Irish Government paper is determined in an international market which comprises both residents and non-residents and where investors, whether resident or non-resident, buy and sell many instruments, issued in many countries and in a variety of currencies. Thus, over time the yield represents the international market view of the value of Irish Government bonds.

The question of tax is somewhat separate. At the end of the day, Irish residents must bear the entire cost of debt service. The incidence of the debt service cannot be transferred to non-residents. If there was no funding from non-residents (either in foreign currency or Irish pounds) the financing of the Exchequer borrowing requirement entirely from the domestic market would put some upward pressure on interest rates and on the yields on the public debt denominated in Irish pounds. This would lead to some increase in overall debt service costs. Domestic holders of Government securities would gain but at the expense of the general taxpayer. The total cost of borrowing would not have changed very much and it would continue to be confined to residents.