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Foreword

Since its inception the BIS has been a centre for discussions about almost all aspects of central bank policy. During the last few years, meetings at the BIS have come to involve a much wider range of central banks. This development has been part of a conscious policy of making the BIS more global in focus.

At the request of a number of central banks, we invited a small group of senior officials to come to Basle in order to discuss their experience in developing financial markets and in operating monetary and exchange rate policies in a more liberalised environment.

The central banks provided rich inputs for this meeting, both by preparing papers and by gathering the data for cross-country comparisons. BIS staff produced an overview of the main policy issues. There followed two days of lively and wide ranging discussion which deepened our understanding of shared problems and potential solutions. As the participants felt that these issues are of broad interest, the BIS is pleased to publish both its own paper (which makes extensive use of the statistics provided by the central banks) and the contributions of those central banks who were prepared to publish theirs.

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General Manager

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Changing financial systems in open economies: An overview

Philip Turner and Jozef van 't dack*

Introduction

The almost universal trend towards financial market liberalisation has been driven by many forces. For many countries, a main motive for such reform has been to improve the mobilisation of domestic savings and the allocative efficiency of financial intermediation. For some, ambitions to develop into an international or a regional financial centre have also played a role; others have felt it wiser to go along with the liberalising trend out of fears that important domestic financial activity could drift offshore.

Monetary authorities worldwide now have to implement monetary policy more through markets, and less through quantitative controls. Indeed, in some countries, the need to restore the effectiveness of monetary policy was itself an important motive for reform as more domestic financial activity took place outside the traditional channels and as the power of direct controls was eroded by the globalisation of financial markets.

Yet the financial markets necessary for the adoption of market-oriented monetary policy often do not develop spontaneously. Even if they do, the market structure that emerges "naturally" may take forms that could complicate a central bank's task of monetary management. Hence the monetary authorities will have to face the question of what they need to do to foster an effective market structure and to ensure that market participants face the incentives needed to encourage efficient and competitive behaviour.

The development of markets in which financial instruments can be freely traded does not necessarily imply exclusive central bank reliance on

* This paper has benefited greatly from the statistical input and comments of the central banks which participated in the meeting. We also would like to thank Gabriele Galati, John Kneeshaw, Zenta Nakajima, Paul Van den Bergh and Bill White for useful comments, and Ib Madsen for helpful statistical assistance.

Table 1
Background indicators[1]

	Population (millions)	Per capita GNP (US dollars)	Trade[2] as a % of GNP
Botswana	1.4	2800	41.7
Egypt	57.6	710	25.5
Finland	5.1	18850	32.7
Iceland	0.3	24590	33.5
Ireland	3.5	13630	65.3
Jamaica	2.5	1420	65.0
Jordan	4.2	1390	62.1
Malta	0.4	7600	107.0
Portugal	9.8	9370	32.7
Qatar	0.5	14540	36.1
Slovenia	2.0	7140	58.0
Sri Lanka	17.9	652	41.9
Taiwan	21.1	11600	43.2
Turkey	60.8	2450	20.8
Uruguay	3.2	4650	21.2

[1] 1994. [2] Average of exports and imports of goods and services.

them. Even in most industrial countries banks – not securities markets – continue to dominate financial intermediation. Bank intermediation ratios of 40 to 75% are common in the major industrial countries; in some of the countries under review[1], such as Botswana, Malta, Portugal, Qatar and Taiwan, banks account for more than 80% of financial sector assets; in Jordan and Turkey they claim between 70 and 80% of financial institution assets (see Table 4).

Moreover, in several countries monetary policy is still largely implemented by operations outside existing markets. Such operations include procedures such as tap sales of securities and other "market-like" instruments which differ from transactions in open financial markets – although they do of course affect market conditions. Almost all industrial countries

[1] Broad indicators of economic and financial activity in the countries under review are given in Tables 1 to 3.

Table 2

Macroeconomic indicators

Changes in percentages; levels as a percentage of GDP

	Real GDP growth	Inflation	Current account balance	Budget balance	Domestic savings	External debt
	1990–95 annual averages				1995	
Botswana	4.6	12.4	8.4	6.9	38.2	11.0
Egypt	3.8	13.0	4.5	–7.2	16.9	49.7
Finland	–0.6	2.8	–1.9	–3.6	21.4	100.7[1]
Iceland	1.0	5.5	–1.2	–3.6	18.7	62.0
Ireland	5.6	2.6	4.7	–2.4	32.6	108.7[2]
Jamaica	2.2	36.5	–2.3	3.9[3]	23.8[1]	88.6
Jordan	6.1	6.4	–8.7	1.3	15.0	96.6
Malta	5.3	3.2	–3.7	–4.0	16.7	22.6
Portugal	1.5	8.2	–0.7	–5.5	20.7	41.1
Qatar	2.0	2.6	–1.2	–4.6	..	54.3
Slovenia	3.4[4]	21.3[4]	1.4[4]	–0.1[4]	26.4	16.4
Sri Lanka	5.5	12.2	–4.6	–7.5	15.5	75.8
Taiwan	6.4	3.8	3.8	–1.3	25.7	..
Turkey	4.1	76.3	–0.9	–4.6	21.5	39.9
Uruguay	3.2	68.6	–1.0	0.2	12.4	56.1

Note: 1995 data are provisional and partly estimated.

[1] 1994. [2] 1993. [3] 1990–94. [4] 1993–95.

continue to retain some form of reserve requirements and central bank credit facilities (see Table 5). Even where money markets are highly developed, worries about interest rate volatility and the desire to ensure a wide range of banks participate in central bank operations remain important in the choice of instruments, favouring the use of discount windows, deposit and credit facilities at the central bank and so on. While some central banks in the industrial world have encouraged the development of new short-term open markets, not all have.

This paper provides a summary of some of the issues raised by financial market reform, drawing on the experience of countries that participated in the meeting. The first section of the paper identifies certain impediments to reform – both macroeconomic and institutional – and considers what might be done about them. The second section reviews

Table 3
Monetary indicators
Annual averages

	Broad money[1] as a percentage of GDP		Ratio of broad money[1] to currency in circulation		Bank credit to the private sector as a percentage of GDP	
	1980–85	1990–95	1980–85	1990–95	1980–85	1990–95
Botswana .	28.1	27.0	9.9	13.9	13.4	13.4
Egypt	80.1	84.6	3.4	7.2	24.3	25.7
Finland . . .	45.1	59.5	21.9	29.4	54.5	82.9
Iceland . . .	28.4	38.1	23.1	40.6	36.3	45.2
Ireland . . .	40.4	48.4	6.9	10.0	27.1	30.2
Jamaica . . .	44.4	45.5	8.6	8.6	25.3	24.4
Jordan . . .	86.9	120.1	3.1	4.1	52.7	63.8
Malta	129.6	145.5	2.3	3.9	36.3	76.7
Portugal . .	78.8	73.8	8.2	13.0	57.8	49.3
Qatar . . .	33.5	60.9	8.0	12.0	20.6	63.9
Slovenia[2] . .	..	32.1	..	12.8	..	26.0
Sri Lanka . .	30.5	31.9	4.4	4.4	20.1	23.2
Taiwan . . .	81.2	175.6	11.1	21.8	58.9	129.2
Turkey . . .	12.9	6.5	3.5	2.4	16.3	16.0
Uruguay . .	21.7	11.5	4.6	3.2	40.4	26.5

Note: 1995 data are provisional and partly estimated.

[1] Money plus quasi-money. [2] Annual average 1991–95.

two strategic issues: the question of sequencing and speed of reform, and what is to guide monetary policy. The third section considers some practical issues in the development of particular markets: the interbank market, the Treasury bill market, the foreign exchange market, the bond market and derivatives markets. The final sections consider two important general questions of monetary policy – the role of residual controls on bank lending and sterilisation operations by central banks coping with capital inflows.

Table 4

Indicators of commercial bank structure[1]

In percentages

	Share of banks in total financial sector liabilities	Importance of offshore banking operations relative to domestic operations	Share of foreign-currency denominated assets in total assets[2]	Share of foreign-currency denominated liabilities in total assets[2]	Share of three largest banks in total bank deposits
Botswana	92.0	..	3.2	2.0	..
Egypt	74.4	..	34.7	26.6	57.2
Finland	71.0	..	24.0	33.0	63.0
Iceland	31.0	..	22.1	21.0	80.2
Ireland	56.5	..	53.0	51.0	44.0
Jamaica	56.1	..	16.0	11.0	68.2
Jordan	78.0	..	22.0	23.5	59.0
Malta	92.3	19.9	29.5	17.6	86.5
Portugal	83.0	5.0	22.5	19.4	58.0
Qatar	95.0	..	30.8	16.0	..
Slovenia	..	..	23.6	31.0	53.0
Sri Lanka	60.0	23.2	10.4	10.9	69.0
Taiwan	82.8	0.4	13.8[3]	13.8[3]	28.1
Turkey	76.0	..	45.0	..	48.0
Uruguay	..	42.2[4]	81.5[5]	88.8[5]	..

[1] 1994 for all countries except Malta and Uruguay, where data refer to 1995. [2] For Botswana, Finland, Jordan, Portugal, Qatar, Slovenia and Sri Lanka, share of foreign assets/liabilities. [3] Sum of foreign-currency denominated assets and liabilities, respectively, as a percentage of total assets and liabilities. [4] Ratio of non-financial, non-resident private sector placements plus non-resident deposits, to those of residents. [5] Credit to (deposits of) the non-financial private sector in foreign currency in relation to total credits (deposits).

Table 5

Main central bank instruments for guiding money market interest rates in selected countries

(16.12.94)

	BE	DK	FR	DE	GR	IE	IT	NL	PT	ES	GB	CA	JP	SE	CH	US
Reserve requirements																
With period averaging			X	X			X	(1)	X	X		(2)	X		(3)	X
Without averaging of reserve positions					X	X		X			(4)			X		
Use of "tunnel" for market interest rates*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	No
Basic bank reserve-supplying operations:																
Periodic tenders (with interest rate signalling)	X	X	X	X	X		X	X	X	X	(5)			X		
Market operations (limited direct rate signalling)													X			X
Instruments used to limit rise in market rates:																
Standing C.B. credit facility with posted rate*	X		X	X	X	(6)	(6)		X	(8)	(9)					
Fine-tuning operations without rate signalling effect	X	X	X	X	X	X	X	$	X			X	X	X	X	X
Fine-tuning operations with rate signalling effect				X			$		X	(7)	X	X	X	X		X
Other instruments to limit fall in market rates:																
Standby facility for absorbing excess bank reserves*	X	X		X		X		#	X		(9)		#	X		#
Fine-tuning operations without rate signalling effect	X		X	X	X	X	X	$	X			X	X	X	X	X
Fine-tuning operations with rate signalling effect				X		(10)			(7)		X	$	X			
Issue of C.B. paper to absorb bank reserves		X		(11)				X	X		(12)					
C.B. credit facility at rates with limited/indirect on money-market rates:																
Special liquidity accommodation at penal rate	X	X			X	(13)	(13)		XV	X	XV	XV			XV	
Privileged rate facilities (restricted access)	X			X			X	X					X			X

* In normal circumstances. Quotas or minimum maturity may limit effect on day-to-day rate. $ Instrument used infrequently or of limited importance. # Adjustment by banks of recourse to relatively cheap central-bank credit facility. V= variable, setting based on formula.

[1] Averaging positions in banks' C.B. borrowing quotas have a comparable effect on market interest rates. [2] Average non-borrowed reserve balance of at least zero gives exemption from penal C.B. borrowing charge. [3] Prudential requirement. [4] Banks' target balances for clearing needs reported to C.B. [5] Daily C.B. operations with discount market at published rates. Longer-term tender operations at same rate (no signalling). [6] Short-term facility subject to quota - not always serving as a rate ceiling. [7] Rates on C.B. liquidity supplying/absorbing operations at beginning of, and during reserve period set two bands. [8] C.B. supplies liquidity in unlimited amounts at a posted rate on occasion. [9] Occasional C.B. "2.30" lending to discount market at published rates. [10] C.B. intervention at unannounced operational floor. [11] C.B. paper issued in 1993 but no longer on issue. [12] Adjustment of Government Treasury bill tender to create shortages of bank reserve. [13] Facility for borrowing beyond quota may be offered.

Source: J.T. Kneeshaw, "The implementation of monetary policy in western Europe and advanced developing countries", unpublished BIS paper, 1995.

Impediments to liberalisation

Most financial activity in developing countries – and many of the countries under review are no exception to this – can be classified into three broad sectors:

- *an informal* sector, often not regulated and sometimes geared to providing finance for households, farms or other small-scale businesses. In most of the countries considered here, the informal sector has become fairly insignificant, although, as demonstrated by the active parallel foreign exchange market in Jamaica for example, it has not disappeared altogether;
- a *formal domestic sector* that typically serves to channel household savings to the government and other large entities (public as well as private); the main institutions in this formal sector are often state-owned. The importance of state-ownership of banks is quite marked in several of the countries under review: over 60% of bank assets in Sri Lanka are to be found in state-owned institutions; the largest commercial bank and the equally important mortgage bank in Uruguay are state-owned; the two largest banks in Malta are partly state-owned; in Iceland, two major banks accounting for 60% of deposits of deposit-taking institutions are under state control.[2]

  Until quite recently, the formal domestic sector was usually both highly protected and tightly regulated. Typically banks were at the centre of the system, lending to favoured borrowers at low interest rates; sometimes other financial institutions had their particular "turf" protected by segmentation rules that defined their permitted business. Interest rates were controlled, and accordingly usually needed to be supported by exchange controls. Markets for financial securities were usually underdeveloped;
- an *offshore sector* and/or foreign currency centres which may be identical if tax and regulatory regimes apply equally to offshore business and foreign currency operations of the domestic financial sector, is the third broad sector commonly found in developing financial markets. In many countries, foreign-currency denominated deposits and bank

[2] Limited state ownership is recorded in Finland, Qatar, Taiwan and Turkey, while private ownership would appear to be the norm in the other countries. It should be noted that state-ownership is significant in a number of industrial countries: the assets of state-owned institutions constitute over half of bank assets in Germany, Greece, Italy and Norway.

loans have been important. As Table 4 shows, foreign currency bank assets/liabilities of the countries under review, for instance, represent from about 15% (Taiwan) to about half of total assets/liabilities (Ireland, Turkey); sometimes large discrepancies exist between the shares of assets and liabilities denominated in foreign currencies. In Malta, Portugal, Sri Lanka, Taiwan and Uruguay, offshore banks are active, some of them having acquired significant importance.[3] Sometimes the growth of foreign-currency business has reflected the extensive trading activities of major enterprises; sometimes it has reflected the foreign-currency earnings of emigrant or cross-frontier workers (Portugal, Qatar, Turkey); sometimes proximity to a large neighbour (Ireland, Uruguay) is the main factor.

In considering the impact of liberalisation, it will often be important to bear in mind the interaction between the regulated and non-regulated sectors of the old financial system. When banking systems are underdeveloped, informal channels of credit often play an important role. Informal foreign exchange markets have added a dimension of flexibility in many controlled systems. Of course, how these three sectors interact, and their relative sizes, differ considerably across countries; such differences have often influenced the process of reform. Much of what follows in this paper relates to the development of the formal domestic sector where reform has encountered a number of significant (and often commonly-shared) impediments, both macroeconomic and institutional. However, the important issue of policies needed to ensure the soundness of the banking system, touched upon in several places, is not systematically addressed in this paper.[4] The other papers in this volume examine in more detail a number of more country-specific difficulties.

Macroeconomic impediments

Three general macroeconomic features that can inhibit reform of the domestic financial sector are large government deficits, high and variable

[3] See Table 4 for some indications of the importance of offshore institutions in the countries under review. In Malta, one of the major recent trends in commercial banks' balance sheets has been the growth of deposits of affiliated offshore banks.

[4] A well-developed legal and regulatory framework, as well as effective supervision of financial institutions, is a major building block of the infrastructure of financial markets. Other building blocks are the promotion of appropriate professional skills in the financial industry and the development of efficient and safe clearing and settlement systems. The latter infrastructural elements are also not discussed systematically here.

rates of inflation and an unrealistic exchange rate, often buttressed by controls on trade and payments. These features will be considered in turn.

Large government deficits can stand in the way of the development of free financial markets and stable, competitively-priced financial instruments. In some cases, such large deficits are a major impediment to better functioning financial markets and more efficient policy-making. One reason is that they are almost always financed, in large part, by taxing the domestic financial sector. This includes the inflation tax on currency issue and on reserves commercial banks are required to hold with the central bank (at zero or below-market interest rates). Some estimates have put seignorage revenue at over 10% of government tax revenue in many high-inflation developing countries: in low-inflation countries, seignorage rarely amounts to more than 2–3% of government revenue. In addition, large deficits often tempt the government to impose ceilings on interest rates that are below market-clearing levels and so lower the cost of government borrowing in the bond market. Empirical estimates suggest that this is as large as the seignorage tax: one recent study of 22 countries found that government revenue from financial repression averaged about 9% of total central government revenue.[5]

Many of the countries represented in this meeting have followed the practice common in most major industrial countries of putting in place institutional arrangements to limit direct central bank loans to the government. The central banks of Egypt, Finland, Iceland, Portugal, Qatar and Taiwan are under no obligation to finance the government.[6] In Ireland, Malta and Turkey, government access to central bank credit or advances is being significantly reduced. Only in Jordan, Sri Lanka and Uruguay does the government appear to have significant access to central bank financing. Even if the government gets central bank finance only to ease cash management during the year (with no longer-term indebtedness), the seasonal flows of government receipts and payments can complicate the central bank's management of short-term interest rates.

[5] In some cases the gains of financial repression have accrued to the private sector. In the 1960s and 1970s, the Finnish authorities achieved large budget surpluses and accumulated financial claims on the private sector yielding below-inflation returns. Vested interests of privileged groups of private sector debtors and their political influence were impediments to the emergence of free financial markets.

[6] In Finland, however, where fiscal surpluses were more common than deficits in the past, the Government typically held (non-transaction) deposits at the central bank.

But forcing the Treasury to manage its own position could still, given the size of the flows, impinge on central banks' management of short-term interest rates. In Sri Lanka and Turkey, for instance, the high volatility of interbank interest rates reflects the major and hard-to-predict swings in the government's liquidity position. A final complication is the use of the central bank as the fiscal agent for government debt management – a rather common practice in many countries. Large budget deficits in general may aggravate the conflict between maintaining a smooth market in government securities and the desired stance of monetary policy.

Paradoxically, perhaps, modest but persistent government deficits have historically tended to favour the development of free financial markets. The steady supply of high-quality government paper, once it goes beyond any captive market with the banks, has often prepared the ground (by serving as benchmark assets) for the development of other financial instruments, entailing a freer financial market (sometimes bidding non-bank funds away from banks) and a more market-like monetary policy. A related aspect is that central bank holding of Treasury bills has historically facilitated central bank operations in the money market. The opposite condition, a persistently strong fiscal position, by contrast can mean a dearth of high-quality public sector paper (as well as difficulties in launching a bond market).[7] Nowadays, however, reverse repurchase agreements can provide an alternative mechanism when the central bank does not own a suitable public sector security. Also high-quality paper of other than government provenance (e.g. commercial bank certificates of deposit, central bank paper and even commercial paper) might be used for conducting open-market operations. Taiwan, for instance, has managed to conduct monetary policy via the money market without a government deficit.

The second stumbling-block has often been *high and variable rates of inflation*. There are several ways in which inflation can complicate the transition to freer financial markets. A previous history of high inflation can mean that real interest rates may have to be kept very high to contain loan demand as long as some potential debtors continue to expect a resurgence in inflation to eventually reduce the real value of their debts.

[7] This is currently the case in Botswana. Past experience of Finland and Taiwan was similar. In Taiwan, however, issues of government bonds have increased significantly in recent years within the context of the implementation of the six-year National Development Plan.

The longer such behaviour persists, the greater is the danger that indebtedness will build up in an unsustainable way – putting not only the debtors but also the lending institutions at risk. Another difficulty is that high inflation can inhibit the development of a government bond market. A number of countries have resorted to indexation in an attempt to find a way around some of these difficulties. Finland had a widespread system of indexation in the 1950s and 1960s that was, however, prohibited by law in 1968. Iceland has issued indexed government debt since the mid-1960s, and a significant proportion (about one-third at present) of commercial banks' assets and liabilities is index-linked.[8] In Turkey, part of public-sector long-term borrowing takes the form of the issuance of foreign currency-linked bonds.

A third difficulty is often an *unrealistic exchange rate*. Extensive restrictions on imports, sometimes combined with the selective promotion of exports, have frequently meant that the exchange rate was not allowed to play its proper role in allocating trade. With the dismantling of restrictions on trade, often combined with other domestic economic reforms, the role of the exchange rate is enhanced and its equilibrium level altered. If the exchange rate is misaligned, the investment signals from relative prices will be distorted. Liberalising financial markets in such conditions may lead to funds flowing to the wrong sectors. One important consequence is that banks and their clients with significant foreign exchange exposure will be hard-hit when a sharp exchange rate correction takes place.

Institutional impediments

The institutional structure inherited from the era of controls is often quite unsuited to a market-driven environment. Moreover, to the extent that it reflects certain deeper or historical features in a country, the structure may not be susceptible to quick reform. National savings institutions, for instance, may have acquired a life and constituency of their own; in some cases, they are the main collectors of household savings. For instance, the largest contractual savings fund in Sri Lanka (the Employees' Provident Fund) captures a large part of longer-term savings and channels

[8] With inflation having been contained for several years now, the use of indexation of short and medium–term financial obligations has been reduced significantly.

them to the public sector at below-market interest rates. When it can mobilise longer-term savings cheaply, the government may be reluctant to allow interest rates to be more market-oriented and may not see a need for a bond market.

Although generalisation about institutional features is difficult, four common elements can be identified: a dependence on regulation; the small size of financial markets that may be thin and oligopolistic; the heritage of an unhealthy banking system; and taxation.

A first inhibiting feature is the *regulation-bound mentality* of those whose professional skills have been developed in an environment of tight government control. People come to expect the authorities to decide for them, and to protect them. One legacy of financial repression is often a much too cosy relationship between the commercial banks and the central bank (e.g. Finland during the era of regulation). The banks may fail to understand the often less evident discipline of the market, and may underestimate the risks they run. They may be unused to applying the techniques essential for participation in modern financial markets (accounting, provisioning, treasury management, payment and settlement systems, the computation of risks with derivatives, etc.). This general lack of experience is seen by some as a reason for preferring a gradual pace of reform.

The second feature is intrinsic: *the very smallness of the financial market.* This inevitably limits the feasible range of marketable financial instruments, forces the authorities to choose between width (variety of financial markets) and depth (volume of transactions) and may convince the monetary authorities to play a market-making role that is not necessarily in harmony with monetary policy objectives. It may also mean only a small number of participants in the local financial markets. In many of the countries under review, the banking sector for instance is dominated by a few banks. The last column of Table 4 shows that except in Ireland, Taiwan and Turkey, more than half of bank deposits are held by the three largest banks; concentration ratios of over 70% are recorded in Iceland, Malta and Sri Lanka.[9] In some cases the development of interbank markets may be inhibited by banks' reluctance to deal with each other (because of

[9] The concentration ratios in the major industrial countries tend to be smaller: statistics of the share of bank assets (rather than deposits as above) accounted for by the largest five banks in each of the Group of Seven countries, other than Canada, show an average of only one-third. However, in the smaller industrial countries, these shares are about two-thirds.

credit risk or because of reluctance to reveal commercial interests to each other). Initial attempts to establish a money market in Jordan in the mid-1980s, for example, ran into difficulties as the two major banks were reluctant to trade with each other. A similar reluctance has also been observed in Iceland, Finland, Jamaica and Malta. Credit risk may well be higher in countries with a large number of small institutions. One classic way of dealing with such risks is to use collateral (e.g. first-class securities such as government paper). An alternative possibility is that organising clearing on the books of the central bank (who may hold assets from each commercial bank under reserve requirement arrangements), may assure banks that settlements will be honoured.

Another danger is that a small number of participants may stimulate uncompetitive behaviour by key participants – this may well happen when there are a few equally large investors. A number of central banks attempting to sell government stock to the market (usually bonds) have been faced by an investment "strike" by the major institutional investors seeking, by acting in concert, higher yields. In many countries, the banking system is also in practice dominated by one or two large banks. In situations where such banks are state-owned, the impact of deregulation will depend on the rules by which state banks are directed to operate. In cases where banks are private, state control may be replaced by private oligopolistic behaviour that may not be conducive to more efficient performance. In some countries where a few banks have extensive market power, authorities therefore have elected to slow the pace of interest rate liberalisation. Another possible remedy, or at least countervailing force, is to allow the entry of new institutions, in particular foreign-owned banks. To foster competition in Egypt's banking sector, joint venture banks with foreign participation were promoted and foreign bank branches were allowed a greater range of activities; branches and subsidiaries of foreign banks were a major force during the initial financial reform stages in Ireland; in Portugal, banking reform included the entry of new domestic and foreign institutions; in Botswana the recent entry of two foreign banks much increased competition in the commercial banking sector; and in Taiwan, restrictions on the entry of new private commercial banks were lifted in 1991. But where a country is already over-banked (as several are after many years of financial repression) this solution may not be desirable. Another possibility is for the central bank to support, on occasion, a relatively small bank in bidding for business: if done in a way

difficult for the large banks to predict, this may serve to limit the abuse by a dominant bank of its position. Yet this tactic has its dangers, notably in appearing to undermine the neutrality of the central bank in its dealings with the commercial banks.

The third difficulty is that many countries have had to embark on reform with a *banking system that is heavily weighed down by bad loans or serious currency/interest rate mismatches* between assets and liabilities. Often this is the legacy of earlier policies of government-directed credits to loss-making enterprises. In addition, the change in relative prices that follows general economic deregulation may itself make loans bad that had earlier appeared viable. Moreover, the structure of many banks' balance sheets – long-term loans at fixed rates financed by short-term deposits at variable rates – might look safe when interest rates are regulated (with long and short rates often bearing a fixed relation to each other) but can be very risky in a world where short-term rates can change suddenly. A similar issue already noted above arises with foreign currency exposure – as long as the exchange rate remains stable (e.g. through controls) a particular position can appear to be safe, but can cause major difficulties if the exchange rate collapses. Of equal importance to the structure of the banks is the human capital employed by them – staff that are often ill-trained, badly-paid, for whom a job in a bank provides a safe and undemanding occupation, and managers who have little preparation for the task of risk assessment so essential in a liberalised system. Hence the need for reform to be accompanied by a major educational effort as well as by a much strengthened prudential and regulatory framework.

Finally, *taxes* can inhibit financial market development. Treasury bill markets often fail to develop in countries where coupon payments are subject to withholding taxes. In addition, taxes on financial market transactions will discourage secondary market trading. For example, tax liabilities (such as withholding taxes) on money market paper vary considerably across institutions and instruments in Jamaica, limiting interbank trading of such paper. Likewise, taxation regimes in Taiwan have hurt trading activity in the corporate bond market and, until recently, in the call loan market.

Strategic issues of reform

There are two strategic issues, distinct in theory but often interrelated in practice, that need to be addressed: sequencing and speed of reform is the first and what is to serve as a guide to monetary policy is the second.

Sequencing and speed

Academic discussions about the timing of financial-sector reforms have produced few firm prescriptions for policy that have general validity. Moreover, in practice, financial reform is often not so much the outcome of a well-considered grand design, as the outcome of a process in which policy makers react to actual market developments (as in Finland) as well as to political and/or foreign pressure. In Ireland, too, the timing question never was raised in earnest: rather than to tackle the task of market development by considering one market segment at a time and in particular sequence, all aspects of development were pursued simultaneously.

As noted above, a stable macroeconomic background – notably small budget deficits, low inflation and a realistic exchange rate – can ease the transition to a liberal financial system. Yet unsatisfactory macroeconomic conditions do not necessarily rule out financial reform – they may even be the catalyst for reform (e.g. Egypt). The greater reliance on market mechanisms in the financial sector will itself reduce distortions. Moving to more realistic financial prices – particularly higher real interest rates – may also act as a spur to fiscal correction.

Nevertheless, one conclusion of the sequencing literature that has attracted rather broad, if not universal, support is the rule, associated in particular with Ronald McKinnon and Sebastian Edwards, that deregulation and reform of the domestic financial market should precede the liberalisation of the capital account of the balance of payments. The underlying rationale for this view is that external liberalisation alongside financial reform can give rise to speculative short-term capital flows and thus can aggravate – and possibly render permanent – the temporary or transitional negative effects of reform. The recent experience of Mexico and a number of other countries does indeed illustrate how, in the early years after reform, capital inflows – inflated by volatile short-term capital movements – can reach levels that are not sustainable. In the process, the

exchange rate and other financial asset prices can overreact in ways that can compromise the long-term goals of reform. This is often associated with a boom in consumption (rather than investment), usually supported by a strong expansion in bank lending to households and sometimes involving a very large increase in imports of consumer goods.

The experience of disruptive transitional difficulties reflects three general features. The first is that economic agents may take time to adjust to a new environment of greater competition, where credit demands are limited by interest rates and not quantitative ceilings. There was indeed a credit explosion in the personal sector in a number of countries following liberalisation. At the beginning of the reform process, households were typically "good risks" because their access to credit had been artificially held down under earlier arrangements. Even high nominal interest rates may then fail to prevent a surge in borrowing by households. The simultaneous portfolio reallocation by the entire banking system that can result may well produce large and destabilising swings in real estate and other asset prices. Moreover, in many countries financial reform has gone hand in hand with trade liberalisation, which has itself provoked a sharp, and sometimes temporary, surge in imports. With heavy capital inflows producing an overvalued exchange rate, imports may be further encouraged. In short, the transitional situation may be characterised by a hard-to-handle mixture – capital inflows/excessive expansion in bank lending/consumer-led import boom/current account deficit. In the early 1990s Finland had to cope with some of these negative consequences of financial reform.

A second general element is that greater competition tends to squeeze bank profits from their traditional business. Banks have often responded to this by expanding into new higher-risk (and profitable provided things do not go wrong) business. During this process, credit growth can be very rapid even though underlying real investment opportunities have not improved.

A third general aspect of transition is that decision horizons are shorter in financial markets than in markets for real assets. Foreign money can easily be attracted into financial assets by calculations of short-term financial gain that may have little or nothing to do with the underlying returns to real assets. This may be all the more true in many emerging financial markets where longer-term markets are less well developed than short-term markets. Although a financial investor may acquire a financial

claim that can be quickly traded, the ultimate user of the investment funds may have to make a commitment to long-term projects that is not easy to reverse.

From a macroeconomic perspective, a temporary (and reversible) influx of foreign capital – not justified by the underlying returns on real investment – can have lasting consequences that may not be desirable. Particularly in countries with small financial markets portfolio capital flows can often cause financial instability. If the authorities resist exchange rate appreciation through intervention, the inflow will be absorbed into the official reserves. If sterilisation is complete, there can be significant quasi-fiscal costs in financing high levels of reserve holding. With incomplete sterilisation, commercial banks' liquidity is increased, and this may contribute to an excessive expansion of bank credit. Moreover, such a credit expansion will not be easy to unwind in the event of a withdrawal of foreign capital, and this may create problems for the banks. Under a floating exchange rate, the authorities can avoid unwanted reserve accumulation only by allowing the exchange rate to rise. Although the exchange rate will fall back when the capital flow reverses, some consequences will endure – the long-run effects of investment (and disinvestment) decisions based on a misaligned exchange rate, the build-up of foreign debt and so on. To the extent that bank loans advanced when the exchange rate is high become non-viable when it declines, the banking and financial system itself can be hurt (see below).

These considerations have led a number of countries to maintain certain controls on capital movements, at least until the soundness of the domestic financial system is assured. Remaining restrictions on capital flows were lifted in Ireland and Portugal only in the early 1990s when domestic financial reform had taken a firmer hold. Many countries have been wary about an over-hasty relaxation of controls because of the worries that an eventual reimposition would create unnecessary uncertainty in the minds of potential investors about future rules and regulations. A "shell" of exchange restrictions, even if it is nearly empty, sometimes is retained to warn speculators that controls could be quickly and easily retightened. But such a capital control "shell" has its price: the possibility it offers for reverting to stricter controls is likely to induce investors to exact a premium for holding this country's financial assets.

In many cases, controls have been designed to discriminate in favour of investment that helps make the economy more productive and

responsive to the world market (e.g. foreign direct investment and long-term equity purchases) and against potentially volatile investment motivated by considerations of short-term gains. The sequencing of capital account liberalisation in Portugal – giving priority to those capital transactions most directly linked to international trade and to the right of establishment of foreign enterprises – is a prime example of this approach. In much the same vein, capital account opening in Malta and Sri Lanka reflects the authorities' policy of first allowing longer-term capital flows. Many countries restrict non-resident purchases of short-term paper or require non-resident investors to hold securities for a minimum period before resale is permitted. Some countries also limit foreign borrowing by domestic enterprises – a practice often justified on prudential grounds and in order to preserve a country's standing in the international financial markets. Other techniques rely on altering relative prices rather than on blanket prohibitions. Reserve requirements on banks' borrowing from non-residents have been one common way of reducing the returns banks can offer foreigners. Another technique (used by Malta, for example) is to require banks to invest the counterpart of non-resident deposits in foreign currency deposits abroad – effectively getting the banks to sterilise the inflows themselves. The sale of foreign exchange bills to commercial banks is a similar technique followed by Slovenia. In this country, moreover, the drawing of foreign loans by residents is partly sterilised by obliging them to deposit a certain percentage in an interest-free tolar account at the central bank. Selective taxes have also been applied to limit capital inflows.

For many countries, however, the control of capital movements is not feasible, often because of a long tradition of cross-border investment. In others, the liberalisation of the capital account can act as a spur to make domestic financial institutions more efficient; and it can provide a certain discipline for economic policy. Both Egypt and Qatar have open external regimes, although domestically financial markets are not well-developed and remain in part controlled. Finally, capital controls can have perverse effects, discouraging capital inflows and the repatriation of domestic savings invested abroad, while not preventing resident capital outflows. In Jordan and Sri Lanka, particular episodes have been identified in recent years in which strict controls caused heavy capital outflows, whereas their subsequent relaxation resulted in significant net reflows.

Monetary policy: the exchange rate regime

The choice of exchange rate regime is a central strategic choice in defining how to guide monetary policy. A summary (as of October 1995) of the key characteristics of exchange rate regimes and convertibility status in the countries under review is provided in Table 6. Several countries have modified their exchange rate regime over recent decades, some in response to economic imbalances, others as part of financial liberalisation.[10] In addition, most countries under review have sought to "steer" their exchange rate, even where they have been formally floating.[11] In some cases, the sheer scale of economic transformation in a rapidly industrialising country may make it difficult to trust the market to find the "right" exchange rate. In Botswana, for instance, a floating exchange rate is viewed as having limited effectiveness in balancing the market for foreign exchange: high dividends associated with diamond production would lead to an appreciation of the domestic currency,

[10] Two of the more significant regime changes in recent years have been noted in Finland and Jordan. Finland had adopted a trade-weighted peg in the late 1970s. To accommodate greater capital mobility, the initially small fluctuation margins around the pegged rate were widened over time. The exchange rate band, however, could not withstand the severe deterioration of the economy and the expectations of continuing exchange rate weakness in the late 1980s. An initial attempt to relieve exchange market pressures was the adjustment of the pegged rate in 1991; when this failed to generate greater calm, the currency was floated. In mid-October 1996, the floating regime was replaced by a peg to the ECU and participation in the ERM. In Jordan, it was a substantial loss of reserves that led the central bank to shift from daily exchange rate fixing to a floating exchange rate regime in the second half of the 1980s. The dinar depreciated strongly and a two-tier exchange rate regime needed to be introduced for a number of months. Corrective policies subsequently enabled the country to a single, pegged exchange rate regime. Initially, the peg was against a basket of five currencies (see Table 6). Since December 1995, the dinar has been pegged to the US dollar only.

[11] For simplicity, the exchange rate regimes in Table 6 have been identified as pegged or floating. The actual regimes, however, tend to fall somewhere between these extremes. Officially, all fixed exchange rate regimes involve pegs against a basket or a composite currency (such as the SDR or the ECU). In practice some flexibility exists: in Finland, Ireland and Portugal, large bands currently exist around the currencies' central ECU rates (although Ireland tries to respect the old, narrower ERM bands), and in Iceland a ±6% band around the central basket peg was introduced in mid-September 1995. In Qatar, the currency is officially pegged to the SDR, but the main exchange rate target is to stabilise its dollar exchange rate, thus necessitating periodic adjustments in the SDR peg. In Jordan, up until the end of 1995, implicit dollar stability seemed to be given greater weight than maintaining the official basket peg; since then this policy has been formalised (see the footnote above). In Malta, keeping the exchange rate at a competitive level is an important consideration alongside the official policy of pegging the domestic currency to a basket of foreign currencies. Similarly, most floating currency regimes contain a fair degree of management. Turkey and Uruguay assign an important role to (expected or targeted) inflation differentials in guiding the rate of depreciation of their currencies. Preserving a reasonable degree of stability against the US dollar has at times been an important consideration in the floating exchange rate regimes of Egypt, Jamaica, Sri Lanka and Taiwan, as has been that against the Deutsche mark in the case of Slovenia.

Table 6

External convertibility and exchange rate regimes

	IMF Art. VIII status: year accepted	Capital account restrictions	Exchange rate regime and variability *(coefficient of variation of selected exchange rates, Jan. 1995–June 1996)*[1]	Exchange market organisation
Botswana	Not yet accepted	Capital inflows in general allowed but subject to some (funding or ownership) restrictions Restrictions on resident foreign investments eased in late 1994	Pegged to a basket comprising the SDR and major trading partner currencies *(US$: 8.0%, SDR: 6.2%)*	Daily fixing
Egypt	Not yet accepted	...	Floating *(US$: 0.1%)*	Continuous transactions among banks and non-bank dealers
Finland	1979	None since 1991	Floating between Sept. 1992 and Oct. 1996[2] *(US$: 4.6%; DM: 1.8%)*	Continuous interbank transactions
Iceland	1983	None since 1995	Pegged to a basket comprising ECU (76%), US dollar (18%) and yen (6%) with ± 2.25% band[3] *(US$: 2.6%; ECU: 0.6%)*	Daily fixing and continuous interbank transactions
Ireland	1961	None since 1993	ERM participation *(US$: 1.0%; ECU: 1.4%)*	Continuous interbank transactions
Jamaica	1963	None since 1991	Floating *(US$: 7.8%)*	Continuous interbank transactions
Jordan	1995	Capital inflows (except for ceilings on foreign ownership of domestic assets) are not restricted; outflows by residents subject to extensive restrictions and approval	Pegged to a trade-weighted basket comprising the five SDR constituting currencies Implicit dollar stability is targeted *(US$: 1.1%; SDR: 2.4%)*	Daily fixing

Table 6 (cont.)

External convertibility and exchange rate regimes

	IMF Art. VIII status: year accepted	Capital account restrictions	Exchange rate regime and variability *(coefficient of variation of selected exchange rates, Jan. 1995–June 1996)*[1]	Exchange market organisation
Malta	1994	Very few limits on non-residents' participation in local financial markets. Residents' foreign investments limited	Pegged to a basket comprising ECU (65%), sterling (12%) and US dollar (23%) Real exchange rate stability is targeted *(US$: 1.9%; ECU: 0.9%)*	Continuous central bank operations
Portugal	1988	None since 1992	ERM participation *(US$: 2.6%; ECU: 0.4%)*	Continuous interbank transactions
Qatar	1973	None	Officially pegged to the SDR A de facto dollar peg is pursued *(US$: 0.0%; SDR: 3.2%)*	Continuous interbank transactions
Slovenia	1995	Extensive restrictions on foreign exchange retention and capital outflows by resident juridicial entities	Floating *(US$: 6.9%; DM: 3.8%)*	Continuous interbank and intercompany transactions
Sri Lanka	1994	Only a few selective controls remain in force	Floating *(US$: 3.7%)*	Daily fixing
Taiwan	–[4]	Some restrictions on non-resident portfolio investment	Floating *(US$: 2.7%)*	Continuous interbank transactions

Table 6 (cont.)

External convertibility and exchange rate regimes

	IMF Art. VIII satus: year accepted	Capital account restrictions	Exchange rate regime and variability *(coefficient of variation of selected exchange rates, Jan. 1995–June 1996)*[1]	Exchange market organisation
Turkey	1990	Foreign direct investment subject to licence/permission. Direct investment abroad subject to ceiling. Resident and non-resident portfolio investment free if carried out by authorised financial institutions	Floating Expected/targeted inflation differential guides rate of depreciation *(US$: 25.1%; ECU: 23.1%; real US$[5]: 4.3%)*	Continuous market transactions brokered by the central bank
Uruguay	1980	None since 1974	Floating within a 7% band Expected/targeted inflation differential guides rate of depreciation *(US$: 10.4%; real US$[4]: 1.3%)*	Daily fixing

[1] Exchange rate regime applicable as of June 1996; volatility calculated on the basis of end-of-month exchange rates. [2] As of 14th October 1996, the Finnish markka participates in the ERM. [3] The band was widened to ± 6% on 10th September 1995, and the currencies of Canada, Finland, Norway, Sweden and Switzerland were added to the (reweighted) currency basket. [4] Current account transactions are free of all exchange controls. [5] Nominal US$ exchange rate index deflated by the index of the US domestic inflation differential.

possibly causing a form of "Dutch disease" and hindering the greater diversification of the economy. While it is generally accepted that faster-than-average growth of productivity in the tradable sector has to be reflected in real appreciation, it is more difficult to know *how far and how fast* to appreciate in economies that are rapidly changing. In inflation-prone countries, using the exchange rate as a nominal anchor can help to create a credibly-stable financial environment that domestic macro-economic policies alone could bring about only over a much longer period.

The relative weight attached to maintaining competitiveness, on the one hand, and lowering inflation, on the other, will depend on many factors including the country's initial position. How these two conflicting objectives are balanced will have some bearing on the *definition of a currency basket* against which a currency is to be fixed. An anti-inflation orientation can be expressed by assigning weights to low-inflation countries that exceed their trade share.

One practical problem, however, is that such an assignment implies an uncertain cost in terms of competitiveness loss because it will depend in part on the development of bilateral exchange rates between third countries. For example, the real effective appreciation will be larger when major high-inflation trading partners are depreciating rapidly in real terms vis-à-vis low-inflation partners. This was an important consideration in Europe during 1993–95, when several currencies fell much more sharply against the Deutsche mark than inflation differentials would have indicated. With an unchanged peg, this would lead to a much greater loss in competitiveness than originally intended.

The use of trade weights is also often complicated by the fact that export and import weights can differ markedly: as import price developments have a greater impact on inflation than export price developments, this also has some bearing on the inflation/competitiveness dilemma. Another complication in the choice of currency basket is that the weights of the key currencies (usually the dollar and the Deutsche mark) are greater in capital movements than they are in trade. This can introduce an element of speculative instability into capital flows whereby expectations about the exchange rate of the dollar against the other currencies in the basket can affect capital flows – without any change in domestic conditions. A problem of a similar nature can arise when the currency denomination of a trade-weighted basket is quite different from that of a

country's external debt. Large swings in the cross rates of the major international currencies, as happened recently with respect to the dollar-yen rate, can then leave a country's trade competitiveness relatively unchanged, while having a significant impact on its external debt.

Once countries move from the quotation of an exchange rate at a single fixed rate, the choice of exchange rate band becomes important. A number of countries apply rather wide and adjustable bands around the central rate in order to preserve to some extent the autonomy of domestic monetary policy. Moreover, there has been some tendency to widen bands in recent years, possibly motivated by the desire to limit the need for the central bank to intervene in the market and so deepen inter-bank markets for foreign exchange. The existence of bands can have a particularly large effect on short-term flows, when the investment horizon is such that even rather modest movements in the spot exchange rate have a major impact on annualised expected returns. Although wider bands have the drawback of signalling to financial markets only lukewarm official commitment to a particular exchange rate, maintaining a relatively wide band may well suffice to assure economic agents of no return to high inflation.

Not all exchange rate bands are published. Many countries in effect operate bands without publicly acknowledging they do so. Moreover, as in Ireland, official action is often guided by confidential bands that are much narrower than the published ones. By not having a public limit to defend, a central bank may enjoy greater flexibility in its day-to-day intervention operations. Also being forced out of unpublished bands by extreme pressure may be rather less damaging for central bank credibility.

Monetary policy: monetary aggregates and short-term interest rates

As Table 7 shows, all countries under review consider price stability as one of the main, if not the sole, final objective of monetary policy. External stability is also given prime importance: in many cases it implies achieving a viable or equilibrium position of the balance of payments (as in Sri Lanka and Qatar), in others it refers to external stability (as in Slovenia), in Jordan it includes the realisation of currency convertibility. Growth and employment also feature prominently among the final objectives of monetary policy in Egypt, Jordan, Malta, Qatar, Sri Lanka and Taiwan.

Table 7
Ultimate objectives of monetary policy

	Price stability	Growth or Employment	External stability, balance-of-payments equilibrium	Payment system/systemic stability
Botswana . .	X			
Egypt	X	X		
Finland	X			X
Iceland	X			X
Ireland	X			
Jamaica . . .	X			
Jordan	X	X	X*	
Malta	X	X	X	
Portugal . . .	X			
Qatar	X	X	X	X
Slovenia . . .	X		X	
Sri Lanka . .	X	X	X	
Taiwan	X	X	X	X
Turkey	X			
Uruguay . . .	X		X	X

* Achieving convertibility.

The choice of intermediate target(s) of monetary policy is quite varied (see Table 8). For the reasons discussed above, the exchange rate is a major intermediate target for monetary policy in many countries, and its importance tends to grow as the financial system becomes more liberal and open. Iceland, Ireland and Portugal in particular consider the exchange rate as the main (if not sole) indicator of the stance of monetary policy. But even when the exchange rate is floating, movements in the rate can provide some indication of monetary conditions.

The issue of the usefulness of *quantitative aggregates of money* or of credit is more controversial. At present, no industrial country central bank attempts to control any monetary aggregate on a short-term (e.g. month-to-month) basis. Because money demand depends on interest rates only with a lag, an attempt to gear interest rates to keeping the chosen monetary aggregate on target month-by-month would fail – the classic problem of instrument instability. Moreover, in an environment of

Table 8

Intermediate targets of monetary policy

	Exchange rate	Interest rate	Monetary or credit aggregates	Other
Botswana . . .		X[1]	X	
Egypt	X	X[1]	X	
Finland[2]				
Iceland	X			
Ireland	X			
Jamaica	X		X	
Jordan			X	
Malta	X		X	X[3]
Portugal	X			
Qatar		X		
Slovenia			X	
Sri Lanka . . .	X	X	X	
Taiwan			X	
Turkey	X		X	
Uruguay	X			

[1] In real terms. [2] Finland does not pursue intermediate targets but monitors a range of intermediate indicators, including the exchange rate, interest rate, money aggregates, expectations and real sector variables. [3] Real sector variables.

financial market liberalisation, the instability of the money demand function is likely to increase, reducing the usefulness of monetary aggregates as intermediate targets. Nevertheless, several industrial country central banks announce targets for monetary aggregates, regarding them as providing useful medium-term discipline for policy, even if such targets are rarely taken as binding in the short term. Some also believe that providing the public with information of the authorities' desired range of monetary growth contributes to transparency. The monetary authorities of Jamaica, Malta, Sri Lanka and Taiwan in general subscribe to such an approach. In Taiwan, for instance, a range for the growth of M_2 is announced at the beginning of each year that is broad enough to leave room for pursuing other possible targets; the range stayed at 10–15% between 1990 and 1995 before being revised downward at the beginning of 1996. Of the countries under review, only Slovenia adheres to a monthly target for

narrow money. Other central banks find monetary aggregate targets of little informational use in present circumstances.[12]

An additional dimension of this issue for developing countries is the use made of aggregates in defining the conditions underlying IMF programmes. It has been argued that such programmes require an explicit benchmark for some monetary aggregate, especially in the absence of a clear exchange rate anchor. Although IMF practice is pragmatic in this area, the current trend is to place most emphasis on aggregates defined at the level of the central bank rather than of the banking system more broadly. Reserve money is one typical domestic target, often supported by a target for the central bank's net foreign asset position. Jamaica, Jordan, Slovenia, Sri Lanka, Taiwan and Turkey all use reserve money as an operating target. This focus on the central bank's balance sheet has the great advantage of being under the more direct control of the authorities; moreover, newly-emerging instruments of indirect monetary control (e.g. Treasury bills) provide ideal vehicles for central banks to attain such targets.

Yet the link between such narrow aggregates and broader monetary and credit developments (and, a fortiori, aggregate demand) is uncertain. It is perhaps particularly uncertain in present circumstances. First, the volatility of capital inflows may spill over onto domestic bank credit. Secondly, deregulation itself creates some uncertainty about the link between central bank credit and aggregate credit. The conclusion that seems to emerge is that a pragmatic attitude continues to be needed on this issue and that any target based on central bank balance-sheet items needs to be supported by other targets.

For most countries, the key operating variable is short-term interest rates – used by the majority of the countries under review (see Table 9). An important policy issue that arises concerns how tightly a central bank should seek to determine short-term interest rates, a crucial issue for the development of interbank markets.[13] A number of central banks have devised techniques which allow, over short periods of time and in response to actual conditions and expectations, the market itself to

[12] A number of countries do not make use of any intermediate targets of monetary policy. Such is the case in Finland where an ultimate inflation target is announced and a range of variables, financial as well as real, relating to inflation performance is monitored.

[13] The degree of central bank control over interest rates obviously also depends in part on the policy target, the degree of independence and the accountability of the central bank.

Table 9
Operating targets of monetary policy

	Exchange rate	Short-term interest rate	Reserve money	Other
Botswana . .		X		
Egypt		X		X[1]
Finland		X		
Iceland		X		
Ireland		X		
Jamaica . . .		X	X	
Jordan			X	
Malta		X		
Portugal . . .		X		
Qatar	X	X		
Slovenia . . .			X	
Sri Lanka . .	X	X	X	
Taiwan			X	
Turkey			X	
Uruguay . . .				X[2]

[1] Total domestic liquidity. [2] Central bank credit and net and gross credit of the state-owned Bank of the Republic.

decide small movements in interest rates. This can have several advantages. It can help to depoliticise the interest rate setting process and thus give the central bank more time to frame its stance as economic conditions unfold. For instance, a rapid spurt in growth or in inflation revealed in monthly statistics can lead the market to push up interest rates; this may allow the central bank some time (e.g. waiting for further statistics) to decide on its own stance.

Developing markets: some practical issues

There is a fundamental need to develop modern financial markets in the domestic economy as development proceeds. And it will often not be possible to rely on the markets provided by other (larger) countries even when currencies are linked through a fixed exchange rate. The early Irish experience with developing domestic financial markets (when Ireland was

still in a monetary union with the United Kingdom) illustrates this: while in theory liquidity needs in Ireland could have been met in London, in practice Irish banks were only marginal customers in the United Kingdom and thus faced relatively high costs. Well-functioning markets at home would not only reduce this inefficiency, but could moreover serve as reliable gauges of developments in the real economy.

But the financial markets needed may often require official help to get started and to survive. One aspect of such official assistance is to ensure that the appropriate price signals are allowed to develop. Another, equally important, aspect is to foster an adequate market infrastructure. Market efficiency and security can be much enhanced by the introduction of effective means of communication for the rapid dissemination of information throughout the market, the establishment of appropriate clearing and settlement procedures, the formulation of adequate prudential regulations and supervisory practices, the establishment of a credit rating system for money market paper and the upgrading of human capital. Sometimes less formal arrangements between market participants can be a useful complement to this infrastructure. The Central Bank of Ireland, for instance, established in 1967 the Dublin Interbank Market Committee, bringing together the main market participants for discussing market practices, proposing steps to facilitate its development and improving communication. Similarly, the Bank of Finland initiated negotiations among banks on market practices that led to a code-of-conduct agreement and the establishment of a committee to monitor and develop market practices in 1990. A final important contribution authorities can make is to boost market confidence by implicitly guaranteeing that they stand ready to intervene should interest-rate volatility become excessive, and to provide liquidity at the end of the day (albeit at penal rates). This does not imply that official market presence is required on a permanent basis: one important lesson is also that the central bank should leave the market to itself once market participants have gained the necessary skills in managing risk. The following paragraphs examine the issues raised by official attempts to foster particular types of markets in practice.

Interbank market

Under highly controlled systems, the development of short-term money markets has often been stifled by the various arrangements in

force to buttress controls. Often interbank markets may be non-existent: commercial banks typically faced fixed interest rates at which they could borrow from, and deposit with, the central bank. Short-term government borrowing was often imposed on captive financial institutions at non-market rates of interest. Finally, inefficient clearing and settlement systems limited the feasibility of urgent short-term transactions among banks.

Another feature of such systems is that commercial banks were often very liquid – holding short-term government paper or large reserves deposited with the central bank. Hence absorbing excess bank liquidity will often be an essential first step for a country moving away from direct controls.

One of the first measures in the introduction of market-oriented mechanisms, therefore, has often been for the central bank to auction, among the commercial banks, the right to deposit excess liquidity with the central bank. One of the main elements of the recent efforts to develop a Maltese money market was the introduction in mid-1994 of weekly term deposit auctions organised by the central bank. It helped to absorb excess liquidity from the banking sector, laid the basis for a market-driven interest rate structure and encouraged liquidity management mainly based on interbank transactions. Similarly, the transition to a liberal financial system in Portugal included an extensive operation launched by the central bank in late 1990 to mop up excess bank liquidity through the exchange of liquid deposits held at the central bank for government bonds. Deposit facilities are also provided by the central banks of Botswana and Finland. In Ireland an absorption facility (via the sale of central bank paper) is in use.

At the same time, the continued provision of central-bank credit facilities can provide a ceiling for interest rates. The terms and conditions on which such credit is supplied by the central bank can exert an important influence on the development of an interbank market. If the spread between the rates on the central bank's deposit and credit facilities is too narrow (as it was in Finland before the central bank introduced greater differentiation between its credit and deposit rates in early 1986), or if access to central bank credit is too easy, then commercial banks will continue to look to the central bank, and not to other banks, in their management of liquidity over time. This will impede the development of an interbank market. This particular problem existed in Iceland in the

early 1980s. As banks relied on central bank credits even though other banks had ample liquidity, a situation arose in which the central bank was providing the financial system with too much liquidity. To overcome this problem, the Central Bank of Iceland allocated binding credit quotas to each bank; by making these quotas negotiable, banks had an incentive to start transacting with each other. On the other hand, an interbank market may not function if participants cannot count on central bank action to ensure adequate liquidity and steady interest rates. The desired relative stability of interest rates may put an implicit limit on the spread between the central bank's deposit and lending rates; several central banks, including the Bank of Finland, have indeed at times narrowed this spread to overcome excessive volatility in interbank rates.

Individual countries' experience with interbank markets is summarised in Table 10. Interbank markets have developed at varying speeds: whereas they have been active in Ireland, Jamaica, Portugal and Slovenia, they are much less important in Botswana, Iceland, Jordan and Uruguay. For a number of countries, a significant impediment to the creation of an interbank market is the small number of key participants in this market. In some cases this may be made more problematic by the particular nature of the borrowing/lending relationship: for instance, the main creditor on the interbank market may be a dominant (often state) bank with the smaller banks being debtors. Such structures may well bias the price-setting process (e.g. Taiwan) or create excessive volatility (e.g. Sri Lanka). In a number of cases the interbank market functions only with close central bank collaboration. In Turkey, for instance, banks' reluctance to deal directly with each other has required the central bank to act as a blind broker in the interbank market.

The maturity on which central banks focus most attention varies from the very short term (e.g. overnight) to the longer end of the money market (e.g. three months). Most interbank markets of countries under review are overnight markets. A preference for acting on the overnight rate often rests on the view that market expectations should be allowed to dominate in the determination of the longer end of the term structure in the money market. On the other hand, a recognition that it is longer-term money rates which have most impact on the economy might suggest action aimed at longer maturities. Institutional arrangements – in particular the formula linking commercial bank deposit and lending rates to money market rates – can play a role too. The range of instruments

Table 10

Indicators of financial market development*

	Interbank market	Money market instruments (as a % of bank deposits)	Main bond market
Botswana . .	Rather inactive	Central bank certificates Limited secondary market	–
Egypt	Overnight to three months Non-bank participation	T-bills (25%) Limited secondary market	Fixed rate domestic currency government bonds Floating rate foreign currency bonds
Finland	Active Overnight to one year	Bank CDs, T-bills, municipality bills, commercial paper (50%) Active secondary market	Public sector bonds
Iceland	Rather inactive Mostly overnight	Mainly T-bills (11–14%)	Indexed government and housing bonds (35% of GDP)
Ireland	Active for maturities up to three months. One-month rate is most important	Exchequer bills and notes (2%)	Domestic and foreign currency government bonds (48% of GDP)
Jamaica . . .	Active overnight market Some non-bank participation	T-bills (17%) and commercial paper Active secondary market	Domestic and foreign currency public sector bonds (26% of GDP)
Jordan	Inactive Overnight to one year	T-bills (2½%) and CDs	
Malta	In development Overnight to one month	T-bills (5.3%)	Fixed rate domestic currency government bonds (25% of GDP)

Table 10 (cont.)

Indicators of financial market development*

	Interbank market	Money market instruments (as a % of bank deposits)	Main bond market
Portugal . . .	Active Mostly overnight	Mainly T-bills (2%)	Medium to long-term public sector bonds in domestic and foreign currency (70% of GDP)
Qatar	Active Mostly overnight	Introduction of T-bills is being considered	–
Slovenia . . .	Active Mostly overnight	Central bank and commercial bank securities (18%) Limited secondary market	Indexed government bonds (14% of GDP)
Sri Lanka . .	Active Mostly overnight to very short term	T- bills and central bank paper (only primary market)	Fixed rate domestic currency government bonds (24% of GDP)
Taiwan	Active Mostly overnight Some non-bank participation	Commercial bank paper, corporate bills, central bank and commercial bank CDs, Bankers' acceptances, T-bills	Fixed rate domestic currency government bonds (12½% of GDP)
Turkey	Active (brokered by central bank) Partly overnight	T-bills	Floating rate public sector bonds in domestic currency or foreign currency-linked
Uruguay . . .	Rather inactive Mostly overnight	Local and foreign currency T-bills (11%)	Foreign currency floating rate bonds (8% of GDP)

* Data generally refer to 1994.

available to a central bank and the nature of reserve balancing requirements will also exert an influence. One feature worthy of note is that some systems have permitted central banks defending their currency against speculation to increase overnight rates enormously (but for short periods) without much affecting the longer-term money market rate to which key domestic interest rates are linked.

Even when open market operations are established as the main vehicle for major day-to-day adjustments in commercial bank reserves, there may still be a need for discount window or credit facilities to help banks who find themselves short at the end of the day. The arrangements that govern access to such facilities vary considerably from country to country (see the major central bank credit facilities listed in Table 11). If access is subject to quantitative entitlement limits (as it is in Iceland, Ireland, Portugal, Taiwan and Turkey), then the lending rate may be below the rate prevailing in open markets; otherwise the rate has to be set at a penalty rate to prevent excessive use (Botswana, Egypt, Finland, Jamaica, Malta). Some central banks (such as Taiwan) limit access to central bank credit facilities through both a quality limit and penalty interest rates.

It might be noted that arrangements for the clearing and settlement of payments can affect the use banks make of the interbank market. In many less developed markets, commercial banks often cannot predict the net balances of the large number of retail payments until the wholesale money market has closed. In this situation, the institution of next-day settlement for payment orders could enable banks to use interbank operations in the money market on the following morning (rather than rely on the central bank or hold very high reserves).

Treasury bills

For many countries, the development of an interbank market has often gone hand in hand with the issuance of Treasury bills. But views on the desirability of this differ. On the one hand, a large and liquid Treasury bill market has a central position in US money markets. On the other hand, the Deutsche Bundesbank long took the view that the government should finance itself with medium- and long-term securities: an open market in Treasury bills had therefore not developed in Germany.[14]

[14] In order to promote money market development in Germany without complicating the implementation of monetary policy, the Bundesbank indicated its willingness in early 1996 to have the Finance Ministry issue a limited amount of short-term Treasury bills.

Similarly, the absence of significant public-sector deficits has precluded the development of a liquid Treasury bill market in Finland (until the early 1990s), Taiwan and Slovenia.

When government deficits are financed by short-term paper, and a Treasury bill market develops, there are certain advantages for central banks' operating policies. Not only can such paper serve to soak up excess liquidity but it can eventually be used to underpin other market operations such as repos. The latter instrument is particularly flexible because it allows a central bank to engage in short-term liquidity operations that cover a particular period and are reversed. The central bank may often be responsible for the issuance of Treasury bills (or indeed other short-term paper). Table 11 indicates to what extent the central banks in the various countries have made use of money market paper in the conduct of monetary policy. Outright market operations take place in nearly all countries. Although many central banks rely on Treasury bills and other government securities in these market operations, several also issue their own bills – certificates of deposit or central bank securities (Botswana, Finland, Jordan, Sri Lanka, Taiwan); intervention bills (Portugal); domestic currency and foreign currency bills (Slovenia). In many cases, outright operations are combined with reversed operations.

Four general issues are important in the management of new issues of Treasury bills. The first is the method of distribution: in general auctioning mechanisms are seen as the most effective. The second issue is the number of instruments to be offered. The third issue is the frequency of issue. Who should be allowed to participate in the new issue market is the final issue.

Auctions are generally preferred to other distribution mechanisms for new securities issues because of their transparency (see below) and because they introduce market mechanisms that were previously lacking. The modalities of auctions vary considerably. The most liberal solution is for the central bank to auction a pre-announced volume of bills: in this system the interest rate is quite free. However, concern that such a procedure might yield excessive volatility of interest rates has discouraged many central banks from pre-announcing the volume of bills to be sold. This way some discretionary influence over the interest rate that emerges is retained while allowing some interest rate flexibility. A fixed price tender (which the Bank of Finland currently uses) interferes somewhat with the market mechanism: here the supply of bills is allowed to

Table 11
Monetary policy instruments

	Reserve requirements	Market operations	Major credit/ deposit facilities	Direct controls
Botswana .	3¼% on total domestic deposits	Sale of central bank paper	Credit facility (above market rate)	None
Egypt . . .	15% on domestic currency deposits; not remunerated Averaging possible over one-week holding period	Weekly T-bill auctions and repurchase agreements under development	Discount window (above market rate)	None
Finland . .	1 to 2% depending on liquidity of deposit; not remunerated Averaging over one-month holding period to be introduced in October 1996	Volume tenders of central bank one-month CDs; repurchase agreements	Short-term credit facility (above market rate) Short-term deposit facility (below market rate)	None
Iceland . .	4% on demand deposits; 2.5% on time deposits and bond issues; remunerated No averaging	Secondary market sales/ purchases of T-bills, repurchase agreements in T-bills	Discount facilities (subject to quotas, below market rate)	Penalty rates on overdue loans set by the central bank
Ireland . .	3% of "relevant resources" less holdings of coins and notes; remunerated No averaging	Repurchase agreements in government securities; Foreign exchange swaps	Short-term credit facility (subject to quotas)	Understanding with respect to maximum retail lending rates

Table 11 (cont.)

Monetary policy instruments

	Reserve requirements	Market operations	Major credit/ deposit facilities	Direct controls
Jamaica . .	25% of domestic currency prescribed liabilities; not remunerated[1] 20% of foreign currency accounts;[1] remunerated Requirement to be held on a daily basis	(Reverse) repurchase agreements in government paper Transfer of government deposits	Overnight credit facilities (above market rate)	None
Jordan . .	Legal minimum rate of 14% on domestic currency deposits; not remunerated; reserves on foreign currency deposits are remunerated Some limited scope for changing reserves over the holding period	Sale of central bank CDs and Treasury bills Repurchase agreements in central bank CDs	Credit facilities, access to which can be reduced or suspended at central bank's discretion Some privileged credit facilities	None
Malta . . .	5% on total deposit liabilities; remunerated at below market rate Averaging is possible	Repurchase agreement auctions Secondary market transactions in T-bills	Discount facilities (above market rate)	Lending rate ceilings and deposit rate floors; set to disappear in 1996
Portugal .	2% on bank deposits Averaging is possible	Repurchase agreements in government paper and central bank CDs Issue of "Intervention" bills	Several standing facilities, some subject to quotas, others at penalty rates	None

Table 11 (cont.)

Monetary policy instruments

	Reserve requirements	Market operations	Major credit/ deposit facilities	Direct controls
Qatar . . .	19% on demand deposits; not remunerated	None	Discount facilities (current rate of 5.5%)	No restrictions on lending rate; ceiling on deposit rate (1% above discount rate)
Slovenia . .	Differentiated rate (from 1% to 12%); reserves to be partly held in special central bank account; penalty rate for reserve shortfalls Averaging possible over a one-month period	Outright sales and repurchase agreements in central bank foreign exchange bills Issue of "twin", and "warrant" bills	Several credit facilities (Lombard loan, short-term loan, liquidity loans), some subject to quotas (and special eligibility criteria), others at penalty rates "Tolar" bills: standing facility	None[2]
Sri Lanka .	15% on (nearly all) deposits; not remunerated Averaging possible over a one-week holding period	Outright sales and purchases of T-bills; repurchase agreements in T-bills; sale of central bank paper	Short-term refinance facilities (almost discontinued) Limited privileged credit facilities Lender-of-last-resort facilities (limited access)	None
Taiwan . .	Ranging from 7⅔% to 25¼%; partly remunerated at below market rate	Tender of negotiable central bank CDs; purchases of and repurchase agreements in high-quality money market paper	Discount (subject to quantitative limits) and temporary accommodation facilities (at penalty rate when in excess of 10% of required reserves)	None

Table 11 (cont.)

Monetary policy instruments

	Reserve requirements	Market operations	Major credit/ deposit facilities	Direct controls
Turkey . .	8% (domestic currency) and 10% (foreign currency) for deposits above end-March 1994 levels[3]	Outright sales of and repurchase agreements in T-bills and government bonds	Discount and other credit facilities (subject to quotas)	None
Uruguay . .	Ranging from 2 to 10%; not remunerated Local currency deposits: remunerated if requirement exceeds 10%	Purchases of government securities in local and foreign currency	Lender-of-last-resort facilities (limited access and at penalty rates)	Credit ceilings imposed on state banks

[1] Lower ratios apply to merchant banks, Trust companies and building societies. [2] Interbank gentleman's agreement on maximum interest rates on short-term deposits; monitored by the central bank. [3] Differentiated rates apply to the end-March 1994 deposits, depending on currency denomination and maturity of the deposits.

adjust according to demand. In effective terms, however, this may not depart too far from the competitive ideal because tendering can be frequent and because the central bank can adjust the rate from tender to tender in the light of the volume demanded. Least sensitive to market conditions are tap sales at fixed interest rates that can be maintained for prolonged periods of time. One advantage of tap sales is that they can attract small-scale retail investors (e.g. households), thus significantly broadening the investor base. In practice, therefore, central banks or governments usually employ a mixture of these techniques. For instance, tap sales may be made available at an interest rate that is related to levels prevailing in a preceding auction.

The choice of auction type is also an important practical issue. Although the academic literature on the subject has not come up with very general conclusions, it does contain some useful insights. A simple taxonomy of auction types is given in Table 12. One particularly important consideration in the theory of auctions is the so-called "winner's curse". This is that winning bidders will realise that their assessment of the value of the good exceeded that of all other bidders and may, therefore, exceed its resale value. Because this creates the risk of a subsequent loss in the case of resale in the secondary market, rational bidders will attempt to shade down their bids. An important result of the literature on auctions is that the degree of this downward shading will depend on the specific auction format employed. In particular, the winner's curse is most marked in discriminatory or multiple-price auctions because successful bidders are held to the price they bid (not the lower price that clears the markets) and are thus obliged to pay the full amount of their "over-valuation". Recognition of this risk lowers the bidder's demand curve. Although disentangling the various influences in economic research has proved to be difficult, there is some evidence that uniform-price auctions of government securities lead to higher prices (lower interest rates) as the theory of the "winner's curse" would suggest. An additional argument in favour of uniform price auctions is that the single price that emerges can provide a very clear and precise signal about money market conditions and central bank intentions – which multiple prices must inevitably blur.[15]

[15] One way to increase the information content of multiple prices would be to derive a reference rate, calculated as the weighted average of the bids and offers accepted in tenders. When holding variable-rate tenders, the Bank of Finland followed this practice for determining its official tender rate.

Table 12
A taxonomy of auctions

	Uniform price (i.e. bidders pay uniform price that exhausts whole issue)	Discriminatory price (i.e. successful bidders pay their individual bid)
Sealed bids (bids made privately)	Used for some government securities markets	Most Treasury bill auctions fall into this category
	Also called "second price" auctions	Also called "discriminatory price" or "first price" auctions
Open-outcry (bids made in public)		

However, the choice between the two methods will also depend in practice on the assessment of the different possibilities for collusion under the various systems. Some have argued that multiple-price auctions provide greater incentives to collude – by pooling bids, bidders can reduce the risk of overbidding. Others have argued that collusion can be more easily enforced in a uniform-price auction. It is perhaps for this reason that most Treasury bill auctions are of the discriminatory type. It remains an open question whether and how effective anti-collusive safeguards could be developed to allow the greater use of uniform-price auctions which may hold out the prospect of allowing governments to finance debt issues at lower cost. Possible safeguards include limiting each participant's share in the volume of paper offered.

A second general issue is the *number and type of instruments to offer.* Some central banks have offered instruments of various maturities ranging from overnight to one-year. Sometimes the intention is to control the short end of the maturity spectrum. In some instances, a desire to develop a broad retail market (or wider wholesale market) has been a significant motive. For instance, Jamaica attempted to diversify the Treasury bill market: its central bank has been responsible for extending the maturity profile of Treasury bills, increasing the frequency of auctions and offering a number of options on each auction date. However, too many instruments can blur any message a central bank will want to send to the market. Moreover, an excessive proliferation of maturities risks creating

markets that are too thin to sustain further development, notably in the secondary market. The issuance of few maturities would oblige institutions to seek intermediate maturities in the secondary market. Lack of liquidity, or too complicated instruments, runs the risk of scaring off foreign investors who may then demand the corresponding risk premium. The latter arguments weighed heavily in the decision of the monetary authorities in Iceland to standardise the issues of Treasury bills which they started auctioning in the early 1990s. Prior to that, Treasury bills were sold on tap at pre-set prices and were tailor-made in terms of amount as well as maturity for the investor. These features severely limited their marketability.

Decisions on the type of instrument are likely to be constrained by what is available – for example, by the size of government borrowing. Central bank bills have assumed importance in countries with low or irregular government deficits. In Taiwan, central bank bills are issued in a wide range of maturities (up to 3 years). An active secondary market has also developed. Where there is already an adequate supply of Treasury bills, however, the additional issuance of central bank bills would seem to constitute an unnecessary proliferation of instruments. Indeed, in Jamaica the issue of central bank paper was recently discontinued. However, if the Treasury refuses to accept market interest rates in its borrowing, the issuance of central bank paper can help the central bank maintain its influence over the setting of short-term interest rates in the market.

The nature of instruments offered does not of course directly constrain a central bank's short-term liquidity operations because repurchase agreements can leave the central bank to decide on the time and duration of its action irrespective of the maturity of the underlying security. The central bank also has the freedom to decide which assets are to be regarded as eligible in the repurchase agreements with specific institutions.

A third general issue is the *frequency of issue*. Generally issues are normally spaced at regular intervals (though not daily) so that the amount can pass a certain threshold to facilitate trading and establish a short-term rate that can serve as a benchmark in other money market segments. In some countries, this is complemented by arrangements that allow financial institutions to decide when – usually over the following week – to take up the securities acquired at tender. This gives the institutions somewhat more flexibility in their liquidity planning.

Although Treasury bills exist in most countries under review here, the market is often rather underdeveloped: secondary markets in particular are not very active (see Table 10 for a summary of the main features of the markets for Treasury Bills and other short-term paper in the countries under review).[16] One reason for an inactive secondary market is sometimes the existence of favourable rediscounting facilities at the central banks: such facilities assure commercial banks of the liquidity of Treasury bills (and so increase demand) but they remove important potential players in secondary markets.

In order to sustain an adequate secondary market, the central bank may itself have to act as a market-maker for key securities. However, as experienced at times by the Central Bank of Malta and the Central Bank of Iceland in recent years, acting as a market-maker may well conflict with a central bank's monetary policy role. To entice market-makers from the private sector, a classic technique is to make them exclusive underwriters for the issuance of government securities with the requirement that they make an effective and open secondary market. In some cases, it may be desirable to grant further (possibly temporary) privileges to certain institutions in order to foster their development as market-makers – perhaps in order to ensure that the activity is not dominated by too few institutions.

Finally, there is the issue of *who should be allowed to participate*. Allowing the participation of a wide range of non-banks in auctions, for instance, can deepen the market, and prevent it from being dominated by a few large banks, and can serve to subject banks to greater competitive pressure. Some countries have made use of specialist money-market brokers or market-makers to widen the number of counterparties. In Sri Lanka, primary dealers were appointed in 1992 to develop the Treasury bill market. Only primary dealers are currently allowed to bid in the weekly auctions. In Finland, the Ministry of Finance, the State Treasury Office and the biggest banks reached a primary dealer agreement in 1992. The agreement allowed for new entrants, and a number of securities houses and foreign institutions (operating from abroad) have indeed joined the agreement since. Jamaica appointed primary dealers in April 1994 whose tasks included the provision of underwriting support for new

[16] In the case of Iceland, an important reason for the late development of its Treasury bill market was cheap and/or unlimited access of the Treasury to central bank credit. As long as this source of funding was not curtailed or cut off, the government had little incentive to seek financing through the issue of market-priced bills.

government security issues, the promotion of a liquid market in these securities and the role of intermediary for central bank open market operations.

Foreign exchange market

An effective organisation and infrastructure of the foreign exchange market is essential for modern financial markets. At the earliest stage of development, foreign exchange operations are frequently subject to extensive controls and are largely centralised at the central bank. There is often a parallel market. Modernising the foreign exchange market in such circumstances will necessitate not only the progressive removal of restrictions but also the setting-up of new procedures and structures for allocating foreign exchange. In many instances, the exchange rate may have to become more flexible.

With weak institutional structures and rudimentary payments arrangements, a system of regularly auctioning foreign exchange has frequently been used. Especially when surrender requirements (i.e. the compulsory surrender of foreign exchange to the central bank) are high and auctions transparent, this system can lead to exchange rates that shadow market conditions. An alternative procedure that may be more effective when surrender requirements are limited is the daily exchange rate "fixing", where the central bank and commercial banks balance the supply of, and demand for, foreign currencies (Botswana, Jordan, Sri Lanka). Fixing sessions attended by commercial banks as from late 1987 (which lasted until about four years later when an interbank market in foreign exchange made fixing sessions dispensable) were considered an important step towards the liberalisation of the foreign exchange market in Portugal. When foreign exchange markets are thin, there is advantage to concentrating transactions (including those expected during the remainder of the day) as far as possible at the moment of "fixing". Under such arrangements, the central bank is often on one side of the bulk of transactions – especially when the central bank maintains a narrow buy/sell spread. Transactions purely among commercial banks are likely to be few, even when such transactions are permitted.

As the volume of business grows – typically under the impetus of significant liberalisation of the exchange and trade system – transactions costs (and the scope for administrative interference), however, can be

reduced by the development of an interbank market in foreign exchange in which commercial banks can offset their surpluses and shortages largely among themselves without relying on the central bank. Even when Ireland was in a monetary union with the United Kingdom, it was found that relatively small deals through London were expensive: by bundling spot foreign exchange deals together (i.e. acting as a wholesale trader with no margin), the Central Bank could cut costs. Subsequently, the benefits of encouraging domestic interbank dealing in foreign exchange were recognised and the market was actively promoted by the Central Bank of Ireland. Indeed, some degree of market-making by the central bank could overcome commercial banks' mutual distrust. Other central bank initiatives to hasten the development of the interbank market could include the gradual widening of the spread between the central bank's bid and offer rates (or the absence of any public quotations on the part of the central bank). This measure, together with a reduction in the number of currencies used for intervention and the issue of forward rate quotations based on interest rate differentials, was taken most recently in Malta.

But even as the central bank's involvement becomes less direct, its continued presence remains important. Fostering the development of these markets in which large risks can be run, will require the introduction of appropriate prudential regulations and supervision. Central bank involvement may furthermore consist of close monitoring of market developments and ensuring market transparency (e.g. by promoting the wide distribution of relevant information so that it does not become the monopoly of a few market participants to exploit). It perhaps might include regular intervention that seeks to smooth excessive exchange rate movements or familiarises commercial banks with central bank sales and purchases in circumstances other than market turmoil. Interbank markets in foreign exchange benefit from a large number of participants and the adoption of codes of conduct, e.g. the commitment to trade at quoted prices. There are several ways a central bank might help make infrastructural improvements. Parallel to the Dublin Interbank Market Committee, the Central Bank of Ireland, for instance, established and chaired a Foreign Exchange Market Committee that looked into market standards and ensured good communications. In many ways, moreover, the Central Bank acted as a sort of nursery school for the provision of knowledgeable and experienced foreign exchange dealers for the new market.

Although the existence of only a few banks is not an impediment to the development of interbank foreign exchange markets as long as there is a reasonable degree of liberalisation of the exchange and trade system, the licensing of new market participants can improve the operational efficiency of these markets. Foreign bank participation has in many instances acted as a major catalyst to foreign exchange market development. Allowing the entry of foreign banks to the foreign exchange market stimulated competition and narrowed bid/offer spreads in Finland. In Malta, a foreign bank was urged to set up as a domestic bank (rather than as an offshore bank) to vitalise the foreign exchange market. Joint ventures with major foreign banks were allowed in Egypt to deal in foreign exchange on the same basis as any other domestic bank. Foreign banks were welcomed in Jordan for their contribution to increasing competition, knowledge and communication infrastructure. Foreign bank participation in Sri Lanka similarly led to significant technological improvements, as well as to the promotion of new services (such as forward exchange contracts) in the foreign exchange market. Foreign bank participation in Iceland's market, although currently still absent, was welcomed for its potential contribution to competition and know-how.

When the foreign exchange market develops alongside domestic money markets, it will become possible to trade on the short-term interest rate differentials across currencies, favouring the development of forward exchange markets. With further participation and market deepening, foreign exchange swaps can be used as a means for liquidity management. A number of central banks (such as Ireland) have on occasion used such swap operations, often on an off-market basis.

Capital markets

In most countries, the bond market is among the last markets to develop – often because of uncertainty about future inflation prospects and strict regulation of interest rates.[17] As shown in Table 13, only in the more developed European countries do government bond markets reach a significant size relative to the economy and are bonds traded fairly regularly (although trading might be limited, as in Portugal, to a few particular

[17] In Iceland, inflation uncertainty was dealt with through extensive indexation. Partly as a result, the bond market was among the first financial markets to develop.

Table 13
Bond market indicators[1]

	Stock of government bonds as a % of GDP	Share of government bonds held by banks, %	Annual turnover ratio, %	Stock of corporate bonds as a % of GDP
Egypt	30.4	..	0.01	..
Finland	50.0	33.0	530.0	6.0
Iceland	18.0	16.0	17.0	..
Ireland	48.0	23.5	550.0	..
Jamaica	25.9	..		..
Jordan	0.3	9.7	0.6	..
Malta	25.2	56.3	9.0	0.0
Portugal	69.6	..	150.0	..
Slovenia	14.0	..	67.0	..
Sri Lanka	23.8	18.1		..
Taiwan	12.5	41.4	1840.1	1.1
Turkey	6.0	73.0[2]	670.0	..
Uruguay	8.0	21.3	11.6	..

[1] 1994 except for Malta and Uruguay, where data refer to 1995. [2] Share of government bonds bought by banks in 1993.

issues). The market for corporate bonds is very thin or non-existent in all countries under review.

However, the absence of a bond market can mean that newly-developing securities markets are far too short-term, becoming the focal point of economic shocks that otherwise might have been spread across assets of various maturities. Often the financial sector remains too liquid. Moreover, as bond (and equity) markets can help to strengthen the financial structure of non-financial enterprises, they may indirectly contribute to greater solvency of the financial sector. Many countries have already developed – all probably should develop in the interests of promoting increased saving – financial institutions such as insurance and pension companies that cater for long-term saving. In Portugal, for instance, the development of diversified non-bank financial institutions has been stimulated by tax incentives. Government bonds are natural assets for such institutions' balance sheets.

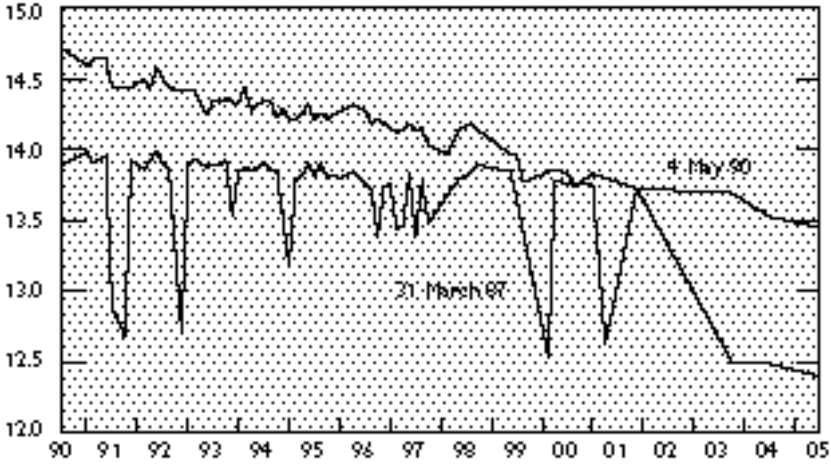
Efforts to develop a bond market in difficult conditions have included the use of index-linked or floating rate and foreign-currency denominated bonds. A number of countries under review have issued *index-linked bonds* (Iceland, Turkey – summarised in Table 10). There is much to be said on diversification grounds for governments that already issue nominal bonds adding indexed bonds to the financial instruments made available to the market. They provide creditors with an insurance against adverse inflation risk and thus can lower borrowing costs; in addition, they provide an indicator – among others – of inflation or exchange rate expectations, and this can be useful input in the setting of monetary policy. However, there are complications. In some cases, the index-linked provisions (and the associated tax provisions) can be more difficult to understand, and this may inhibit investor (especially foreign investor) interest (Iceland). Also an exclusive reliance on indexed bonds will force commercial banks, holding bonds on the asset side of their balance sheet, to seek to index their liabilities and this may give rise to problems.

Over time a central bank may find itself facing a market characterised by a vast array of different bonds – of different maturities, certainly, and often of different characteristics (indexed, floating-rate, tax-treatment, etc.). Such a diversity can make many issues illiquid. One symptom of this can be a jagged yield curve (as the curve labelled 31st March 1987 in Graph 1 illustrates), where downward spikes – i.e. lower yields – correspond to the liquid issues. This implies that the market does not want the less liquid bonds, and exacts a premium for holding them. This gives the central bank opportunity for profit: buying back unpopular bonds and selling more liquid ones not only yields a profit but also makes the secondary market more liquid. Indeed, the Reserve Bank of Australia did successfully exploit such opportunities for profit for many months before the market woke up to what was going on: once this happened, the yield curve became more smooth (see the graph). In Ireland, too, a shift from a large amount of small issues to a limited number of large-volume, more liquid issues took place; in this instance the shift was conditioned by the rapidly rising foreign holdings of Irish government bonds. In much the same vein, the regularisation of the timing of issuing government bonds in Taiwan is meant to develop the depth of the primary and secondary bond market.

In many cases, a comprehensive approach to capital market development, covering the development of the bond market as well as that of the

Graph 1

Australian Treasury bond yield curve



Source: Stephen Grenville, "Building financial institutions for a market-based monetary policy", in Gerard Caprio Jr. and Patrick Honohan, eds. *Monetary policy instruments for developing countries* (World Bank, Washington, D.C., 1991).

equity market, has proved to be worthwhile. Many standards of good practice (e.g. accounting standards), elements of institutional infrastructure (e.g. the stock exchange, brokers and dealers) and regulatory requirements (e.g. rules against insider-trading, listing requirements) can be shared between the various segments of the capital market. Moreover, the functioning of one market is likely to benefit from the existence of the other: an equity market in which many enterprises participate would facilitate the development of a corporate bond market as well as the creation of new debt instruments (such as convertible bonds and bonds with warrants), while a well-functioning and liquid bond market would help to reduce the speculative activity in the equity markets of a number of countries without well-developed markets for alternative longer-term instruments.

Many central banks have thus been not only instrumental in the development of a bond market but have also contributed to the establishment, organisation and regulation of an equity market. An illustration of this can be found in Iceland where the central bank initiated a number of studies

on the country's equity market in the late 1980s and early 1990s. Many of the studies' recommendations (in particular that of allowing an initial period during which the listing of shares was made more easy) were adopted and helped to boost market activity. Table 14, however, shows that these initiatives were still too recent to produce sizable growth: Iceland's equity market continues to be very small, a characteristic shared with several other countries under review. By contrast, stock market capitalisation is high in Jordan and Taiwan.[18] But whereas in the former country shares are hardly traded, turnover in Taiwan has been very high, inflated at times by speculative behaviour.

Markets in derivative instruments

A salient feature of the process of financial deepening in major industrial countries in recent years has been the rapid growth of derivative instruments and markets. Of the building blocks of the derivatives markets – forwards, futures, swaps and options – forward exchange rate contracts typically emerge first as those engaged in foreign trade seek cover against exchange rate changes. The development of a forward exchange market is sometimes associated with the existence of liquid and diversified short-term money markets, as well as active interbank markets where open positions can be hedged; it may itself, however, be a spur to the further growth of such markets. In Finland, for instance, the central bank's decision to discontinue the market-making role which it had played in the forward exchange market in the 1970s and early 1980s, was an important catalyst for the emergence of the short-term money market. Deeper short-term markets may in turn provide the basis for the development of organised interest rate futures markets or over-the-counter forward interest rate contracts. The existence of longer-term credit or bond markets would offer scope for introducing swaps and futures contracts on such longer-term paper. Finally, options markets are likely to emerge once financial development and expertise have reached a sufficient level of sophistication.

A number of countries have recently experimented with financial instruments that have dual features, often combining foreign and local

[18] Stock market capitalisation as a percentage of GDP also varies significantly in the major industrial countries: whereas it exceeded 100% in the United Kingdom and the United States in the 1991–94 period, it was less than 30% in Germany and Italy.

Table 14
Equity market indicators

	Stock index value, 1993=100, US$ terms	*Date*	Stock market capitalisation as a % of GDP	*Date*	Annual turnover ratio in 1995, %
Botswana .	105	*Dec. 95*	9	*1995*	8
Egypt	156	*Dec. 95*	13	*1995*	11
Finland . . .	221	*Jun. 96*	35	*1995*	46
Iceland . . .	225	*Jun. 96*	18	*Apr. 96*	6
Ireland . . .	171	*Jun. 96*	42	*1995*	58
Jamaica . .	39	*Mar. 96*	30	*1995*	21
Jordan . . .	89	*Jul. 96*	131	*May 96*	11
Malta	..	..	12	*1995*	16
Portugal . .	142	*Jul. 96*	20	*1995*	24
Slovenia . .	80*	*Jul. 96*	2	*1995*	71
Sri Lanka .	68	*Jul. 96*	16	*1995*	9
Taiwan . . .	147	*Jul. 96*	74	*1995*	199
Turkey . . .	102	*Jul. 96*	15	*Jun. 96*	226
Uruguay . .	121	*Dec. 95*	1	*1995*	3

* January 1994=100.

currency elements. This can be particularly useful when confidence in the local currency is not well established. For example, Slovenia has issued a "twin-bill" denominated in tolar and in Deutsche mark; each component bears a distinct interest rate and can be traded on the secondary market. The Bank of Slovenia has also issued a bill with a warrant that gives the holder the right to purchase a new bill at a discount which reflects the gap between the actual inflation rate and the inflation rate expected when the original bill was issued. Finland, Ireland and Taiwan have also seen the development of organised and/or over-the-counter derivative markets. In most other countries, however, derivatives markets are still in their infancy.

The advent of derivative instruments in financial intermediation has consequences for the efficiency of financial markets, as well as an important bearing on the environment in which monetary policy operates. Under normal market conditions, derivatives represent efficient and economical means for unbundling risks and distributing them across those

market participants that are best placed to assume and manage them. The greater ease of adjusting risk exposures which derivatives afford can improve the liquidity of financial markets and can bring together individual market segments. Nevertheless, they may well amplify shocks in the financial system.

In addition, derivative markets will force some adjustments in the way the authorities interpret liquidity conditions and in their implementation of monetary policy. Traditional monetary indicators, on which authorities may have relied in the past, will tend to give blurred messages once derivatives are introduced, given that the latter are likely to change the information content and the speed or extent of adjustment of variables, such as monetary aggregates, exchange rates and interest rates, in ways that are not always predictable. Similarly, the growth of derivatives markets is likely to have a distinct, though again ambiguous, impact on the transmission process of monetary policy. On the other hand, derivatives can be used by the monetary authorities with advantage. For example, they convey new information on market expectations about interest rates, exchange rates or other asset prices. Moreover, they could widen the range of market instruments available to the authorities. In particular, in the area of foreign exchange market intervention, the use of foreign exchange derivatives could enable the authorities to support the domestic currency beyond the level of their international reserves. Yet, as this example itself illustrates, the use of derivatives contains traps for the unwary. More fundamental, perhaps, is the issue of whether robust derivative markets can be developed when markets in the underlying instruments are themselves rather illiquid.

Monetary management in a new environment: residual controls

Direct controls of various kinds continue to be used in a number of developing countries, and remained an important feature of monetary policy up until the mid-1970s in most industrial countries and even up to the mid-1980s in others. Among the main reasons for the historic popularity of controls are their apparent reliability, simplicity and directness. These features make them easy to implement and to explain, both to politicians and to the wider public; much less transparent is the cost of controls,

notably the inefficient and inflexible allocation of resources. The instruments of monetary policy, direct as well as indirect, currently in use in the countries under review are summarised in Table 11.

Moving to a system of monetary control that works through markets by influencing supply and demand conditions (control via so-called "indirect" instruments) as most of the countries under review have done according to Table 11, requires the development of markets. As discussed above, such markets may not emerge naturally and their development faces particular problems in small economies. Small size sets a limit both to the number of actors involved and to the feasible number of transactions in financial markets. One consequence is that markets may be non-competitive and be subject to collusive or at least second-guessing behaviour. A second consequence is that, even where approximately competitive, the financial markets may be particularly thin. In thin markets, prices tend to be more volatile: in the case of money markets this may mean that policy changes or various shocks in the system will lead to unusually large changes in interest rates. Because the transition to monetary control based on interest rates even in large countries endowed with deep and well-established financial markets often led to the much-increased variability of rates, smaller countries with a less well-established financial sector have good reason to be cautious in relying too quickly only on interest rates to implement monetary policy.

In many developing countries, the period of transition in which market-oriented instruments coexist with quantitative constraints may also be quite long. This raises the difficult issue of the appropriate relationship between the two methods of monetary control. Reliance on interest rates to guide policy, once established, may work well in normal conditions. But there may be circumstances in which the temporary resort to classic non-market-clearing methods (e.g. limits to consumer credit; ceilings on lending for real estate investment) can be the most effective solution. Sri Lankan experience suggests that such direct controls can indeed be useful for imposing effective restraint in credit markets as indirect policy measures are at times too slow in bringing about the desired results within a reasonable timeframe. A long transition period may also be motivated by central bank concerns about potential distress in the financial system: such considerations could be viewed as serious enough to override macroeconomic objectives such as low inflation.

What such caution can mean in practice differs according to the specific features of each individual country and according to the stage of development of its financial market. Many countries (e.g. Malta, Portugal) have relaxed interest rate controls only gradually – often to allow financial institutions to be strengthened before exposure to interest rate volatility. By contrast, the deregulation of bank interest rates in Iceland may have been too fast and may have occurred at the wrong phase of the economic cycle; the sharp increase in real interest rates that accompanied the transition from repressed to deregulated markets was accentuated by the sharp cyclical upswing in the economy. An additional reason for caution in the speed of deregulation is that the banks and their supervisors may need time to learn to function in a new environment.

As for direct controls on credit aggregates, at the very early stages of reform some countries have replaced sector-specific with general ceilings. This at least allows banks to decide the allocation of credit within the ceiling and reduces distortions in the sectoral allocation. In other cases, crude sector-specific ceilings have been replaced by rules that limit the speed with which banks change the sectoral distribution of their credit. The experience of a number of industrial countries suggests that the imposition of such speed limits can be wise.[19] A particular problem concerns lending to the personal sector for house purchase or for consumer durable purchase. Both purposes were usually assigned low priority in the old directed-credit systems. Hence the share of personal loans is often sub-optimal at the onset of reform: at prevailing interest rates households want to borrow more and banks want to lend more. But if all banks simultaneously attempt to shift their portfolio towards greater emphasis on personal loans, the macroeconomic consequences can be serious. A bubble can be created in real estate prices; there can also be a sharp, if temporary, drop in the household sector's propensity to save. In Finland, for instance, deregulation led to over-indebtedness in the late 1980s, contributing to the subsequent banking crisis.

As controls on total credit have been relaxed, a common approach has been to put more emphasis on those types of quantitative measures that work through prices. In many cases, reserve requirements were

[19] On the other hand, Finland had only limited success with an attempt to limit the rate of credit expansion in 1989 by imposing supplementary cash reserve requirements on aggressive lenders.

increased as controls were relaxed, putting indirect limits on the volume of loans commercial banks could grant. If reserve requirements are non-remunerated (or remunerated at less than market interest rates), they act as a tax on bank intermediation and thus widen the spread between lending and deposit rates. They may be used to counter the risk of an explosion of bank credit as direct controls are eased. While they are not suitable for short-term liquidity management operations, they can be used by central banks to deal with extreme movements in liquidity (Jamaica, Jordan, Slovenia, Sri Lanka) or, as in the case of Ireland, for compensating seasonal money demand at the end of the year. However, most central banks have moved away from the active reliance on reserve requirements in recent years. When reserve requirements have remained in force, they have typically been made less rigid, usually by the use of "averaging" (i.e. applying the requirement to an average of the commercial bank's balance-sheet position over a certain period of time and not insisting that it be met day by day).[20] Averaging may furthermore help to reduce the volatility of overnight interbank rates. Finland introduced averaging in autumn 1995.

A number of countries have applied *differential reserve requirements*, discriminating among different kinds of liabilities. The maturity of the deposit is used as a basis for differentiation in Finland, Iceland and Slovenia (see Table 11). Another feature used as a basis of discrimination is that of currency of denomination. To discourage capital inflows, or to provide a greater safety margin in the case of withdrawal, some central banks impose higher reserve requirements on foreign-currency deposits than on those denominated in local currency. Other central banks (e.g. Egypt and Jamaica) do the opposite and sometimes remunerate reserve requirements on foreign currency deposits at a higher rate, often to ensure that banks are able to offer attractive interest rates to keep residents' foreign-currency assets at home. To avoid disintermediation, Jamaica and Taiwan also impose reserve requirements on financial institutions other than banks.

[20] Although they are not very effective for purposes of active liquidity management in many countries and are inconsistent with objectives of financial reform or of non-discriminatory treatment of all financial institutions, a low level of reserve requirements could nevertheless play a useful role. If averaging is allowed, interest rate fluctuations tend to be smoother. Moreover, these reserves can serve as collateral for intra-day credit extended by the central bank within the context of its payment and settlement system. Finally, they represent a significant source of central bank revenues.

Capital flows and sterilisation

On liberalisation of exchange control on capital transactions, many countries in the emerging markets have had to cope with heavy inflows of foreign capital. This creates a dilemma for monetary policy. Domestic price stability may be served by allowing currency appreciation to insulate domestic monetary conditions, thus directly and indirectly exerting downward pressure on inflation. But the resultant real appreciation tends to hurt the tradables sector, leading to a widening of the current account deficit. The longer such a deficit persists, the greater is the risk that the build-up of external debt will weaken investor confidence. Attempting to resist currency appreciation by exchange market intervention will help to preserve competitiveness only as long as inflation is kept under control; if not, avoiding nominal appreciation will not prevent a real appreciation. Accumulating official external reserves might also afford protection against a subsequent reversal of external capital flows.

Attempts to mitigate this dilemma by allowing only a *gradual* appreciation of the currency did not work in Taiwan. Although this policy was maintained for at least four years during the second half of the 1980s, it was not very successful, triggering huge inflows of capital that provoked rapid expansion of domestic credit and fuelled speculation in the stock market.

Another approach has been to try to offset the domestic liquidity impact of capital flows through sterilisation operations. The difficulties experienced by monetary authorities in conducting such sterilisation operations have been much discussed. The cost borne by the central bank depends on the scale of the operations and the size of the interest differential vis-à-vis US dollar rates (or the rates in other reserve centres), as well as on the instruments used. Faced with sizable inflows following capital account liberalisation in the 1970s, the Uruguayan authorities attempted to sterilise their impact on the growth of the money supply. These operations, however, entailed a major quasi-fiscal deficit that severely constrained the sterilisation attempts. Large expenses also characterised sterilisation operations in Slovenia and Taiwan in recent years.

A number of countries took offsetting measures in order to obviate the need for intervention and/or sterilisation. Portugal, for instance, when confronted with surging inflows in the late 1980s, offset part of the effect by advancing the repayment of external public debt and by speeding up

the easing of exchange controls on residents. The latter policy of encouraging capital exports was also tried in Taiwan.[21] In addition, many countries have moderated the cost of sterilisation operations by increases in low-interest-bearing reserve requirements: in Slovenia, for instance, a reserve requirement was recently put on short-term credits raised abroad. Adverse effects on banks' profits can be limited by applying marginal requirements to the increase in balance-sheet items closely related to capital inflows. The placement of government, public enterprise or pension fund deposits with the central bank or in securities – instead of with the commercial banks – can also help to sterilise the effect of inflows on bank reserves without putting severe pressure on central bank profits.

Even when monetary policy is geared to interest rate objectives and is implemented mainly through short-term securities repurchase operations, as in many industrial countries, sterilisation tends to preserve an interest rate incentive to inflows. Where policy is geared more to quantitative objectives for monetary and credit aggregates the interest rate impact of sterilisation may depend on the nature of a country's financial structure, for example the range of assets available and the degree of substitutability between them. In some emerging economies, where markets for the paper used in sterilisation operations were thin, the operations may actually have put upward pressure on the interest rates prevailing in these markets. This may have increased the incentive to inflows and, where short-term rates were pushed up by sterilisation, biased the structure of inflows towards the short end.

[21] In the earlier section dealing with the sequencing and speed of reform, a number of other examples were already given of how countries put together (more compulsory) schemes to promote capital outflows in the wake of a surge in inflows.

The Icelandic financial system

Eiríkur Guðnason*

1. General structure of the financial system

(i) The Icelandic financial system

The financial markets in Iceland have been in rapid transition during the last decade. A process of liberalisation and legislative reform has created conditions in which market forces play an increasing role. The Basle standard for rules on capital adequacy of commercial and savings banks was implemented at the beginning of 1993. In connection with the European Economic Area (EEA) Agreement,[1] new legislation was enacted in 1993, including acts governing the operations of commercial and savings banks, other credit institutions, securities transactions, mutual funds and the Iceland Stock Exchange. A new Foreign Exchange Act entered into force in November 1992. The general impact of this legislation has been twofold. First, stricter rules have been adopted to ensure the economic health of banks and other financial institutions, including rules on the minimum capital ratio and exposure to risk. Banking supervision, which is in the hands of the central bank, has been strengthened at the same time. Secondly, the new legislation is a step in the deregulation process that has been under way for some time, with the most important changes being the abolition in 1986 of centralised control over interest rates and the liberalisation of capital movements, which was completed at the beginning of 1995.

With the deregulation of markets, there has been a rapid increase in the issuance of new bonds and other financial instruments. The Government, banks and other financial institutions have become active in this market. Financial institutions have also started to offer public financial services not previously available in Iceland. The relative importance of the

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[1] An agreement between the member countries of the EU and EFTA (excluding Switzerland) on the free movement of goods, services, capital and labour.

Table 1
Gross assets of financial institutions
In billions of krónur, at end of year

	1980	1985	1990	1993	1994	1995	Average annual growth in % 1985–95
Commercial banks . .	5.8	61.8	183.8	214.6	212.4	212.1	13.1
Savings banks	0.7	7.0	32.8	50.1	45.7	52.1	22.3
Savings departments of coops.	0.1	0.7	2.0	2.0	2.2	2.3	12.5
Insurance companies .	0.9	7.0	23.3	38.3	41.6	44.5	20.3
Pension funds	2.1	28.5	128.2	208.8	234.2	262.6	24.8
Investment credit funds	3.1	40.4	151.8	237.2	254.9	268.3	20.8
Leasing companies . .	..	0.1	10.0	13.1	13.2	11.0	60.0
Mutual funds (open-end)	..	0.4	13.6	12.5	17.0	14.8	43.5
Mutual funds (closed-end)	..	..	1.5	1.7	2.4	4.3	78.6*
Memorandum item:							
Credit terms index . . .	*197*	*1337*	*2952*	*3347*	*3384*	*3442*	*9.9*

* 1986–1995.

various institutions making up the financial system in Iceland is shown in Table 1.

Commercial and savings banks (Table 2)

There are four commercial banks in Iceland, of which two are state-owned (Landsbanki Íslands and Búnaðabanki Íslands) and two are privately owned (Íslandsbanki hf. and Sparisjóðabanki Íslands hf.). Three of the commercial banks conduct the full range of traditional banking business. The fourth, Sparisjóðabanki Íslands hf., is owned by the 29 savings banks in Iceland and functions on their behalf as their central banking institution. The savings banks are generally private institutions with local operations and they perform most traditional banking operations. In addition to commercial and savings banks there are two other types of deposit-taking institutions, namely the savings departments of cooperatives (with deposits of I.kr. 2.3 billion at the end of 1995) and the Post Giro

Table 2

Commercial and savings banks' assets, deposits and domestic securities issues

In billions of krónur, at end of 1995

	Total assets	Deposits	Securities issues	Market share in % in terms of deposits
Landsbanki Íslands .	102.0	60.8	10.1	36
Íslandsbanki hf. . . .	54.9	35.9	4.5	22
Búnaðarbanki Íslands	48.1	34.9	1.6	21
Sparisjóðabanki Íslands hf.	7.0	0.0	0.0	0
Savings banks	52.1	34.8	7.6	21
Total	264.1	166.4	23.8	100

(I.kr. 0.5 billion at the end of 1995). Deposit-taking institutions are referred to as Deposit Money Banks (DMBs).

Other specialised banks (Table 3)

There are 13 investment credit funds (ICFs) in Iceland, most of them being public entities. ICFs play an important role in the Icelandic financial system with regard to long-term financing. Three of the ICFs provide housing finance, while others channel credit to the various business sectors of the economy. In recent years, there has been a structural change in the financing of the ICFs. They have increased their public issuance of bonds on the domestic market and reduced the use of foreign funds and borrowing from other financial institutions. The share of bond issuance in their financing at present is 37%, with that of domestic loans 31%, foreign loans 15% and own capital 17%.

Leasing companies

There are three leasing companies in Iceland at present, the first having been established in 1985. Their growth was rapid in the first few years of operation. Growth has since slowed down, mainly because of relatively low investment in Iceland. Recently the leasing companies have diversified their activities to some extent by granting loans in addition to making conventional leasing contracts.

Table 3
Investment credit funds' credits and securities issues
In billions of krónur, at end of 1995

	Credits	Domestic securities issues
State Housing Funds	184.9	84.8
Fisheries Investment Fund	23.4	0.7
Industrial Loan Fund	16.4	4.1
Agricultural Loan Fund	9.8	3.4
Other ICFs	28.7	6.0
Total	263.2	99.0

Institutional investors

There are currently 67 pension funds in Iceland. Their number has decreased in recent years owing to mergers. The funds receive payments from employers and employees and are the most important source of long-term finance in the country. The pension funds invest mainly in bonds issued by the Government and the ICFs, but also in bonds issued by other financial institutions, municipalities and companies and to some extent in shares. They also extend credit to members. Recent changes in foreign exchange regulations opened access for the pension funds to invest in foreign securities.

There are eleven closed-end mutual funds and seven open-end mutual funds in operation in Iceland, none of which existed prior to 1985. The closed-end funds are limited liability companies that are quoted on the Iceland Stock Exchange. The open-end funds are operated in 31 divisions.

There are now 19 insurance companies operating in Iceland. Four of them are life insurance companies and represent only 4% of the total assets of Icelandic insurance companies. One reason for the small share of life insurance is probably the employees' compulsory membership of pension funds. About half of insurance companies' portfolio consists of marketable securities, which make insurance companies fairly big players in the Icelandic securities market. In terms of total assets the two (largest) companies have a market share of more than 50%, which indicates that the other insurance companies are rather small.

The securities market

The market for securities has expanded gradually in Iceland. In 1964 the Government started to issue indexed savings bonds. In the 1970s, a secondary market for these bonds began to develop. The Iceland Stock Exchange commenced operations in 1986. In recent years, there has been an increase in the variety and volume of financial instruments that the Government, municipalities, financial institutions and companies have offered on the market (see Table 4). The bond market has continued to develop, money and equity markets have emerged and Treasury bills, notes and bonds are now auctioned regularly.

Offshore institutions

No incentives are offered to financial institutions to conduct offshore business in Iceland. The measures taken to insulate the domestic market from *illegal* offshore transactions are presumably the same as in neighbouring countries. Money laundering, for example, is forbidden by law and the supervisory body (the Bank Inspectorate of the Central Bank) has made an effort to educate financial sector agents in this respect.

(ii) The central bank

The Central Bank of Iceland was established in 1961. Previously central bank functions were carried out by Landsbanki Íslands, a state-owned commercial bank. The functions of the central bank include the conduct of monetary policy consistent with the goal of maintaining low inflation, the supervision of financial institutions and the management of the country's foreign exchange reserves. Its balance sheet at the end of 1995 is shown in Table 5.

The Bank is an active participant in the domestic money markets, dealing in Treasury bills. The Treasury and several government institutions have their bank accounts with the central bank, which acts as banker, economic adviser and fiscal agent to the Government. Until a few years ago the Treasury had unlimited access to a short-term overdraft facility with the Bank. In June 1992 an agreement on central bank credit accommodation was reached between the Bank and the Minister of Finance, requiring the Treasury to meet its borrowing needs in the financial market. In addition, the Treasury began to sell its bills and bonds at regular auctions conducted by the National Debt Management Agency. As

Table 4

Market capitalisation of selected market securities

In billions of krónur, at end of year

	1988	1990	1991	1992	1993	1994	1995
Government savings bonds	19.7	38.2	46.6	53.2	64.0	72.5	78.0
Treasury bills	0.7	8.1	8.3	15.5	17.5	14.6	15.5
Government notes	..	..	..	..	2.1	5.6	6.6
Bank bonds and bills	8.9	17.5	19.2	20.6	22.7	22.3	23.8
Housing bonds[1]	..	5.8	22.6	37.0	54.7	72.5	84.8
Bonds of other ICFs	1.6	2.3	2.9	3.9	6.6	9.2	14.3
Bonds of other government funds	..	6.8	7.9	5.7	4.2	2.7	2.7
Mutual fund units (open-end)	5.7	13.2	11.1	9.0	12.1	16.2	14.5
Bonds of leasing companies	1.6	2.5	3.3	4.1	5.4	6.1	4.9
Shares[2]	5.5	33.5	40.4	36.2	35.1	45.9	65.3

[1] Housing bonds and State Housing Fund bonds. [2] Market value of shares quoted on the Iceland Stock Exchange and the OTC market.

Table 5

The balance sheet of the central bank at 31st December 1995

In billions of krónur

Assets	60.9	**Liabilities & Capital**	60.9
Foreign-currency-denominated		Foreign-currency-denominated	
External	33.2	External	20.4
Domestic	1.4	Domestic	4.5
Claims on DMBs	*1.2*	*DMBs' deposits*	*1.4*
Claims on ICFs	*0.0*	*ICFs' deposits*	*0.6*
Claims on others	*0.1*	*Public sector deposits*	*2.5*
Local-currency-denominated		Local-currency-denominated	
Claims on DMBs	4.2	DMBs' required deposits	6.3
		DMBs' free deposits	1.7
Claims on ICFs	3.3	Repos to DMBs	0.0
		ICFs' deposits	1.2
Claims on public sector	18.5	Currency	6.0
		Public sector deposits	3.6
Other assets	0.3	Other liabilities	2.2
		Net capital position	15.0

a consequence, yields on Treasuries are no longer decided by the Government but rather by market forces. The central bank conducts active business with commercial and savings banks as lender of last resort, clearing agent for cheques and provider of liquidity. During the last decade banks' direct access to central bank accommodation has been reduced.

(iii) Major changes in commercial banks' balance-sheet items over the last 14 years

Table 6 shows considerable changes in some items of the balance sheet of the commercial banks between 1980 and 1994. As a percentage of GDP, banks' total assets have increased substantially. New items have appeared, such as bonds sold to the public and Treasury bills, while others have disappeared, such as produce loans rediscounted by the central bank. In fact the central bank numbers have decreased considerably in the balance sheet of the commercial banks.

Some items not shown in Table 6 have also been changing. For instance, banks have been quite inventive in creating new types of deposit accounts. The proportion of total credits granted to the public and household sectors has increased, while that of lending to the business sector has decreased. In GDP terms, however, bank loans to the business sector have increased. Loans granted by banks usually carry variable rates of interest.

(iv) Index-linked and foreign currency items in banks' balance sheets

Table 6 shows that foreign-currency-linked assets represent about one-fifth of total assets. The proportion on the liabilities side is quite similar. These percentage shares are virtually unchanged over the period, but measured as a ratio of GDP foreign assets and liabilities have increased somewhat.

Table 6 also shows the shift towards indexation that has taken place in the Icelandic economy, with approximately one-third of the balance sheet being indexed at the end of 1994, compared with almost nil in 1980. This confirms that indexation has played a big role in the financial sector in Iceland. With inflation coming down, an effort is now being made to reduce the use of indexation on bank deposits and short-term instruments.

Table 6
Commercial banks' balance sheet*

At end of year	Billions of krónur 1994	As a % of total assets 1980	1994	As a % of GDP 1980	1994
Assets:					
Cash	0.4	0.4	0.2	0.1	0.1
Treasury bills	1.6	0.0	0.8	0.0	0.4
Central bank	9.2	17.9	4.5	6.4	2.1
of which: required reserves	5.8	13.2	2.8	4.7	1.3
Foreign assets	7.4	2.8	3.6	1.0	1.7
Credit and investment	162.5	70.6	79.0	25.2	37.5
Other assets	24.6	8.3	12.0	3.0	5.7
Total assets	205.7	100.0	100.0	35.7	47.5
of which: foreign-currency-linked	45.4	22.5	22.1	8.1	10.5
indexed	76.9	3.3	37.4	1.2	17.7
Liabilities:					
Total deposits	129.1	55.2	62.8	19.7	29.8
Bonds	16.7	0.0	8.1	0.0	3.8
Central Bank	2.4	17.0	1.2	6.1	0.6
of which: redisc. produce loans	0.0	15.5	0.0	5.5	0.0
Foreign liabilities	31.1	19.2	15.1	6.9	7.2
Other liabilities	12.1	2.1	5.9	0.8	2.8
Capital and reserves	14.3	6.5	7.0	2.3	3.3
Total liabilities & capital	205.7	100.0	100.0	35.7	47.5
of which: foreign-currency-linked	43.2	21.0	21.0	7.5	10.0
indexed	64.8	0.5	31.5	0.2	15.0

* Excluding the savings banks' bank.

(v) The payment and settlement system[2]

The banks, together with the central bank, operate a clearing system through the Banks' Data Centre. The Centre facilitates the clearing of cheques and the flow of payments, including giro payments. The same clearing system functions both as an interbank circuit and as a retail clearing system. The net results from the daily clearing are settled on the participants' current accounts with the central bank the same day. Cross-border payments are carried out almost exclusively via the S.W.I.F.T.

[2] For more information, see the report on Payment Systems in Iceland, BIS, Basle, May 1995, prepared by the Central Bank of Iceland and the Committee on Payment and Settlement Systems of the central banks of the Group of Ten countries.

network and correspondent banking relations. The banks, including the central bank, are all S.W.I.F.T. members connected via the Banks' Data Centre.

2. The general framework of monetary policy

The degree of independence of the Central Bank of Iceland cannot be easily defined.[3] The Bank has independence in setting its own interest rates, but the use of some of its instruments is subject to government consent, the most important being reserve requirements. The Bank pursues its monetary policy by indirect means through market operations, primarily in the money market and the interbank market in foreign exchange. In addition, the Bank has been a market-maker in long-term government bonds, a role it, however, stopped playing in February 1996 (see below). Finally, the Bank acts as the borrowing agent for the Republic of Iceland in the international capital markets.

Current central bank legislation stipulates several, to some extent contradictory, goals for monetary policy. However, the goal of price stability has become through consensus the main objective of monetary policy. In December 1989, the exchange rate of the króna was fixed against a basket of currencies in order to provide a nominal anchor and to ensure disciplined economic policy formulation and implementation. Through careful monetary policy, relatively well-contained fiscal policy and moderate wage behaviour the economy was stabilised and inflation, which for a long time far exceeded the OECD average, fell to low single digits. In fact, by 1994 it had fallen to 1.5%, the lowest rate recorded among the OECD countries. The inflation rate in 1995 was 1.7%, and 1996 should see a similar performance.

A stable exchange rate is the intermediate target of monetary policy. Since 1989 the exchange rate has had to be lowered twice, first in the wake of the turbulence in international currency markets in late 1992,

[3] According to the methodology used by Starck (1992), which is adopted from Swinburne and Castello-Branco (1991), the Central Bank of Iceland ranks between the Bank of Japan and the Bank of England in its degree of independence. The method is based on gauging the following attributes on a certain scale: the mandate of the central bank to formulate and implement monetary policy, its goals, the terms of appointment of its directors and governors, its independence in deciding its own budget and its obligations to report to the Government and the public. The measure is rough and should only be interpreted as giving broad indications.

Table 7

Domestic debt of the Treasury

In billions of krónur, at end of year

	1988	1990	1991	1992	1993	1994	1995
Indexed savings bonds . .	19.7	38.2	46.6	53.2	64.0	71.3	74.2
ECU-linked savings bonds	0.0	0.0	0.0	0.0	0.0	1.1	3.8
Government notes . . .	..	..	..	..	2.1	5.6	6.6
Treasury bills	0.7	8.1	8.3	15.5	17.5	14.6	15.5
Overdraft at the Central bank	9.0	1.5	6.3	0.0	0.0	0.0	0.0
Total	29.4	47.8	61.2	68.7	83.6	92.6	100.1

which led to a significant deterioration in Iceland's terms of trade, and then in mid-1993 in response to a prospective deterioration of the real economy resulting from quite a sharp reduction in allowable fish catches for conservation reasons. Since mid-1993, the exchange rate has fluctuated very modestly around its central rate. In September 1995 the fluctuation band was widened from ± 2.25% to ± 6%.

The main operating targets of monetary policy are short-term interest rates. The instruments used by the Bank are its own interest rates (discount rate, repo rates and money market intervention rates) and the access that banks are granted to central bank financing.

Table 8

Central bank and commercial bank shares in government borrowing

In percentages

Year	Central bank	Commercial banks	Other	Total
1980	45	11	44	100
1985	24	5	71	100
1991	10	23	67	100
1992	2	21	77	100
1993	4	22	74	100
1994	11	16	73	100
1995	9	15	76	100

The National Debt Management Agency acts as the Government's agent in the management of the public debt. According to the Agency's legislation it is charged with overseeing borrowing and debt management functions of the Treasury, both domestic and foreign, and government guarantees. However, under a special agreement the central bank is responsible for the execution of foreign borrowing for the Treasury. As Tables 7 and 8 show, the Icelandic Government borrows on both foreign and domestic financial markets. On the domestic market regular auctions are held for Treasury bills (with maturities of 3, 6 and 12 months), government notes (3 and 5 years) and indexed government bonds (10 and 20 years).

On the foreign market most of the public debt is funded. The floating foreign debt includes the borrowings through the Euro Commercial Paper Programme, which Iceland established as long ago as 1985. The Republic of Iceland has a long-term rating of A+ and A1 from Standard & Poor's and Moody's, respectively, and a short-term rating of A1+/P1.

Table 8 shows the proportion of central bank and commercial bank claims on the Government in recent years. The rise in the central bank's claims in 1994 is exceptional, and is explained by the increase in the Bank's holdings of marketable government bonds as a result of its effort to maintain moderate interest rates on the domestic market.

3. Monetary policy instruments and implementation

Instruments

The main instruments used to implement monetary policy are: central bank interest rates, bond and money market operations, intervention in the foreign exchange market, central bank credit facilities for financial institutions, reserve requirements and a minimum liquidity ratio. In the early 1990s, a new policy on the central bank's accommodation for the Treasury was formulated. The Treasury now has to fully meet its borrowing needs in the financial market, and not through overdrafts with the central bank. This policy has been instrumental in the development of the Icelandic money market. Interest rates on government securities are fully set by the market, and they now play a bigger role in the determination of general domestic interest rates. Through market operations, the

ability of the central bank to influence short-term interest rates has been strengthened.

(i) Reserve requirements

Deposit Money Banks are subject to both reserve requirements and rules on a minimum liquidity ratio. The reserve requirement can be fulfilled only via deposits in blocked accounts with the central bank. The base for the reserve requirement includes not only deposits but also DMBs' bond issuance and other domestic liabilities. The amount that needs to be held on deposit in the required reserve accounts is adjusted by the central bank (with an entry on the current account of the institution in question) during the third week of each month so as to reach the specified minimum percentage of the base as of the end of the previous month. Since November 1993 the required reserve ratio has been lower for time deposits and outstanding bonds than for other liabilities. Prior to that no differentiation was made with regard to the type of liabilities. Marginal reserve ratios were applied in the 1960s and 1970s, but they have no relevance except when the (average) reserve ratio is being raised. Deposits on the required reserve account with the central bank have always been remunerated. Required reserves currently carry interest rates of 3½% in addition to being fully indexed.

The minimum liquidity ratio is a secondary requirement that is fulfilled by holdings of cash, Treasury bills and free reserves as measured by an average during each month.

Table 9 shows that required reserve ratios have been reduced sharply over the last decade. At the same time, banks' and the Treasury's access to central bank financing has also been reduced.

(ii) Credit ceilings

The central bank does not impose ceilings on credits extended by financial institutions. Credit ceilings were applied in the 1970s and early 1980s, the last year being 1986.

(iii) Interest rates

Financial institutions can freely set all their interest rates. One exception is that the central bank determines the so-called penalty interest rates

Table 9

Liquidity and reserve requirement ratios

In percentages

Effective as of:	Minimum liquidity ratio	Required reserve ratio
1st June 1979	..	28.0
17th April 1985	..	18.0
1st March 1987	7.0	13.0
1st July 1987	7.5	13.0
1st August 1987	8.0	13.0
1st August 1988	9.0	12.0
1st January 1989	10.0	12.0
1st March 1989	10.0	11.0
1st April 1989	9.0	11.0
1st May 1990	11.0	10.0
1st June 1990	12.0	7.0
31st October 1991	12.0	6.0
1st January 1992	12.0	7.0
1st November 1992	12.0	6.0
1st December 1992	12.0	5.0
1st November 1993	10.0	4.0 (2.5)*
23rd September 1996	12.0	4.0 (2.5)*

* Figure in parentheses refers to the reserve ratio for time deposits and bond issues.

according to a certain formula specified by law. Penalty rates are applied on overdue payments. At the time of writing it is probable that the planned near-term amendments of the Interest Rates Act (No. 25/1987) will abolish the regulation on penalty rates. There are no indications that interest rates are set by an agreement among financial institutions; such collusion is strictly forbidden by law. The large market share of a small number of banks may nevertheless have led to oligopolistic behaviour in the setting of bank rates. An overview of interest rates is presented in Tables 10 and 11.

(iv) Limits on discount and other credit facilities

The central bank provides the economy with liquidity through (a) the purchase of foreign exchange, (b) the purchase of Treasury bills and government bonds, and (c) by granting financial institutions some access to central bank financing. The last channel includes limited discount facilities at low interest rates and repurchase agreements (repos) at predeter-

Table 10

Selected interest rates in Iceland as at 21st October 1996

Percentage rates per annum

Central Bank	
Deposits	
Current account	2.7
CB's notes, 90-day	5.7
Treasury bills, 10-day reverse repos	5.9
Required reserves (indexed terms)	3.5
Credits	
Discount rate	6.0
Treasury bills, 10-day repo	6.9
Money market	
CB's offer rate on 90-day Treasury bills, secondary market	7.05
CB's bid rate on 90-day Treasury bills, secondary market	7.12
Primary market for 90-day Treasury bills	7.12
Interbank rate for overnight loans	8.00
Primary market for 90-day bank bills	6.20
Bank deposits	
General savings accounts	0.8
Special sight saving accounts	3.5
Two-year indexed accounts	4.5
Bond market	
Indexed rates	
Offer rate on 5-year government bonds	5.38
Bid rate on 5-year government bonds	5.46
Market-maker bid rate on housing bonds	5.64
Bank loans	8.90
Non-indexed rates	
Offer rate on 5-year government notes	8.98
Bid rate on 5-year government notes	9.08
Bank loans, non-indexed	12.50

mined interest rates which are slightly higher than the discount rate. Treasury bills are the most common instrument in repos with the DMBs. There is no formal limit. The maturity in each case is ten days. The central bank has also granted limited repo facilities to securities houses which have assumed the role of market-makers in government bonds, in which

Table 11

Selected interest rates at deposit money banks

Annual averages

	General savings accounts		Time deposits[1]		Bills of exchange 60-day		General non-indexed secured loans		Indexed securities		Penalty rates		Inflation rate[2]
	N	R	N	R	N	R	N	R	N	R	N	R	
1960 . .	8.7	2.0	9.4	2.6	11.1	4.2	10.7	3.8	.	.	.	.	6.6
1961 . .	7.0	– 6.5	8.0	– 5.6	9.5	– 4.3	9.5	– 4.3	.	.	.	.	14.4
1962 . .	7.0	– 0.9	8.0	0.0	9.5	1.4	9.5	1.4	.	.	.	.	8.0
1963 . .	7.0	– 6.4	8.0	– 5.5	9.5	– 4.2	9.5	– 4.2	.	.	.	.	14.3
1964 . .	7.0	– 4.3	8.0	– 3.4	9.5	– 2.1	9.5	– 2.1	.	.	.	.	11.8
1965 . .	6.0	– 6.1	7.0	– 5.2	8.4	– 4.0	9.0	– 3.5	.	.	12.0	– 0.8	12.9
1966 . .	7.0	– 1.2	8.0	– 0.3	9.5	1.1	10.0	1.6	.	.	12.0	3.4	8.3
1967 . .	7.0	2.5	8.0	3.4	9.5	4.9	10.0	5.4	.	.	12.0	7.3	4.4
1968 . .	7.0	– 8.0	8.0	– 7.1	9.5	– 5.8	9.2	– 6.1	.	.	12.0	– 3.7	16.3
1969 . .	7.0	–12.2	8.0	–11.3	9.5	–10.1	9.2	–10.3	.	.	12.0	– 8.0	21.8
1970 . .	7.0	– 8.8	8.0	– 7.9	9.5	– 6.6	9.2	– 6.9	.	.	12.0	– 4.5	17.3
1971 . .	7.0	3.9	8.0	4.9	9.5	6.3	9.2	6.0	.	.	12.0	8.7	3.0
1972 . .	7.0	– 7.2	8.0	– 6.3	9.5	– 5.0	9.2	– 5.3	.	.	12.0	– 2.9	15.3
1973 . .	8.3	–17.3	9.7	–16.3	10.9	–15.3	12.1	–14.4	.	.	16.0	–11.5	31.0
1974 . .	10.8	–28.1	12.3	–27.1	14.4	–25.8	15.9	–24.8	.	.	20.8	–21.6	54.1
1975 . .	13.0	–19.9	14.5	–18.8	17.6	–16.6	18.8	–15.7	.	.	24.0	–12.1	41.0
1976 . .	13.0	–12.5	14.5	–11.3	18.2	– 8.4	19.5	– 7.4	.	.	24.7	– 3.4	29.1
1977 . .	13.3	–15.0	24.0	– 7.0	19.2	–10.6	20.7	– 9.5	.	.	32.5	– 0.6	33.3
1978 . .	18.6	–19.2	31.6	–10.4	26.6	–13.8	27.2	–13.4	.	.	36.0	– 7.4	46.8
1979 . .	22.8	–20.6	35.5	–12.4	29.1	–16.5	30.9	–15.4	.	.	45.0	– 6.3	54.7
1980 . .	33.3	–12.6	45.0	– 5.0	40.0	– 8.3	39.9	– 8.3	56.1	2.3	55.8	2.1	52.6

case such bonds serve as the underlying securities and the maturity is 30 days. The central bank provides no privileged credit for private or public borrowers. Until 1985, however, the Bank applied preferential rates when rediscounting loans which the banks had granted to certain business sectors.

(v) Money market transactions

In addition to the interest rates on the above-mentioned credit facilities, the central bank influences short-term interest rates through its transac-

Table 11 (cont.)

Selected interest rates at deposit money banks

Annual averages

	General savings accounts		Time deposits[1]		Bills of exchange 60-day		General non-indexed secured loans		Indexed securities		Penalty rates		Inflation rate[2]
	N	R	N	R	N	R	N	R	N	R	N	R	
1981 . .	34.4	– 8.9	45.9	–1.2	39.8	– 5.3	45.1	– 1.7	51.3	2.5	55.3	5.2	47.6
1982 . .	35.3	–15.7	61.8	0.8	40.4	–12.5	45.4	– 9.4	65.2	2.9	58.0	–1.6	60.5
1983 . .	38.7	–20.0	74.7	0.7	44.6	–16.6	48.8	–14.2	78.6	3.0	58.2	–8.8	73.4
1984 . .	16.1	– 2.4	22.7	3.2	23.2	3.6	23.0	3.4	25.4	5.5	31.5	10.6	18.9
1985 . .	22.7	– 9.5	39.4	2.8	36.0	0.3	32.5	– 2.3	42.4	5.0	44.0	6.2	35.6
1986 . .	11.5	– 2.8	18.0	2.9	20.3	4.9	19.6	4.3	20.5	5.1	30.5	13.8	14.7
1987 . .	13.3	– 7.3	26.1	3.2	28.7	5.3	27.9	4.7	31.6	7.7	35.9	11.2	22.2
1988 . .	16.7	– 2.0	23.6	3.8	34.0	12.5	33.2	11.8	30.1	9.2	43.9	20.8	19.1
1989 . .	11.2	– 8.6	25.1	2.9	29.4	6.4	29.5	6.5	31.1	7.8	35.9	11.8	21.6
1990 . .	3.7	– 3.2	13.6	6.0	17.0	9.2	17.1	9.3	15.7	8.0	26.0	17.6	7.1
1991 . .	4.8	– 2.7	15.3	7.1	19.0	10.5	18.4	10.0	17.5	9.2	25.0	16.1	7.6
1992 . .	1.2	– 0.4	8.2	6.5	13.3	11.6	13.5	11.8	11.0	9.3	19.5	17.7	1.6
1993 . .	0.8	– 2.1	9.4	6.2	15.1	11.8	14.8	11.5	12.4	9.1	17.7	14.3	3.0
1994 . .	0.5	– 0.7	6.1	4.8	11.9	10.5	10.9	9.5	9.3	7.9	14.2	12.8	1.3
1995 . .	0.6	– 1.0	7.1	5.4	14.5	12.7	11.9	10.1	10.4	8.7	14.6	12.8	1.6

Notes: N = Nominal yield in percent per annum.
R = Real yield in percent per annum (yield in excess of changes in credit terms index).

[1] Period 1960–1976: 6-month savings books. Period 1977–1981: 12-month non-indexed time deposits. Period 1982–1989: 6-month indexed accounts. Period 1990–1993: 15 to 30-month indexed accounts. Period 1994–1995: 48 to 60-month indexed accounts. [2] Changes in credit terms index from the beginning to the end of each year.

tions in the money market, specifically the market for Treasury bills. The Bank places non-competitive bids at auctions of Treasury bills and offers two-way prices on the secondary market for such bills. This market is the most important channel for the Bank in terms of traded volume, both for outright purchases of Treasury bills and for the sale of such bills. The DMBs make use of this market to adjust their most liquid reserves and to maximise their earnings on liquidity. The central bank offers the DMBs reverse repos of Treasury bills at predetermined interest rates. Also available to the DMBs are certain central bank notes, but usually these play a negligible role. The Bank would only make the notes attractive if for some

reason Treasury bills were to lose their importance for the conduct of monetary policy.

The above-mentioned transactions of the central bank are seen as a way of influencing interest rates, but at the same time the Bank is either providing or absorbing liquidity. The Bank does not make a clear distinction between these two roles. By monitoring several monetary aggregates, the Bank makes its decisions about its bid and offer yields in the secondary market. Changes in the yields are often based on a judgement that the direction of the flow of liquidity should change.

4. External convertibility and the foreign exchange market

(i) Capital movements

In recent years the rules and regulations governing inward and outward capital transactions in Iceland have been liberalised. The current legislation on foreign direct investment dates back to 1991. At the beginning of 1994 long-term portfolio investments were completely deregulated, and restrictions on short-term movements were eased. At the beginning of 1995 the remaining restrictions on short-term movements were abolished.

Today there are no limits on capital movements to and from Iceland for residents. Most of the earlier restrictions on direct investment in Iceland by non-residents have also been removed. Some restrictions remain, however, the most important being that foreigners cannot hold an equity stake in fishing or fish processing firms, either directly or indirectly. The same applies to power generation and distribution companies. Moreover, holdings of non-residents in commercial aviation companies is restricted to 49% and in domestic incorporated commercial banks to 25%. Other than this, the direct investment climate is liberal, and despite the restrictions on foreign ownership of domestic banks, for example, foreign banks can operate branches in Iceland. It is important to note that for all investments in the financial markets in Iceland no restrictions whatsoever apply on the repatriation of capital, interest or dividends.

(ii) Exchange rate regime

Stability of the nominal exchange rate vis-à-vis a trade-weighted basket of

currencies is an intermediate target of monetary policy. There is a fluctuation band of +/–6% around the central rate. The basket is revised annually to correspond to the actual weights of foreign trade in the preceding year.

(iii) Foreign exchange intervention and official foreign exchange reserves

The central bank intervenes in the foreign exchange market by buying or selling krónur, usually at fixing meetings but also on the interbank market outside the meetings. The Bank intervenes so as to prevent the currency index from moving too far from the central rate.

To be able to maintain the exchange rate at the desired level the central bank needs sufficient foreign reserves. Since the fixed exchange rate policy was adopted, the reserves have been fully adequate. Government foreign borrowing has sometimes been helpful in supporting the reserve position, especially when the business sector started to reduce its foreign indebtedness. However, government foreign borrowing is not used in any systematic way to regulate official reserves. In the event of a short-term downturn in reserves, the central bank has access to some credit lines abroad. The Bank has set a lower limit for the reserves as well a higher limit beyond which they should not move.

(iv) The foreign exchange market in Iceland

Fixing meetings, with participants from the four commercial banks and the central bank, are held each day at 10.45 a.m. at the central bank. Most interbank transactions take place at these meetings but continuous trading during the day over the telephone is also possible. Information on such transactions is immediately reported to the central bank, which in turn reports a new value for the currency rate index. The prices quoted at the fixing meeting are the basis for the official exchange rate, which the central bank publishes daily. The banks are free to decide on their buying and selling rates to customers and change these rates in the course of the day.

5. Financial market development

(i) Money market

The Treasury started to auction Treasury bills only three years ago. Prior to that Treasury bills were only sold on tap at a price decided by the Ministry of Finance. These bills were tailor-made in the sense that the investor decided the amount and maturity, so that they were badly suited to serve as instruments for secondary market trading. Under the new system the bills are standardised 3, 6 and 12-month bills. They have been listed on the Iceland Stock Exchange and are now the basis for the money market, the largest financial market in Iceland in terms of traded volume. The central bank is a market-maker in Treasury bills, and commercial and savings banks are the most common traders with this instrument.

It is perhaps surprising that secondary market trading of standardised Treasury bills began so late in the whole process of financial market development in Iceland. The main reason is the fact that the Treasury had almost unlimited access to a central bank overdraft until agreement was reached in June 1992 to close this facility and let the Treasury meet its short-term financing needs through regular auctions of short-term paper. This agreement is undoubtedly one of the most important changes in the framework for monetary policy implementation in recent years. All direct lending by the central bank to the Treasury has ceased, except that the central bank can make non-competitive bids at the auctions of Treasury bills. It is the decision of the central bank whether and to what degree it does so. Its possibilities to influence short-term nominal interest rates are, therefore, no longer restricted by any form of automatic direct lending to the Treasury.

As a result of this agreement a significant and effective money market developed in less than two years. As an indication of the speed of the development of the money market it may be mentioned that the Treasury sold I.kr. 44 billion of short-term paper through auctions in 1995, compared to I.kr. 10 billion in 1992 and nothing in 1991. At the same time, the turnover of this paper on the organised secondary market increased from nothing in 1991 to I.kr. 48 billion in 1995.

Certainly it would have been appropriate to start the deregulation of interest rates by auctioning Treasury bills and developing a secondary market for them. Thus the commercial banks would have been able to

Table 12
Interbank market for overnight and other short-term loans
Annual averages, in billions of krónur

1990	1.6
1991	2.2
1992	1.6
1993	1.9
1994	0.8
1995	0.7

adjust their lending rates to money market conditions in addition to their own liquidity situation.

An interbank market for overnight loans is operated over the telephone. The players are the four commercial banks. A bank in need of liquidity calls another bank and asks for a loan. If they come to an agreement the lender moves some of its free central bank reserves to the central bank account of the borrower simply by faxing the instruction to the central bank. At maturity, usually the day after, the borrowing bank sends another fax instructing the central bank to execute a transaction in the opposite direction. Thus the central bank receives immediate information on what is happening in this market and is able to distribute the relevant statistics regularly. Volumes traded on this market are rather low (see Table 12), partly because all banks have had ample liquidity in the last two years. Once the market starts expanding more strongly, it is likely that more automation will be used. Interbank interest rates do not play an important role in the conduct of monetary policy.

As already indicated, both primary and secondary markets in securities issued by the Treasury exist. The commercial and savings banks issue bills which are tailor made and usually not traded on a secondary market. A primary market also exists for units of money market mutual funds. Table 13 presents some statistics on short-term instruments in the money market.

(ii) Bond market

At times of high inflation and regulated interest rates, bond issuance did not play a major role in Iceland, except for government bonds, which

Table 13

Market capitalisation of selected short-term instruments

In billions of krónur, at end of year

	1987	1990	1991	1992	1993	1994	1995
Short-term instruments, total (A)	1.0	10.9	10.9	19.5	22.5	18.1	21.0
Treasury bills	1.0	8.1	8.3	15.5	17.5	14.6	15.5
Bank bills	..	1.0	1.7	3.1	3.4	1.7	4.1
Money market mutual fund units	..	1.8	0.9	0.9	1.6	1.8	1.4
Memorandum item:							
Deposits of DMBs (B) . .	69.4	126.7	145.2	150.4	159.8	163.3	169.2
(A) as a percentage of (B)	1.4	8.6	7.5	13.0	13.8	11.1	12.4

since 1964 were the only instruments that could be indexed.[4] Government savings bonds are fixed interest securities issued in Icelandic krónur. Most of them are indexed, i.e. linked to the consumer price index, but SDR and ECU-linked bonds have also been issued. The following government bonds have been available on the primary market in 1996: 10 and 20-year indexed bonds, 3 and 5-year non-indexed bonds. At the end of 1995 the Ministry of Finance stopped selling 5-year indexed bonds and started to issue 5-year non-indexed bonds. This step was taken to reduce the use of price indexation in short and medium-term financial obligations in Iceland. Stocks of government bonds in recent years are shown in Table 14.

The lack of instruments explains the earlier slow development of the secondary market. The indexation of debt instruments from other issuers and deregulation of interest rates changed this environment. The Iceland Stock Exchange was established in 1985 and trading started in 1986. By that time the stock of government bonds issued domestically had already reached a considerable amount, and these were the only instruments traded on the Iceland Stock Exchange for the first few years. New bond issuance has increased dramatically. In addition to government bonds and

[4] The extensive practice of indexation of financial obligations in Iceland is one of the main characteristics of the domestic financial market. Certain loans, deposits and debt securities sold on the market are linked to the CPI so that changes in the index instantaneously alter the amount of the financial obligation in question.

Table 14
Stock of government bonds on the domestic market

	1988	1990	1991	1992	1993	1994	1995
	In billions of krónur, at end of year						
Government bonds & notes	19.7	38.2	46.6	53.2	66.1	78.0	84.6
Indexed savings bonds	19.7	38.2	46.6	53.2	64.0	71.3	74.2
SDR/ECU-linked savings bonds	0.0	0.0	0.0	0.0	0.0	1.1	3.8
Government notes (3 years)	..	..	..	..	2.1	5.6	6.6
Government-guaranteed housing bonds	..	5.8	22.6	37.0	54.7	72.5	84.8
Total	19.7	44.0	69.2	90.2	120.8	150.5	169.4
	As a percentage of GDP						
Government bonds & notes	7.7	10.5	11.7	13.3	16.1	18.0	18.6
Government & housing bonds	7.7	12.1	17.4	22.6	29.4	34.7	37.2

the government-guaranteed bonds issued for the housing finance system, municipalities, financial institutions and private companies issue bonds on the domestic market. In many cases these issues are privately placed and not sold in a public offering. In other cases these issues are listed on the Iceland Stock Exchange, but it seems that secondary trading only takes place in government and government-guaranteed bonds. Nevertheless, the bond market is providing the authorities with continuous information and is also playing an important role in raising capital.

On 21st February 1996, the Central Bank of Iceland relinquished its role as a market-maker for long-term government bonds. To ensure liquidity in the market, the central bank concluded an agreement with three securities houses according to which they assumed the responsibility of market-makers in the secondary market. The central bank handed over a part of its stock of government bonds to the securities houses in order to facilitate market-making and to finance their operations. The reason for this has been the Bank's view that its market-making role in the long-term market should be diminished as markets develop. As the long-term market has deepened it has become clear that the central bank is not able to control interest rates in that market and that efforts to do so could compromise other monetary policy targets. The new system

has operated successfully. Spreads have narrowed and the volume of trade has increased.

Mutual funds are obliged to place 90% of their disposable funds in securities listed on an official stock exchange. They are also obliged to maintain at least 4% of their assets in government securities. Their holdings have far exceeded this obligation. In the past, both pension funds and commercial banks were obliged to invest in certain domestic securities. This regulation has been lifted.

(iii) Equity market

Secondary market equity trading does not have a very long tradition in Iceland. Limited liability companies have of course existed for many years, but they have often sought new share capital through rights issues and not

Table 15
Turnover and market capitalisation of securities listed on the Iceland Stock Exchange

	Securities market						Money market
	Total	Govt. bonds	Housing bonds	Govt. notes	Shares	Other bonds	Treasury bills
	Turnover in billions of krónur						
1987 . . .	0.2	0.2	0.0	..	..	..	..
1991 . . .	2.4	1.7	0.7	..	0.0	0.0	..
1992 . . .	5.9	4.3	0.6	0.9	0.1	0.0	1.0
1993 . . .	22.3	14.0	2.9	4.5	1.0	0.0	53.3
1994 . . .	22.2	9.4	7.6	3.8	1.3	0.0	64.3
1995 . . .	22.6	9.3	2.5	7.8	2.9	0.1	48.3
1996[1] . .	28.6	12.1	2.6	9.0	4.9	0.0	70.8
	Market capitalisation in billions of krónur, at end of period						
1987 . . .	12.2	11.2	..	..	..	1.0	..
1991 . . .	69.9	43.8	18.3	..	1.6	6.2	..
1992 . . .	106.0	51.6	31.1	1.9	14.6	6.8	6.8
1993 . . .	152.5	65.4	55.3	2.1	19.1	10.6	17.7
1994 . . .	204.3	72.7	69.7	5.6	33.0	23.3	17.1
1995 . . .	239.8	76.5	79.5	6.1	47.0	30.7	16.5
1996[2] . .	288.3	58.6	96.8	10.0	85.4	37.6	15.9

[1] January–October. [2] As at 31st October.

Table 16
Shares listed on the Iceland Stock Exchange

	1991	1992	1993	1994	1995	1996*
Turnover/market capitalisation (%)	0.3	1.0	5.0	4.1	6.1	5.9
Market capitalisation/GDP (%)	0.4	3.7	4.6	7.6	10.3	17.2
Number of companies listed	2.0	11.0	17.0	24.0	27.0	32.0
Changes in share index (ICEX) (%)	7.0	–10.0	–17.0	24.0	35.0	59.0

* As at 31st October.

on the public market. The lack of a public market for equities in the past can best be explained by the fact that Icelandic financial markets were underdeveloped and by a lack of enthusiasm of companies for going public. In some cases secondary market trading has been restricted by company resolutions. The Iceland Stock Exchange had been in operation for five years when the first shares were listed. Here a significant change has taken place, and now 32 companies have had their shares listed on the

Table 17
Public issues of equity, privatisation and secondary market turnover
In billions of krónur

	1991	1992	1993	1994	1995	1996*
Primary market						
Public issues	3.7	1.3	0.9	1.9	2.9	10.3
of which:						
equity funds	0.9	0.2	0.5	0.7	1.3	3.5
privatisation	0.0	0.0	0.0	0.3	0.2	1.1
Other privatisation	0.0	0.5	0.7	0.0	0.0	0.0
Secondary market						
Icelandic Stock Exchange	0.0	0.1	1.0	1.3	2.9	5.0
OTC	..	0.4	0.4	0.6	0.8	1.6
Total	3.7	2.3	3.0	3.8	6.6	17.0

* As at 15th November.

Exchange with a market capitalisation of currently I.kr. 93 billion (see Tables 15 and 16). Trading in shares in the trading system of the Exchange is limited, as can been seen from the tables, but it should be noted that some trading also takes place outside the trading system. Figures show that the turnover in equity trading in 1996 may increase significantly from last year.

In 1992, the largest brokers in Iceland started operating an over-the-counter (OTC) market for non-listed shares, and the Exchange allowed its members to utilise the Exchange's trading and information system for trading in this market. Currently there are 32 companies on the OTC market, with a market capitalisation of about I.kr. 30 billion. Shares of about half of the companies are regularly traded on the OTC market. Some companies have recently moved from the OTC market to the Stock Exchange.

Table 17 shows that the supply of new equity (public offerings and privatisation) was I.kr. 3.7 billion in 1991, but since then the figure has fallen. This may be explained by several factors. Plans for further privatisation have not been implemented. In 1993 earnings of companies were low and some companies postponed the issue of equity. In 1994 some companies were attracted to the bond market rather than the equity market because of falling interest rates. In 1995 and 1996 the demand for equity has been high; this has led to new issues of equity on the primary market, increased turnover on the secondary market and higher prices.

The importance of the equity market in Iceland is growing. It has made it easier for companies to raise risk capital from the public (see Table 18 for a sectoral breakdown of listed companies). The disclosure rules imposed by the Stock Exchange on listed companies have educated investors to the importance of adequate information when making investment decisions. The investment opportunities have certainly existed, as is indicated by the fact that the index of stock prices registered by the Exchange rose by 35% in 1995 and has risen by 59% in the first ten months of 1996.

(iv) The role of the central bank in fostering the development of the financial market

The Central Bank of Iceland has played a major role in the development of financial markets in Iceland. The Bank has actively participated in the

Table 18
Companies listed on the Iceland Stock Exchange

	Number	Total assets	Capital at book value	Share capital, nominal	Market capitalisation	Capital ratio	Debt/ equity ratio
		31/12/95	31/12/95	31/12/95	25/07/96	31/12/95	
		in millions of krónur					
Communications	2	30,854	11,089	3,683	17,989	0.36	1.78
Fish processing	8	26,171	9,075	4,701	18,685	0.35	1.88
Banking	1	54,900	4,899	3,879	6,400	0.09	10.21
Oil distribution	3	18,137	8,496	1,923	11,661	0.47	1.13
Closed-end investment funds	7	7,375	6,758	4,016	6,363	0.92	0.09
Industry and others	9	14,896	5,637	1,400	6,163	0.38	1.64
Total	31	152,334	45,954	19,601	67,162	0.34	1.94

liberalisation and modernisation of the Icelandic financial market. It established the Iceland Stock Exchange in cooperation with banks and securities houses and has supported the Exchange in various ways, including by providing a location for its offices. But the Exchange is growing fast and is now able to cover its operational costs without any direct support from the central bank. Table 15 shows that turnover on the Exchange has grown rapidly in recent years, both of bonds and money market instruments and of equities.

The Bank has acted as a market-maker on the Exchange for long and short-term government securities, which has speeded up the development of both bond and money markets. In connection with this task the Bank has sometimes run into conflicts between the conduct of monetary policy on one hand and the need to have a liquid market for government securities on the other. This is particularly true for the bond market. At times the Bank invested considerable amounts in long-term bonds so as to steer long-term interest rates to levels it deemed appropriate.

The central bank enables commercial and savings banks to use an effective clearing system since cheques and interbank transactions are cleared over current accounts with the central bank.

(v) The role of derivative instruments

Derivative instruments in the foreign exchange market are playing an increasing role, since the commercial banks recently started to offer forward and swap contracts to their customers. Some securities houses have started to offer currency options over-the-counter.

6. Banks: regulation and supervision

(i) Supervision of financial institutions

The central bank is responsible for supervising the activities of commercial and savings banks, leasing companies, securities brokers, securities firms and mutual funds (open-end), and all other credit institutions as defined by Act No. 123/1993. Furthermore, the central bank supervises the annual accounts and the audit of pension funds. Thus its field of surveillance covers the whole range of financial institutions except insurance companies, closed-end mutual funds and the state-owned Building Fund. These functions are vested in the Bank Inspectorate, a department within the central bank. The main role of the Bank Inspectorate is to ensure that the activities of the above-mentioned institutions and firms are conducted in accordance with the relevant laws and regulations, and that they are sound in other respects. These institutions and firms are obliged to provide all the information considered necessary by the Inspectorate. The Insurance Supervisory Authority oversees insurance companies in Iceland.

(ii) Banking sector regulations and supervisory practices

Because of Iceland's participation in the European Economic Area, the Icelandic legislation and regulations regarding banks and other financial institutions have recently been adapted to the various regulations and directives in force in the European Union. The current rules on capital adequacy which came into effect in 1993 are based on Basle guidelines (with a minimum capital ratio of 8%). According to rules which the central bank has imposed, commercial and savings banks are obliged to keep the difference between foreign exchange assets and liabilities within a certain level (20% of capital and reserves). The same is true for indexed assets and liabilities.

Table 19
Deposit insurance schemes

	1991	1992	1993	1994	1995
	In billions of krónur, at end of year				
Commercial banks insurance fund . .	1.1	1.3	1.4	1.5	1.7
Savings banks insurance fund	0.2	0.3	0.3	0.4	0.5*
Total	1.3	1.6	1.8	1.9	2.2
Commercial banks deposits	118.1	121.3	128.6	129.1	131.7
Savings banks deposits	24.7	26.9	29.3	31.6	34.8
Total	142.8	148.2	157.9	160.7	166.5
	As a percentage of deposits				
Commercial banks insurance fund . .	0.9	1.1	1.1	1.1	1.3
Savings banks insurance fund	0.7	0.9	1.1	1.3	1.4
Total insurance funds	0.9	1.1	1.1	1.2	1.3

* Provisional.

The main task of the Bank Inspectorate, as defined in the current Central Bank Act, is to supervise the operations of those institutions which are subject to its supervision in order to ensure that they adhere to the relevant laws and regulations and remain sound in other respects. Inspection takes place either on site or on the basis of written information on particular aspects of operations and assets or liabilities according to individual circumstances. Most of the institutions subject to monitoring by the Bank Inspectorate are required to submit periodic reports on their operations and the composition of assets and liabilities. The results of the investigations of the Bank Inspectorate are presented in letters or reports to the institutions in question. Findings that give cause for concern are reported to the Minister of Commerce.

(iii) Deposit insurance schemes

Iceland has two deposit insurance schemes, one for the commercial banks and another for the savings banks (see Table 19). In recent years the commercial and savings banks have contributed an amount equal to 0.15% of their deposits annually to these schemes. The present law stipulates

that the commercial banks' insurance fund is a government entity, while the savings banks own their insurance fund. According to a provisional Act, the two schemes will be merged in the near future.

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Changing financial systems in open economies: The Central Bank of Malta's recent experience

Francis J. Vassallo*

1. The objectives of financial system reforms

Serious efforts to bring about change in the Maltese financial system commenced at the beginning of 1994. The aims of the reforms were: (i) to gradually liberalise interest rates; (ii) to create a properly functioning money market (a stock exchange was set up in 1992); (iii) to strengthen the role of the Central Bank by giving it the statutory power to formulate monetary policy and providing it with the necessary instruments to implement a market-oriented monetary policy; (iv) to improve and upgrade the banking structure and strengthen the supervision of banking and other financial services (given the need to monitor the activities of financial institutions more closely as the liberalisation programme gathers pace); (v) to allow market forces a bigger role in establishing the level of the exchange rate; and (vi) to complete the removal of all restrictions on capital movements.

2. The measures introduced

With regard to **interest rate liberalisation,** all ceilings on deposit rates were lifted in early 1994. More uniformity was introduced in lending rates with the abolition of special rates to priority sectors (excluding residential construction). In November 1995 the ceiling on bank lending rates was raised to 10 percentage points above the discount rate, effectively freeing bank lending rates.

A number of initiatives were taken to **develop the money market.** These were focused chiefly on the development of the Treasury bill market, with a view to making operations in this market the main instrument of monetary policy. A proper auctioning system was introduced at

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the beginning of 1994, with the Central Bank playing a dominant role in the initial stages in order to encourage the active participation of the banks and ensure that the discount yield on bills was market-determined. The tenor of bills was also increased, with new maturities of six months, nine months and one year being issued. In addition, the Bank introduced the concept of repurchase agreements, and by the end of 1994 weekly auctions in repos and reverse repos had become a regular feature of the Bank's open market operations. At the same time, interbank trading in money market instruments also started to develop. This year, the Bank has established a separate market-making function for Treasury bills in order to improve liquidity in the secondary market.

All the necessary amendments to the Central Bank of Malta Act aimed at enhancing the Bank's **monetary policy role** were approved by Parliament before the end of 1994. These gave the Bank the power to set interest rate levels or influence their movement through-market oriented methods. Before the legislation was changed it was the Minister of Finance who was responsible for setting maximum levels of bank lending rates. The legislation gave the Bank the authority to issue its own securities and to enter into repurchase agreements with the banks. It also gave the Bank greater flexibility with regard to the assets it held in its portfolio. Most importantly, the new legislation abolished the provision enabling the Government to borrow short-term funds (in the form of an overdraft facility) from the Bank. This amendment, however, will only come into effect from the beginning of next year.

With regard to the **development of the banking and financial structure,** a new Banking Act to regulate banking activity in Malta was also passed by Parliament at the end of 1994. The Act brings Malta's banking legislation closely into line with the European Union's First and Second Banking Directives. It also adopts most international recommendations on bank supervision regarding solvency, capital adequacy and large exposures.

Under the Act the Central Bank was confirmed as the competent authority responsible for banking supervision. A new, separate authority has been established with responsibility for the supervision of other financial services and also for the promotion of Malta as an international financial centre. In this regard it is pertinent to mention that a number of laws on financial services, taxation, money laundering, insider dealing, professional secrecy and the recognition of trusts were approved by Parliament

during 1994. The Bank and the new authority actively cooperate in the development and supervision of financial services.

To allow a more competitive environment to develop in the banking sector, the Government privatised one of the smaller banks in April 1994 and one of the larger banks in March last year. Also in 1995, a full banking licence was granted to a major international bank, which is expected to begin operating in Malta later this year. In addition, the Bank has issued banking licences to four foreign-owned banking institutions. These are currently only permitted to carry out offshore operations, although they will be authorised to participate in domestic activities in the near future.

The daily **exchange rate** of the Maltese lira is currently not allowed to deviate from its basket-determined level. Accordingly, the Central Bank provides the banks with their foreign exchange requirements at the stated selling rate and purchases any excess holdings from them at the stated buying rate. However, over the last 18 months a number of measures have been introduced to lay the foundation for the establishment of a properly functioning foreign exchange market. These measures have included real-time quotations for the Maltese lira, greater scope for interbank foreign exchange transactions, a widening of margins around the mid-rate quoted by the Bank for the Maltese lira, a reduction (to three) in the number of currencies used by the Bank for intervention purposes and, finally, the issue of forward exchange quotations for the Maltese lira based on interest differentials.

Malta accepted the obligations of Article VIII of the IMF's Articles of Agreement in November 1994. As a result, there are no restrictions on current payments. Controls on **capital movements** are virtually non-existent so far as non-residents are concerned. Indeed, recently a restriction on non-resident investment in Treasury bills was abolished, so that non-residents are now permitted to move in and out of almost all types of domestic financial assets. There are still limits on the amount of capital which residents may invest in overseas assets, but annual allowances are being increased every year until all limits are removed, possibly over the next two years.

3. The experience of the Central Bank over the period of change in the financial system

The financial system reforms are certainly contributing to greater efficiency in the system and a deepening of financial markets. The Central Bank is now in a position to pursue a monetary policy that relies more and more on indirect methods of control. Whereas prior to the reforms it had to resort exclusively to direct controls and reserve requirements to exert monetary control, it now intervenes regularly in the money market through repo transactions.

Over the last year the Bank has been concerned about price pressures in the economy and the relatively high rate of annual monetary growth, which at one time exceeded the upper limit of its monitoring range (8–12%). The Bank's ultimate monetary policy objective continues to be a stable price level, which it achieves by maintaining an exchange rate peg. Its principal intermediate target is therefore the net foreign assets, which are also measured in relation to base money. The Bank's main operating target is currently the money market rate, more precisely the seven-day repo rate.

After taking developments in monetary conditions and the external reserves into consideration, the Bank tightened monetary policy from the middle of 1994. Initially (that is, prior to the above-mentioned changes in the legislation governing the Bank) it absorbed liquidity from the banking system by auctioning term deposits of various short-term maturities. Subsequently it launched the system of repo auctions which it currently uses to supply or remove liquidity. The Bank has also provided lending facilities at a penal rate to the banks and continues to impose reserve requirements. However, the latter are implemented more flexibly insofar as the banks are allowed to maintain reserve balances on an average basis. Over the last year the Bank has left its discount rate unchanged, relying on the repo rate to give signals to the market.

4. The problem areas

In the light of the Central Bank's experience over the last year, it may be said that the Bank has generally been successful in its efforts to implement a more market-oriented monetary policy. However, attention should be

drawn to a number of problem areas in the present situation which will have to be addressed in the future to enable the benefits of a market-oriented financial system and an effective monetary policy to be transmitted to the economy. These problems may be summarised as follows:

(i) The **danger of cartelisation** due to the fact that two major commercial banks dominate the banking sector: there is concern that, notwithstanding the efforts of the authorities to encourage competition, the banks may collude to push interest rates higher even if conditions in the market indicate that they should move lower. This danger has been reduced by the entry of a major international bank into the market.

(ii) A still rather **slow response of banking institutions** to the changes that are taking place in the financial sector, particularly when the Central Bank sends monetary policy signals through the money market: bank management still needs to become more sensitive to market developments, and to the implications for interest rates and the pricing of loans.

(iii) The **thinness of the financial markets** due to the small number of banks and financial institutions making up the sector: the Central Bank has been forced to play the role of market-maker in both the capital and the money market, which may at times have led to some conflict with its monetary policy role, although this situation is expected to improve with the development of a separate market-making structure in the money market.

(iv) The **fiscal deficit** which is still partly financed by borrowing from the Central Bank via primary market purchases of Treasury bills: this restricts the Bank's scope for maintaining monetary control.

(v) The **stance of fiscal and monetary policy** as viewed by the Ministry of Finance and the Central Bank: while both agree that the control of inflation is a major policy objective, senior officials at the Ministry appear to give priority to keeping the cost of government borrowing as low as possible; the Bank's determination to pursue a tight monetary policy has thus created some friction with the Ministry.

(vi) The need to strengthen the **foreign exchange market** and broaden participation: this will allow the exchange rate to be determined by market forces, subject to market intervention by the Central Bank aimed at maintaining the currency within a specified trading range.

Changing financial systems in small open economies: The Portuguese case

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1. Introduction

Conscious of the handicaps of an underdeveloped financial system closed to innovative external influences and dominated by nationalised banks, the Portuguese authorities started to modernise the financial system as part of the major structural reforms that were embarked upon within the framework of an IMF agreement during the 1983–85 period of macroeconomic adjustment. Following the first amendment of the Constitution in late 1982, the banking system was opened to domestic and foreign entrants in August 1983. Capital movements were also gradually liberalised, especially after Portugal's accession to the European Community (EC) in 1986. The rationale was that more competition would make the domestic financial sector more efficient, which is precisely what happened.

The liberalisation of the financial system was aimed mainly at restructuring and at strengthening competition in the banking sector, on the one hand, and at promoting a better-functioning capital market, on the other. As regards the banking sector, the major steps taken were:

(i) the opening of the sector to private economic agents, domestic as well as foreign;
(ii) the widening of the range of operations performed by banks;[1]
(iii) the gradual liberalisation of bank deposit and lending rates;
(iv) the privatisation of nationalised banks.

In addition to the favourable environment resulting from the improvement in economic activity and investment from the mid-1980s, a number

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[1] For instance, in 1986 commercial banks were authorised to take deposits of over one year and to grant medium-term housing credit, and in 1987 all banks were allowed to issue certificates of deposit of up to five years at interest rates negotiated between the parties.

of important factors contributed much to the revival of the capital market, viz.:

(i) the establishment of a broad range of non-monetary financial institutions;[2] tax incentives and the scope for taking advantage of the high intermediation margin and of the credit ceilings in the banking system were major encouragements;
(ii) the implementation of measures aimed at better market organisation and operation, in particular through legislative reform;
(iii) the creation of new financial products, particularly public debt instruments, given that the strengthening of the capital market was intended not only to make the financial system more efficient, but also to increase the share of non-monetary financing of the public deficit.

Although the dismantling of restrictions in the domestic market started a little earlier than the gradual relaxation of exchange controls, it is perhaps more appropriate to view the two processes as having taken place in parallel. External liberalisation therefore had its domestic counterpart in the opening of the banking sector and the privatisation of public banks, the development of new financial institutions and instruments, and the transition to indirect monetary control through the deregulation of interest rates and the elimination of credit ceilings.

For the successful modernisation of the financial system (and as part of the above-mentioned standby agreement with the IMF), it was crucial to reduce the government borrowing requirement and to curb inflation. Progress in these areas would facilitate, respectively, the elimination of privileged government financing channels and promote the development of stable financing instruments with interest rates freely responding to market forces.

Capital market financing was buoyed by the creation of new institutions and instruments, by the granting of tax incentives to both securities holders and issuing companies, and by the preparation of an appropriate regulatory framework that aimed at making financial markets function more efficiently.

[2] Including credit companies such as leasing, investment, factoring and hire-purchase financing companies and finance companies such as investment fund management, risk capital and regional development companies. Mention should also be made of the rapid growth of pension funds since their creation in 1995.

Deregulation and development of the domestic financial sector accompanied the transition to indirect methods of monetary control based on market mechanisms, the gradual removal of capital controls and the progressive integration of Portuguese financial markets with those abroad.

The paper is structured as follows. The next section describes the main developments in the money market and the measures taken to move from a method of direct monetary control, depending on compulsory credit ceilings, to one based on open market operations. Section 3 details the gradual liberalisation of capital transactions, with controls on direct and real estate investment, portfolio investment, financial credits and, finally, short-term capital movements being relaxed roughly in that order. Section 4 deals with exchange rate policy and the foreign exchange market, discussing the main developments since the introduction of a crawling-peg exchange rate regime in early 1978. The crawling peg was abandoned in April 1992, when the Portuguese escudo joined the exchange rate mechanism (ERM) of the European Monetary System (EMS). The final section describes the major steps taken towards the liberalisation of Portuguese securities markets. Although the share of the capital market in the overall financing of the economy is not yet very high, the last few years have seen significant progress, mainly as a result of the privatisation of major companies and the elimination of monetary financing of the government deficit.

2. Monetary policy and the money market

From the mid-1970s until the beginning of the 1990s, monetary policy in Portugal was based on credit ceilings, with the main interest rates being set administratively, and on a crawling-peg regime for the escudo, coupled with controls on foreign borrowing. The limits to the expansion of bank lending to the productive sector were fixed by the Bank of Portugal on the basis of a forecast for a broad monetary aggregate,[3] a projection of the change in net foreign assets[4] and the budgeted public sector borrowing requirement.

[3] Comprising money, quasi-money and, after 1985, Treasury bills held by residents.

[4] After August 1983, the projected change in net foreign assets was based on a target for the external current account and an estimate of net capital inflows.

Over time, monetary programming became increasingly difficult and monetary control based on credit ceilings less effective. First, as more marketable financial instruments became available and the public's sensitivity to changes in relative asset returns increased, the demand for money became rather unstable, making monetary programming harder.

Secondly, some public sector practices, in particular the direct financing of public enterprises by the Government (through Treasury operations) and the servicing of the external debt of some public entities and enterprises by the public sector, further complicated monetary management.

Thirdly, greater integration with the EC progressively eroded the effectiveness of capital flow controls. In particular, high domestic interest rates and favourable exchange rate expectations in the late 1980s resulted in large and unpredictable net capital inflows, making it more difficult to control liquidity growth.

Finally, with the growth of credit not subject to ceilings, the development of the capital market and, again, integration with the EC (which made it easier to circumvent credit controls), the authorities recognised the need to move to a more market-based implementation of monetary policy in which market-determined interest rates played a greater role.

The major problems underlying a regime of direct monetary control thus were, on the one hand, sometimes unexpected changes in the variables used in the calculation of the credit ceilings – the demand for money, net capital inflows and the public sector borrowing requirement – and, on the other hand, the decreasing usefulness of credit controls. However, moving to a more market-oriented approach was also likely to give rise to important adjustment problems. One important consequence of credit ceilings and sizable public sector deficits was that the banking system held a large share of its assets in the form of short-term, quasi-liquid securities. Under these circumstances, a sudden abolition of the credit ceilings would have led to a sharp expansion of credit and a lowering of interest rates, with undesirable implications for inflation and external equilibrium. Therefore, an appropriate programme for guiding the transition from an administered system to an indirect method of monetary control needed to be put together.

An important step in this transition programme was the introduction in 1985 of negotiable short-term Treasury bills, with maturities of three and six months, subsequently extended to one year, and the issuance in

1987 of fixed rate medium-term Treasury bonds, currently with maturities of up to ten years. These short and medium-term securities provided households with an alternative to bank time deposits. Through the issue of these public securities, the government deficit started to be financed outside the banking system at market interest rates. As other sectors also began to tap the capital market, the process of disintermediation of the banking system accelerated.

Capital inflows encouraged by high domestic interest rates and pre-announced changes in the exchange rate (crawling peg), however, complicated liquidity control. These autonomous capital inflows, which were particularly strong from 1988 onwards, prompted the authorities to make advance repayments on the external public debt. To curtail the liquidity effects of private capital inflows, the authorities also speeded up the easing of exchange controls on residents and increased the cost of companies' foreign borrowing by imposing a compulsory deposit requirement. Further measures taken to tighten monetary policy included increases in interest rates, higher reserve requirements and more binding credit ceilings.

However, the monetary authorities continued to face a dilemma: they were not able to control the level of the interest rate and the exchange rate at the same time, without retaining some controls on international capital movements. Such controls, however, militated against the liberalisation of capital flows, which was an important element in the process of European economic integration.

As monetary policy was thus becoming less and less effective, the authorities decided to take the necessary measures to allow transition to market oriented monetary management, chiefly comprising the gradual abolition of administratively fixed interest rates, the revision of reserve requirements, the absorption of excess liquidity and, at the institutional level, the revision of the central bank statutes.

(i) Gradual abolition of administratively fixed interest rates

Until 1987, interest rates were traditionally set by the Portuguese authorities. The process of gradual liberalisation of interest rates started in January 1987, when the interest rate ceiling on demand deposits of individuals was removed. This left only two deposit rates (the minimum rate for six-month time deposits and the rate on deposits made under a

special "housing-savings regime") and two lending rates (the maximum rate for loans of up to six months and the rate for loans based on the housing-savings regime) administratively fixed.

In March 1987, the Portuguese authorities retained just one interest rate ceiling on lending operations, and in September 1988 this administratively fixed rate was also freed, with the exception of the rate on housing credit and on loans based on the housing-savings regime. The maximum interest rate applicable to these loans was abolished in March 1989. On the same occasion, maximum interest rates on demand deposits were introduced at a level equal to one-third of the minimum rate payable on six-month time deposits. This measure was aimed at giving those retail banks with a reasonable network of branches greater stability, so as to enable them to face the price competition from other, mostly newer banks.

In May 1992, the minimum rate payable on six-month time deposits ceased to be administratively fixed, and the rate payable on demand deposits was also freed. By that date, therefore, the gradual process of liberalisation of interest rates on banking operations was completed. Since then, all rates have become market-determined.

(ii) Revision of reserve requirements

Before the first revision of the system of legal reserve requirements in March 1989, different ratios were applied for demand deposits (15%), time deposits from 30 to 180 days (12%), those from 180 days up to one year (3%) and those of over 1 year (1%). At that time, a uniform reserve coefficient of 17% was introduced and reserve requirements related to time deposits with maturities of more than six months began to be remunerated. In addition to tightening the stance of monetary policy (the average ratio increased), the introduction of a uniform coefficient was aimed at facilitating monetary programming and control, given that the substitutability of monetary liabilities with different reserve coefficients affected the banks' demand for reserves.

In May 1990, a second step in the revision of the system of reserve requirements was taken. Under the new regime, all financial institutions whose core business involved the creation of monetary liabilities – including investment, leasing and factoring companies – became subject to the compulsory reserve requirements. At the same time, the basis for

calculating the required reserves was widened to encompass all instruments included in the broad monetary aggregate L^- (liquid assets held by non-financial residents) as well as emigrant deposits. In the case of banks, which constitute the bulk of the financial system, reserve requirements were determined on the basis of weekly averages of daily figures and the regime became almost contemporaneous, i.e. only a three-day lag was set between banks' liabilities accounting periods[5] and their reserve maintenance periods.[6]

In February 1991, reserve requirements, which previously had been remunerated at different levels, became remunerated according to a formula,[7] which assured, at the margin, the same rate of remuneration for all reserves. The rates of remuneration of reserves were set quarterly (on the 4th of January, April, July and October) at values close to market rates to avoid disintermediation and delocalisation of deposits.

In November 1994, the authorities further reformed the system of minimum reserve requirements, in line with other European countries. The compulsory reserve coefficient was reduced from 17% (partially remunerated) to 2% (non-remunerated), thus releasing a huge amount of liquidity (about 13% of GDP), which was absorbed via the issue of central bank certificates of deposit with maturities ranging from two to ten years. These certificates could be used as collateral in repo-transactions or as contributions to the Deposit Guarantee Fund established in December 1994.

(iii) Absorption of excess liquidity

An important part of the transition to indirect monetary control was the agreement reached in December 1990 between the Government, the

[5] "Weeks" from the 1st to the 8th, from the 9th to the 15th, from the 16th to the 22nd and from the 23rd until the end of the month.

[6] "Weeks" from the 4th to the 11th, from the 12th to the 18th, from the 19th to the 25th and from the 26th up to the 3rd of the following month.

[7] The formula was:

$RR_t=[8\%*Bl_0+17\%*(Bl_t-Bl_0)]*n/365*Tj_t\%$

where:

RRt = amount of interest paid on reserve requirements in respect of the maintenance period t,
Bl_t = average eligible liabilities over the relevant computation period t,
Bl_0 = average eligible liabilities over the period 1st December 1990 to 3rd January 1991,
n = number of days of the computation period t,
Tj = rate of remuneration of reserve requirements.

Bank of Portugal and the banks on the launching of a large operation aimed at mopping up the excess liquidity, amounting more than 12% of GDP, that the banks held on deposit at the central bank. This operation – which took place between December 1990 and March 1991 – consisted in the issuance of government bonds to be acquired by the banks against their deposits previously held with the Bank of Portugal. The proceeds from the sale were used to cancel public debt held in the Bank of Portugal's portfolio and to prepay part of the general government external debt.

(iv) Reform of the central bank charter

A new Organic Law governing the operations of the Bank of Portugal was promulgated in October 1990. This law conferred a greater degree of autonomy on the central bank by explicitly prohibiting it from financing the state, other than through the underwriting of Treasury bills subject to negotiated conditions. It also strengthened the Bank Portugal's responsibilities and competencies in the area of prudential supervision.

The implementation of these reforms allowed the changeover from a system of direct quantitative limits on credit, in place since 1977, to one of indirect monetary control via open market operations. Following the suspension of formal credit ceilings in March 1990 and of credit growth recommendations at the end of 1990, monetary policy has focused on the setting of the cash reserves for the banking system to control liquidity growth, in accordance with the monetary programming framework presented in the Annex.

Since the beginning of 1991, intervention by the Bank of Portugal in the money market, within the reserve maintenance period, has taken four forms: regular intervention, fine-tuning repos, a late credit facility and an overnight credit facility. The first type of intervention determines the key rates for the system, that is, the interest rates which set indicative limits for the very short-term rates in the money market. In contrast with past practice, the Bank of Portugal has ceased to intervene daily, thus allowing interest rates to be more market-determined. Indeed, *regular intervention* takes place only on the first working day of each maintenance period and comprises operations of both supply and absorption of liquidity up to the first working day of the following period.

However, the Bank of Portugal can also resort to *fine-tuning repos* whenever it deems it necessary to stabilise the market during the reserve

maintenance period, in particular when the overnight money market rate is diverging too far from the indicative band. The maturities of these occasional operations are set on a case-by-case basis. Usually, operations mature within the period in which they are undertaken or mature at the start of the subsequent period.

As was the case in September 1992 in response to ERM turmoil, the Bank of Portugal can on occasion suspend its regular forms of intervention and resort to liquidity auctions at market-determined interest rates. The purpose is to allow domestic interest rates to rise and so penalise speculation against the escudo.

The *late credit facility* is an exceptional facility for providing liquidity on the last working day of the reserve maintenance period when the market is closed and compliance with the reserve requirements needs to be ensured. This credit facility is overnight and bears a penalty rate, which is the higher of: either the rate of provision of liquidity on the last regular auction plus 1 percentage point, or the highest rate on interbank money market transactions of the same day for maturities of up to five days plus 1 percentage point.

A *daily facility*, which allows banks subject to reserve requirements to raise funds overnight (up to a limit for the whole banking system of Esc. 100 billion), was created in June 1993. The maximum limit for each institution is established according to their respective reserve requirements, and the interest rates for these operations are pre-announced and may be changed each day.

The different types of intervention associated with reserve maintenance periods were initially undertaken in the form of repurchase agreements using Treasury bills, but since mid-1991 operations aimed at absorbing liquidity have been carried out mainly with central bank monetary certificates, the longest maturity of which was extended for this purpose from 7 to 14 days. Apart from the short-term intervention operations focused on reserve maintenance periods, the Bank of Portugal has also conducted liquidity-draining operations at longer maturities, given the existence of a structural liquidity surplus associated with the strong capital inflows mentioned above.

These intervention operations have been carried out either through the sale of central bank intervention bills (chiefly at maturities of one month and six months), or through the issue of Treasury bills (at three months, six months or 12 months) for monetary purposes. In the latter

case, the proceeds of the issues have been deposited in a specific Treasury account with the Bank of Portugal and have been remunerated so that the operation is neutral for the Treasury.

On 6th April 1992, the escudo joined the ERM with a wide fluctuation band of ±6 per cent and in December of the same year Portugal lifted all remaining capital controls (see the next section). Given this new institutional set-up, the Bank of Portugal stopped specifying a target for liquidity growth in 1993. Keeping the exchange rate stable has become the key intermediate target of monetary policy, to be achieved mainly through open market operations.

3. Liberalisation of capital movements

Exchange rate policy, together with capital controls on external transactions, have played an important role in Portugal since the mid-1970s. Given the difficulties faced by the Portuguese economy following the revolution of April 1974 and up until the accession to the EC in 1986, the exchange control regime (which covered most external current and capital account transactions) helped to contain or reduce the difficulties of the external sector. During this period of financing difficulties stemming from persistent and wide current account deficits, exchange controls were mainly imposed on transactions that gave rise to outflows. In essence, they aimed at guaranteeing that foreign exchange reserves were maintained at an adequate level and, at the same time, at preventing or hindering capital flight.

Apart from the quantitative restrictions on imports of some commodities necessitated in the context of an escudo subject to a programmed rate of depreciation (crawling peg), measures were also imposed with the objective of dampening speculation against the Portuguese currency, including the imposition of maximum terms for advance payments for imports and a penalty exchange rate to be applied to export payments made after the legal time limit.

The accession to the EC in 1986 marked the beginning of a programme of capital account liberalisation, initially in the framework of the single market and subsequently within the context of EMU, with a timetable agreed at the time of Portugal's accession and revised in 1988 (Directive 88/361/EEC of 24th July 1988).

The liberalisation strategy defined in the Treaty of Accession gave priority to external transactions closely aligned with the fundamental principles set forth in the Treaty of Rome (free movement of goods, persons and services and the right of establishment). It included the following steps:

(i) the immediate and unconditional liberalisation of international trade and invisibles transactions on the current account (other than travel expenditure and the provision of banking and financial services) as well as of those capital transactions which ensured the proper functioning of the common market (e.g. short and medium-term credits related to current transactions in which a resident participates) or assisted the revival of the Portuguese capital market (purchases by non-residents of quoted domestic securities);
(ii) the determination of transitional periods during which capital operations (mainly capital inflows) would be progressively liberalised;
(iii) the postponement of the terms agreed for the liberalisation of those capital transactions which might complicate monetary and exchange rate policies, in particular flows showing high sensitivity to interest rate differentials vis-à-vis the rest of the world.

The Portuguese authorities adopted the principle of liberalising capital movements on a gradual and "erga omnes" basis, giving priority in the period 1986–88 to those capital transactions most directly linked to international trade in goods and services and to the right of establishment. On a number of occasions, liberalisation measures were introduced ahead of the schedule agreed at EC level, most notably Portuguese investment overseas (including direct investment, real estate investment and portfolio investment).

The foreign exchange restrictions which were maintained or whose reintroduction proved necessary in 1990 and 1991 were basically targeted at those capital inflows which were most sensitive to interest rate differentials or changes therein. Indeed, from mid-1990 onwards, exchange restrictions were applied more selectively and judiciously to short-term capital movements (inflows) and non-trade-related external borrowing. The huge capital inflows then recorded, induced by sizable interest rate differentials as well as by expectations of some appreciation of the escudo, complicated the management of monetary policy. Consequently, to curb the inflows and ensure a significant degree of autonomy required

for effective monetary policy, a set of measures was implemented, comprising:

(i) the prohibition of forward transactions (sales and acquisitions) in escudos against foreign currencies with non-residents (except for hedging purposes) in June (purchases) and October (sales) 1990;
(ii) the introduction of a compulsory non-remunerated deposit of 40% of the countervalue in escudos of external borrowing in July 1990;
(iii) the imposition of a compulsory non-remunerated deposit of 40% of balances on escudo-denominated accounts held by non-residents with resident credit institutions in February 1991;
(iv) the subjection of repurchase agreements against domestic securities to prior authorisation by the Bank of Portugal in February 1991;
(v) the subjection of non-residents' purchases of floating rate Portuguese securities (indexed to money market rates) to prior authorisation by the Bank of Portugal in July 1991.

As noted before, these restrictions were temporary. The process of liberalisation continued with the abolition in August 1991 of the limits on the maximum maturity of forward foreign exchange transactions. In December of the same year, the maximum term of foreign-currency-denominated accounts held by non-residents with resident credit institutions and restrictions on such accounts held abroad by residents were lifted, and residents were freely allowed to hold foreign-currency-denominated accounts in Portugal.

Between March and July 1992, the compulsory deposit requirement on external financial borrowing was progressively cut from 40% to 25% and was abolished altogether in September of that year. At the same time, the full liberalisation of medium and long-term external borrowing was completed.

The escudo joined the ERM in April 1992, ahead of the complete liberalisation of capital movements (in particular the liberalisation of transactions of a short-term, monetary nature), which took place in the course of the second half of the year. In August 1992, resident purchases of non-listed, foreign-currency-denominated bonds and of foreign money market securities were freed. Also liberalised were financial loans to non-residents, with the exception of those denominated in escudos with a maturity of one year or less. In November 1992, all restrictions on non-resident purchases of Portuguese floating rate bonds and other

similar securities, as well as on short-term external financial borrowing, were lifted. Finally, in December 1992, it was decided to free all remaining transactions with non-residents falling within the authority of the Bank of Portugal, in particular the remuneration of escudo accounts held by non-residents, accounts held abroad by residents, non-resident purchases of Portuguese money market securities, short-term escudo-denominated loans made available to non-residents, forward foreign exchange transactions, futures and options. Since December 1992, capital movements have thus been completely free, subject to the relevant EC regulations, specifically those laid down by the Treaty of Rome and Directive 88/361/EEC.

4. Exchange rate policy and the foreign exchange market

Over the period 1978–85, the Portuguese authorities' exchange rate policy was based on a crawling-peg regime, aimed at offsetting the inflation differential between Portugal and its main trading partners. The purpose of this policy was to improve, or at least to maintain, external competitiveness.

Following a temporary suspension between November 1985 and April 1986, the crawling-peg regime was reinstated, but until December 1988 a less accommodative stance was adopted in that the rate of devaluation was progressively reduced in line with quarterly inflation targets. As from 1989, there was a gradual de facto move from this partly non-accommodative policy to a policy of progressively shadowing the EMS, which Portugal officially joined on 1st October 1990.

At that date, exchange rate policy changed formally: a composite index of the leading currencies participating in the ERM (weighted by Portuguese foreign trade) was constructed and was adopted as a reference medium-term objective for exchange rate policy. The escudo was allowed to fluctuate according to market pressures within a set, non-published range. To guarantee the smooth functioning of the market, scope was given to the Bank of Portugal to intervene on an ad hoc basis. This showed the clear commitment of the Portuguese authorities to participation in the ERM. In April 1992 Portugal indeed entered the ERM.

Up to 1985, the foreign exchange market was centred on the Bank of Portugal. Credit institutions were allowed to hold a maximum amount of foreign currencies as working balances, based on their escudo liabilities to

clients. Except in the case of banknotes or coins, foreign currency conversions could only be carried out with the Bank of Portugal. The Bank also determined the exchange rates to be used in transactions between the banks and the general public.

In the Treaty of Accession to the European Community (signed in June 1985), Portugal committed itself to taking the necessary steps to align the functioning of its foreign exchange market with that of the other EC countries. The escudo therefore began to be quoted as of July 1985 in a foreign market, Paris being selected for this purpose. In order to regulate the escudo market abroad and reduce the gap between the rates on external markets and the Lisbon rates, a protocol was signed with the Bank of France in March 1986, which stipulated that the latter could intervene on behalf of the Bank of Portugal in the Paris fixing session.

The first stage in the introduction of an exchange market in Portugal took place in October 1985, when a spot interbank exchange market started operating. Next, the banks' clients were allowed to choose between the rates negotiated among institutions or the rates resulting from the fixing session. These foreign exchange transactions with clients had to have a counterpart in escudos and to be related to goods, services or capital transactions with non-residents.

As of May 1986, credit institutions' scope for operating in the foreign exchange market was extended to cover arbitrage operations in foreign currencies among themselves and with other banks domiciled abroad. Credit institutions were also authorised to open or take among themselves deposits in foreign currency at up to one year.

These developments paved the way for the creation in February 1987 of a forward exchange market with a structure similar to that of the spot exchange market, except for the intervening role of the Bank of Portugal. Banks could carry out forward operations with the Bank of Portugal, but only at the latter's initiative. Unlike in the spot market, no official exchange rates were set for forward operations.

In addition to credit institutions, resident exporters or importers of goods, services or (legally authorised) capital were allowed to deal in the forward exchange market, with the rates being freely negotiated among the parties. The maximum term of the operations was initially set at six months, but was extended to one year in March 1988 and completely liberalised in August 1991.

Purchases and sales of one foreign currency against another were

legally confined to credit institutions operating in the Portuguese market. Banks were free to act within the positions allocated to them. In practice, each bank was allocated a ceiling on open (short and long) positions in foreign exchange, which in turn was related to the maximum daily exchange risk – spot position plus forward position – which each bank could incur.

The development of the forward exchange market was an important innovation in the Portuguese financial system. Besides providing a useful financial hedging instrument to economic agents with significant external trading and investment interests, it also established a closer link between the foreign exchange market and the domestic money market via the interbank market.

On the basis of studies undertaken with the participation and cooperation of credit institutions on how to change the procedure for the determination of the official exchange rate, banks were invited to attend the fixing sessions from 1st October 1987. This development represented an important step towards the liberalisation of the exchange market. Gradually, the process of determining exchange rates on the basis of supply and demand was extended to all segments of the market. As official exchange rates ceased to be administratively fixed, the Bank of Portugal started to intervene in the market in order to stabilise the exchange rate at a level consistent with the stance of its exchange rate policy.

In March 1989, banks ceased to be subject to limits on their spot positions, having only to comply with the regulations on their overall foreign exchange position. At the same time, spot purchases/sales of foreign currency against escudos by resident credit institutions from/to any non-residents were authorised. These steps, together with the authorisation of payments to non-residents in escudos in December 1988, generated exceptional turnover growth in the spot and forward exchange market (in particular, in the swap market) and led to the stabilisation of external spot quotations for the escudo, more in line with domestic quotes.

On 1st October 1990, a number of rules governing the fixing sessions were modified. In particular, all currencies began to be quoted directly against the escudo and the Bank of Portugal ceased to guarantee quotations. Until then, the US dollar had been the first and only currency to be quoted against the escudo.

On 1st September 1991, fixing sessions, which had been a regular daily event over the previous four years and had been conducted in the

presence of market operators, ceased to be held. Notwithstanding the contribution of the fixing sessions to the development of the foreign exchange market, their gradual loss of importance relative to activity in the interbank market made them dispensable, much in line with the practice in several other European countries. The determination of indicative official exchange rates, purely for reference purposes, began to be made on the basis of a procedure involving daily consultation of the interbank foreign exchange market by the Bank of Portugal.

The formal change in the stance of exchange rate policy in October 1990 led to an appreciation of the escudo and to a process which culminated in the entry of the escudo into the ERM in April 1992 and in the full liberalisation of capital movements in December of that year, as described in the previous section.

5. The capital market

The Portuguese capital market, still in its infancy and with a high speculative component, was deeply affected by the closing of the stock exchanges in 1974. It took until January 1976 for the Lisbon Stock Exchange to reopen, although only for bond transactions. Trading of shares on the Lisbon floor resumed in February 1977, while dealings on the Oporto Stock Exchange began anew in January 1981.

Between 1975 and 1981 only Treasury bonds were issued. In 1981, public enterprises began issuing bonds through public subscriptions, while capital increases of leading companies, which had been nationalised in the wake of the April 1974 revolution, were carried out through budget appropriations. As a result, turnover on the stock exchanges continued to be rather depressed – and almost exclusively based on Treasury bonds – for quite a long period of time following their reopening.

As already noted, the opening of the Portuguese banking system to the domestic and foreign private sector in February 1984 was one of the first steps in the process towards a liberal financial system. An identical trend towards greater freedom was also recorded with regard to the capital market. In order to foster the growth of the securities market, the Government decided:

(i) to grant tax incentives for investment in the capital market, both for securities holders and issuing companies, in 1985;

(ii) to create an entity – the Securities Market General Supervisor – with powers to supervise brokers and other securities market participants in October 1987;
(iii) at the same time, to reorganise the Stock Exchange National Council, whose main duty it was to inform and advise the Minister of Finance on subjects relevant to the securities market;
(iv) to adapt the listing requirements for securities on the Portuguese stock exchanges to EC rules in July 1988.

However, it was only in 1991, when the Capital Market Code was enacted, that major changes were implemented in the legal, institutional and operating framework of the Portuguese securities market. The main underlying principles of the Capital Market Code were the globalisation of the supply and demand in the securities market, on the one hand, and the progressive liberalisation of the primary and secondary market, on the other. These principles became reflected in:

(i) the privatisation of the stock exchanges;
(ii) a new structure for the stock market;
(iii) the implementation of a nationwide clearing and settlement system, supported by a Central Securities Depository, similarly of national scope.

As a result, the management and functioning of the stock exchanges have now become the responsibility of private non-profit associations composed of brokers and dealers (member associates) and banks (non-member associates).

According to the Capital Market Code, each stock exchange must have a *market with official quotations* for companies complying with the specific market-listing criteria, as well as a *second market* for small and medium-sized companies, in which funds can be obtained on less strict admission terms. In addition a *market without quotations (unlisted market)* can be established for the remaining companies which fulfil the general stock market admission criteria. In June 1994, a *special market for trading blocks* was created, intended for trading and registration of large lots of bonds or similar securities. This overall market structure characterises the Lisbon Stock Exchange, but not the Oporto Stock Exchange. In fact, in the wake of a market specialisation agreement signed between the associations of the two Portuguese stock exchanges in June 1994, all spot

market transactions have tended to be concentrated in Lisbon while the Oporto Stock Exchange became responsible for the launching of the options and futures markets which happened in the first half of 1996.

Annex

Monetary programming used by the Bank of Portugal in the period between the abolition of credit ceilings and the entry of the escudo into the ERM

In the early 1990s the Bank of Portugal's interventions in the money market were broadly based on the following monetary programming framework:

1. Target for money demand/monetary aggregate L^-, excluding liabilities of non-monetary financial institutions.
2. Liabilities included in L^- not subject to reserve requirements (e.g. currency in circulation).
3. Liabilities subject to reserve requirements not included in L^- (e.g. deposits of emigrants).
4. (= 1 – 2 + 3) Base of incidence of the reserve requirements of monetary institutions.
5. Coefficient of operational (compulsory plus estimated voluntary) reserves.
6. (= 4 x 5) Demand for reserves of monetary institutions.
7. Ad hoc estimate of the reserve requirements of non-monetary financial institutions.
8. *(= 6 + 7) Target for the reserve requirements of the financial system.*
9. Currency in circulation (plus cash in vaults).[8]
10. Net foreign assets of the Bank of Portugal.
11. Net credit to the administrative sector by the Bank of Portugal.
12. Other items of the balance sheet of the Bank of Portugal, net (liabilities minus assets).
13. *(= 8 + 9 – 10 – 11 + 12) Intervention in the money market (+ = supply of liquidity; – = absorption of liquidity).*

[8] For operational reasons, the reserve requirements comprise only deposits with the Bank of Portugal.

Changing financial systems in open economies: Sri Lanka's experience

A.G. Karunasena*

1. Introduction

After gaining independence in 1948, Sri Lanka has come almost full circle with respect to economic policy regimes. In the early 1950s, the country followed pro-enterprise liberal economic policies with little direct government involvement in economic activity and with minimum intervention in foreign trade and exchange controls. However, direct government intervention in and control over economic activity commenced in the late 1950s and increased in the 1960s, transforming Sri Lanka basically into a semi-planned mixed economy. By the early 1970s, the economy had become highly regulated and controlled. In 1977, a complete turnaround in the country's economic policy was initiated with the introduction of a market-oriented policy package featuring the deregulation of market activities and the reduction of direct government participation in the economy. The liberalisation programme was continued in the 1980s, making the economy the most liberalised in the southern Asian region.

2. Financial sector developments

At the time of the establishment of the Central Bank of Sri Lanka (CBSL) in 1950, the financial system in Sri Lanka was at a very early stage of development. It comprised only ten commercial banks, largely branch offices of foreign banks, and a limited number of non-bank financial institutions such as savings banks and long-term lending institutions, which were still rather in their infancy. Thus, at the time the central bank was founded, the institutional system of both the monetary sector and the

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non-monetary sector was woefully inadequate in relation to the aspirations of an independent developing nation. In this context, as in other developing countries, an important function of the Government and the CBSL was to promote the development of the country's financial system.

In the 1960s and 1970s, the major emphasis was on localising and expanding the financial system into remote areas with state support and participation. The Government intervened in the financial sector directly by establishing new public sector financial institutions and introducing new regulations and controls on financial sector activities. Consequently, the banking sector, until then dominated by expatriate banks which mainly met the financial requirements of the foreign trade sector and the need for working capital of the plantation sector, underwent a radical change as local state banks instead gained the dominant position in the financial system. The state banks continuously increased their relative share in the banking sector by extending their services into new economic sectors and into the remote areas of the country. Meanwhile, there was little or no private sector involvement in financial activities during this period. The private sector was even restricted in taking up or expanding business in particular areas of the financial services industry, which created a public sector monopoly in these segments of the financial sector.

Financial sector reforms

When the new liberalised economic policies were introduced in 1977, the financial sector was therefore highly controlled and regulated, as well as being dominated by public sector institutions, suppressing the dynamism of the financial system and impeding the efficient allocation of financial resources. However, the liberalised economic policies which placed more emphasis on market forces in economic decision-making and on the private sector in economic development necessitated commensurate changes in the financial system. At the same time technological developments improved the integration of financial markets and facilitated the introduction of more sophisticated new financial instruments, diluting the effectiveness of traditional non-market-oriented monetary policy measures. In this context, a financial sector reform programme was undertaken after 1977 with the objective of creating an efficient and dynamic domestic financial system, taking into account financial sector developments in the rest of the world. In summary, the main features of

the financial sector reforms undertaken after 1977 were deregulation of financial sector activities and greater reliance on market-oriented measures in the implementation of monetary policies. Reform measures centred on the following areas:

- deregulation;
- reform of institutions and instruments;
- the setting of interest rates;
- credit allocation;
- reducing the cost of financial intermediation;
- strengthening the legal, accounting and regulatory frameworks for financial institutions and improving financial sector management; and
- emphasising market-oriented policy measures in monetary management.

Accordingly, barriers to the development of the financial system were removed and incentives were provided to spur its growth without direct government participation. As entry restrictions were removed, foreign banks of good repute were allowed to open branches in Sri Lanka while the domestic private sector was permitted to establish new banks to improve competition. Consequently, 15 new foreign banks opened branches while share issues for two new domestic private banks were successfully launched. Similarly, the private sector was permitted to create new special financial institutions, including finance companies, merchant banks, leasing companies, unit trusts and foreign currency banking units. Furthermore, financial institutions were allowed to introduce new financial instruments and services in line with the emerging financial requirements of the economy and technological developments. The legal framework of the financial system was improved by amending existing and enacting new legislation. Already, a number of steps have been taken under the new legislation, covering financial sector licensing, minimum liquidity and capital adequacy ratios, single borrower limits and limits on share ownership, guidelines on lending to directors, auditing and accounting standards, and bad debt provisioning.

Financial markets

Following the economic reforms of 1977, financial markets in Sri Lanka underwent rapid change. As the new economic policies emphasised

private sector involvement in economic activity, improvements in the functioning of the money, foreign exchange and capital markets became necessary. Measures taken to create a more favourable financial environment in which the money market could better develop included the introduction of new instruments, a liberal regime for establishing new institutions and the reform of existing institutions and instruments. Consequently, major segments of the money market, such as the inter-bank call-money market, and the primary and secondary Treasury bill markets, as well as the internal foreign exchange market and the offshore exchange market, expanded rapidly. The development of the Treasury bill market has served a number of useful purposes. First, it has helped to improve monetary management through greater control of the monetary base. In particular, it enabled the monetary expansion resulting from high fiscal deficits to be contained. Secondly, it has provided a convenient short-term investment outlet for financial institutions with excess liquidity, inducing them to continue their deposit mobilisation efforts unabated. Thirdly, it opened up a market-based borrowing source for the Government. Operations in central bank securities market were also conducted in the open market during periods of excess liquidity. In 1977, with the introduction of a unified exchange rate system under a managed floating exchange rate regime, most of the previous exchange controls were abandoned. The external liberalisation programme was implemented in stages and culminated in the acceptance of the obligations of Article VIII of the IMF Articles of Agreement in March 1994.

Sri Lanka has been following a gradual but continuous process of financial sector reform as a major part of its overall economic reform programme launched in 1977. In terms of timing, the reform of the domestic financial sector proceeded in parallel with the liberalisation of the current account, but preceded the programme for opening the capital account.

3. Monetary management in the new environment

In Sri Lanka, the central bank bears responsibility for formulating and implementing an appropriate monetary policy so as to maintain the stability of the Sri Lankan rupee while simultaneously allowing the economic development objective to be pursued. The stabilisation objec-

tive includes maintaining the domestic as well as the external value of the currency, while the development objective requires promoting and supporting a high level of domestic production, employment and real income on the one hand, and encouraging a full development of the productive resources of the country on the other. The requisite authority to influence the cost and availability of money is vested with the central bank by the Monetary Law Act (MLA). In formulating its monetary policy package, the CBSL takes into account the prevailing and prospective domestic economic situation, the stance of government policies and budgetary operations and emerging external sector developments. Short-term economic developments, particularly monetary and price developments, exchange rate fluctuations and changes in the external asset position are continuously monitored by the CBSL and monetary policy measures are designed accordingly within the framework of the MLA. Moreover, the MLA stipulates that, whenever domestic monetary stability is threatened or abnormal movements in the money supply and/or the price level endanger stability, the CBSL must submit a report to the Government covering causal factors, probable effects on the economy and required corrective measures. The MLA defines such abnormal movements as an annual change of more than 15% in the money supply or a change in the consumer price index of more than 10% on a point-to-point basis.

Monetary policy instruments

The CBSL has at its disposal a wide range of instruments, both direct and indirect, for the conduct of monetary policy. Indirect measures include the Bank rate, the variable reserve ratio and open market operations. The imposition of credit ceilings, minimum ratios of bank capital and surpluses to assets, cash margins against letters of credit (LCs), control over bank interest rates and directed lending are available under the direct instrument category. By imposing effective restraint on the volume of commercial banks' operations, these direct controls serve to regulate money and credit. Such measures are particularly useful to the authorities for quickly restoring order in the credit market should conventional indirect policy measures fail or be slow to bring about the desired results. The CBSL has been using both types of measures as the particular situation demands. In addition, monetary targets are pursued from time to time by applying

moral suasion, whereby the commercial banks are requested to exercise caution in their lending.

Relative importance of objectives and choice of instruments

In the Sri Lankan experience with respect to the emphasis place on particular monetary policy objectives, four periods can be identified for analytical convenience: 1950–59, 1960–77, 1978–89 and 1990 onwards. During the 1950s, when the macroeconomic situation was characterised by reasonable economic growth coupled with a fair degree of price stability and overall economic policy was directed at developing a mixed economic system, monetary policy was used mainly for stabilisation purposes. In the context of a worsening balance-of-payments situation and a changing stance of overall economic policy towards a more controlled and regulated system, monetary policy graduated from being a mere stabilisation instrument into a policy with a wider scope encompassing development issues as well. Accordingly, during the 1960s and 1970s, while the basic orientation of monetary policy was towards preserving monetary stability and protecting the balance of payments, a number of measures were also taken to facilitate the flow of financial resources to selected vital sectors of the economy. The economic liberalisation programme implemented after 1977 gave monetary policy a particularly significant role to play, not only in achieving stability, but also in creating an appropriate financial climate in which the goals of the new economic strategy could be realised. During this early liberalisation phase, monetary policy also had to cope with the continuing pressure of a sharp fiscal expansion which worsened macro balances in the economy. Thus, the major feature of the choice of monetary policy objectives during 1977–89 was the attempt to strike a balance between stabilisation and development objectives, taking specific short-term developments into consideration. Following the introduction of the second phase of the economic liberalisation programme in 1989, the chief emphasis in monetary policy was placed on economic stability, since this was viewed as a precondition for achieving sustainable economic growth.

Over the years, the CBSL has had recourse to a wide range of instruments in implementing monetary policy. Initially, conventional instruments such as the Bank rate and the statutory reserve ratio were used extensively; open market operations in the CBSL's own securities were relied

upon to mop up the excess liquidity which resulted from occasional export booms. In the 1960s and 1970s, direct control measures continued to be used extensively in addition to the traditional indirect measures. However, in the most recent past the salient feature of monetary management has been the shift towards more market-oriented monetary policy instruments and the reduced reliance on non-market-oriented measures.

New developments

A number of improvements have taken place in the implementation of monetary policy in the period since 1978. First, a new money supply aggregate was introduced to take account of changes in the financial system. As time and savings deposits became as liquid as demand deposits owing to technological developments and a high-interest-rate policy regime caused depositors to move more funds into interest-bearing deposits, the narrow money definition, covering only currency and demand deposits held by the public, became less suitable for measuring the demand for money. In order to adopt a realistic monetary aggregate for policy purposes, a new broad monetary aggregate, M_2, was introduced in 1980 including the time and savings deposits held by the public with commercial banks. Secondly, the entire monetary policy strategy was refined by identifying new monetary indicators, such as the monetary base and the money multiplier, that could serve as targets for policy purposes. Thirdly, action was taken to develop the necessary prerequisites – essentially a well-functioning money market – to implement market-oriented monetary policy measures, while maintaining compatibility with the overall new economic policy orientation. Finally, each year a monetary programme has been prepared that takes into account economic growth, expected inflation, budgetary operations and the balance-of-payments situation, and steps have been taken to ensure its compatibility with commercial banks' credit and deposit mobilisation programmes.

4. Move towards market-based monetary measures

As noted, a prominent shift in the implementation of monetary policy in the recent past was the move towards a greater market orientation of policy instruments. In 1977, Sri Lanka chose to adopt a new economic strategy that marked a significant departure from the closed economy

model adhered to until then. The main features of the new strategy included a greater reliance on the market mechanism for resource allocation, the gradual dismantling of import and exchange controls, the establishment of an outward-oriented growth strategy and attracting private foreign capital to supplement domestic resource flows. Monetary policy thus had to be refocused accordingly. This involved a gradual transformation of policy from direct controls to market-based policy measures which were considered to be more efficient in creating a healthy environment for resource allocation, as well as qualitative changes in the scope, coverage and strategy of monetary policy. The low-interest-rate policy that had played a central role in the stance of monetary policy during the pre-1978 period with a view to maintaining a low inflation rate and encouraging investments gave way to a new policy package in which interest rates were allowed to respond freely to market forces. Consequently, the entire structure of interest rates moved to a higher plateau, in the process raising real interest rates and encouraging financial savings while discouraging wasteful spending.

Open market operations have been the most intensively used market-based instrument in the recent past. In the mid-1980s, the CBSL issued its own securities (CBSs) to mop up the excess liquidity that had resulted from a tea export boom. However, CBSs lacked a secondary market. More recently, open market operations have largely been conducted with Treasury bills. With this shift, new institutional and operational procedures for the Treasury bill market were developed rapidly, including weekly primary auctions, an active secondary window at the CBSL, the introduction of Treasury bills with different maturities, the appointment of accredited dealers and the creation of a repurchase (repo) market. The operations in the Treasury bill market have made the management of short-term liquidity in the economy more efficient and have guided reserve money growth. More intensive use of open market operations as a monetary policy tool has resulted in a number of favourable developments, e.g. an expansion in short-term money market activity, and an improvement in resource allocation as distortions from non-market-oriented measures were reduced and fiscal management was made more easy. Another favourable impact has been the greater effectiveness of the interest rate weapon as an instrument of monetary management. With the development of the Treasury bill market, the Treasury bill rate soon became a reference rate for other short-term rates in the money market.

Although the adverse impact of direct measures of monetary control was well known, the CBSL had to resort to them at times when conventional, market-oriented policy measures failed to remedy an expansionary monetary situation. However, the CBSL always tried to shift back to market-oriented policy measures as soon as the situation improved to a satisfactory level. Some of the direct measures, in particular margin requirements against LCs and ceilings on import credits, could be considered as short-term policies that were complementary to exchange rate policies aimed at improving the country's balance-of-payments position. Similarly, the refinancing facilities that were provided to exporters so as to improve their export competitiveness through a lowering of the cost of their funds reduced the exchange rate adjustments that would otherwise have been required under the export promotion policy. However, the authorities were able to move away from all these non-market-oriented policy measures and rely basically on indirect methods of monetary management.

5. Policy responses to capital inflows

Capital inflows into Sri Lanka rose significantly during the period 1991 to 1993, decelerating somewhat in 1994 owing to external as well as internal factors. In 1993, annual net capital inflows were high at about 4.5% of GDP; including private transfers, they stood at about 5.5%. As in other developing countries, both the favourable and the negative effects of capital inflows were evident in Sri Lanka. A positive result was the increase in domestic investment of about 3–4% of GDP during the high capital inflow period. More negative was its contribution to rapid monetary expansion, fuelling the already high domestic inflation rate. Thus the policy dilemma was how to accommodate and encourage the potentially favourable impact of the inflows on investment and growth while at the same time curbing their destabilising effects. The principal response of the authorities was to attempt to sterilise the impact of the inflows on monetary aggregates. Sterilisation was based mainly on raising statutory reserve ratios and on open market operations. However, the degree of sterilisation was eased in 1993 as concerns grew regarding its impact and effectiveness in response to sustained capital inflows. First, by raising domestic interest rates, sterilisation reduced the beneficial impact of capital inflows

on investment and growth. Secondly, the sharp rise in interest rates was viewed as intensifying the conditions that, at least in part, had originally attracted inflows. Finally, the large quasi-fiscal costs to the central bank and the increase in budgetary debt service payments, reflecting rising interest rates, were also matters of concern.

Thus the experience of the recent past, including the growing openness of the economy, shows that sterilisation through monetary policy has become a less effective policy response to capital inflows. But neither is accommodation of capital inflows through exchange rate appreciation a medium-term solution for a developing country. Hence accommodation of capital inflows through fiscal measures supported with appropriate monetary and exchange rate policies is left as the only sustainable policy measure.

6. Constraints and problems in moving towards market-based instruments

It is well known that a developed and active money market is a prerequisite for the effective and successful conduct of open market operations, the CBSL's favoured policy instrument. In Sri Lanka, the money market is still narrow and the spectrum of available instruments and existing institutions is limited. The interbank market is thin, being confined to the call-money market and the central bank's secondary window for Treasury bills. Call-money rates are volatile, reflecting the high cost of arbitrage between the interbank market and the Treasury bill market. However, the recently introduced repo market based on Treasury bills has stabilised call-money rates at the lower level. Moreover, the CBSL is planning to introduce reverse repo facilities based on Treasury bills with a view to stabilising call-money rates at the upper level as well.

Because of the lack of other money market instruments, banks' Treasury bill holdings can show sharp short-term fluctuations. These fluctuations could be minimised by developing a greater variety of money market instruments, as well as by establishing deeper primary and secondary markets for these instruments.

One of the major challenges which the CBSL faced in the past when formulating its policies was the expansionary pressure exerted continuously on the money supply by the need to finance large government

deficits. The country's institutional system and the arrangements for day-to-day policy decision-making have not been particularly conducive to maintaining consistency between the respective stances of monetary and fiscal policy. By creating excess liquidity in the economy, the expansion of government deficits in those circumstances resulted in an additional burden for monetary policy. More recently, the Government has attempted to reduce its financing requirement but has been only partially successful. Moreover, even this partial correction on the fiscal front was achieved mainly at the expense of capital expenditure, thus sacrificing long-term growth prospects.

Unexpectedly large fluctuations from abroad, affecting both commodity and financial markets, can create difficulties for monetary management in small open economies. As noted before, the tea boom experienced in 1984–85 forced the CBSL to market its own securities in order to mop up the resulting excess liquidity.

Efficient financial intermediation is a prerequisite for effective monetary management implemented with market-based instruments. However, a number of fiscal policies, such as the taxation of financial instruments, are not conducive to an efficient intermediation system.

The oligopolistic nature of Sri Lanka's commercial banking system, in which two state banks dominate business (still accounting for about 60% of deposits and credit), militates against a smooth functioning of the market. These two dominant banks can exert undue influence on the determination of interest rates and liquidity in the call-money market. Moreover, their inefficiency is one of the major reasons for the prevailing high interest spread (about 6%) in the banking sector.

The existence of a large semi-government sector, which is not cost-sensitive, constitutes a further constraint on market-based monetary management. As several large public corporate borrowers are not very responsive to interest rate changes, the effectiveness of monetary policy is eroded. Although the public enterprise reform programme forced a number of public corporations into the interest-sensitive private sector, heavy, non-interest-sensitive quasi-fiscal borrowing continues to prevail, reducing the impact of interest rate changes on the flow of credit.

It is difficult to implement successfully a market-based monetary policy system when overall macro policies lack a clear market orientation. Given that in a modern economy the government sector and the external sector are closely linked with the monetary sector, there is a need to align

fiscal and exchange rate policies with the stance of monetary policy. High and volatile inflation rates and an unrealistic exchange rate are not conducive to implementing a market-based monetary policy system.

A final major constraint observed in moving towards market-based monetary management has been the underdeveloped bond market. Competitive markets in medium and long-term government bonds have yet to be established. Moreover, almost all resources flowing into the captive market for long-term deposits are used for deficit financing, discouraging the development of a domestic bond market. Steps needed to develop the long-term bond market would therefore include a market-determined interest rate for government securities and the release to this market of long-term resources currently held captive.

The changing financial system in Taiwan

Yen Chrystal Shih*

1. Progress in the deregulation of financial institutions

Taiwan, a highly open economy, has been ranked among the top 20 trading countries in the world for 12 consecutive years. In 1995, its exports and imports amounted to US$ 111.7 billion and US$ 103.6 billion respectively. As at the end of May 1996, the country's foreign exchange reserves amounted to US$ 84.8 billion, the second highest in the world when measured in per capita terms. Foreign assets held by the private sector amounted to approximately US$ 65 billion. In view of the increasing need for financial services to keep pace with the rapidly growing external sector, extensive financial reforms have taken place over the last decade. In particular, most reform measures taken have been directed towards market orientation and internationalisation with the aim of developing Taipei into a regional financial centre.

Beginning in the early 1980s, the Central Bank adopted a series of measures to gradually free banks from long-standing interest rate controls. In 1989, bank interest rates were totally liberalised. This dismantling of interest rate controls has enabled banks to compete more effectively. However, in 1989 nearly 46% of deposits and 68% of loans in Taiwan were handled by the 12 state-run banks, and the establishment of new private commercial banks was not yet permitted. Owing to the lack of a competitive market structure, the immediate impact of interest rate liberalisation in terms of putting pressure on the spreads between deposit rates and loan rates was not very significant.

Two further events which followed interest rate liberalisation also affected interest rate competition. First, the Fair Trade Law, which prohibits the manipulation of prices, including interest rates and fees charged by banks, came into effect in 1991. Secondly, the sudden entry of

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15 new private commercial banks (each with a paid-in capital of over NT$ 10 billion) between the end of 1991 and the middle of 1992 initiated price competition, especially with regard to passbook savings deposits. In addition, the entry of new private commercial banks exerted an impact on the market structure of banking activity. At the end of 1995, there were 16 new private commercial banks, with a 7% market share of deposits and a 10% market share of loans, the market shares of deposits and loans held by state-run banks falling to 35% and 54% respectively.[1] Furthermore, the privatisation of state-run banks is currently under way, and this will further improve the market structure of the banking sector.

In addition to deregulation of the entry of new private commercial banks in 1991, entry barriers in other parts of the financial sector were also removed in the late 1980s and early 1990s. The establishment of new securities firms was allowed in 1988, of new insurance companies in 1992, and of new bills finance companies and new securities finance companies in 1994. In addition, geographical limits regarding the branching by regional banks began to be relaxed in 1994. The growing number of new financial establishments has spurred greater competition and contributed to the vitality of the financial markets. Some progress with respect to entry deregulation has also been made in an international direction in order to modernise the local financial sector. Foreign banks were allowed to set up branches in Taiwan as early as 1964, although numerical and geographical limits on their branch networks were gradually lifted only in the mid-1980s. Foreign securities firms were permitted to set up branches in Taiwan in 1989, and foreign insurance companies to operate in the country in 1994.[2] At the end of May 1996, 39 foreign banks had established a total of 62 branches in Taiwan and another 26 foreign banks had established representative offices. A total of 10 foreign securities companies have set up branches in Taiwan, 21 foreign insurance companies (covering both life and property) have established branches or representative offices.

As regards lines of business, the activities in which a financial institution may be authorised to engage are prescribed by the Central Bank and the Ministry of Finance, within the framework of the Banking Law. Both

[1] The remaining market shares in loans and deposits were accounted for by existing private banks, foreign banks, community financial institutions and the postal savings system.

[2] In accordance with the ROC-USA trade negotiations in 1978, American insurance firms were allowed to do business in Taiwan in 1981, earlier than other foreign life insurance firms.

domestic and foreign financial institutions in Taiwan are allowed to engage in an increasingly wide range of financial activities. Banks, for example, may now engage in offshore banking, foreign currency deposit-taking, securities brokerage and underwriting, and trading in financial derivatives.[3]

2. Developments in financial markets

In addition to the above-mentioned deregulatory measures with regard to financial intermediaries, the Central Bank has also played an important role in the establishment and reform of local financial markets. This section describes recent developments in the short-term bills market, the New Taiwan dollar call-loan market, the foreign currency call-loan market, the stock market and the bond market.

The short-term bills market

The short-term bills market, established in 1976, has the function of extending short-term funds to firms, especially smaller ones, which often face difficulties in borrowing from banks. Since it is enterprises and banks, and not the Government, that are most deficient in short-term funds, commercial paper and certificates of deposit are the major types of money market instrument issued. The volume of Treasury bills outstanding is by contrast relatively small. When compared with neighbouring countries in the East Asian region, the outstanding volume of Taiwan's money market instruments (including bonds with maturities not exceeding one year) is exceeded only by the money markets of Japan and Korea, while in terms of turnover the Taiwanese market is second only to that of Japan.

In recent years, different local financial institutions, attracted by the high profits made by the big three existing bills finance companies, have sought to enter the market. The Central Bank and the Ministry of Finance

[3] So far, note issuance facilities, NT dollar forward rate agreements, NT dollar interest rate swaps, NT dollar interest rate options, third-currency swaps, third-currency futures, third-currency options, third-currency margin trading, foreign currency interest rate swaps, foreign currency forward rate agreements and cross-currency swaps involving the NT dollar are all allowed. However, currency futures, currency margin trading and currency options which involve the NT dollar are still prohibited.

eventually allowed banks to engage in short-term bill transactions on a brokerage or dealer basis in 1992, and to undertake underwriting and certification business in 1995, and also allowed new bills finance companies to be set up in 1994. At the end of May 1996, there were a total of 11 bills finance companies in operation. The competition in this market has intensified, and the market has consequently grown more rapidly than before. Furthermore, how to build a wall between commercial banking and investment banking has now become a new and important issue for the financial regulatory and supervisory bodies.

In fact, the urgent need for strict financial supervision of the short-term bills market has already been illustrated by the serious fraud scandal at the International Bills Finance Co., one of the big three bills finance companies, which surfaced in August 1995 and jeopardised the functioning of the market. The Central Bank immediately injected emergency funds of over NT$ 30 billion into the market to meet the large redemptions by investors. This incident illustrates the importance of adequate internal controls in financial institutions and strict supervision by inspectors in order to ensure the orderly functioning of financial markets.

Apart from this incident, a long-discussed problem in the short-term bills market is the complicated procedure for the issuance of short-term bills. In the absence of a credit-rating system, most private enterprises are required to obtain guarantees from either banks or bills finance companies when issuing short-term bills or corporate bonds.[4] This in practice limits issues of money market instruments, and also makes it difficult for investors to evaluate credit risks associated with the investments. To tackle this problem, a credit-rating system is to be set up in 1996. Its first task will be to evaluate the credit ratings of the banks and bills finance companies that offer guarantees for bills or bonds issued by private enterprises. This system will serve to streamline the issuance procedure, which may also lower issuance costs in the future. In addition, the current market settlement system also needs to be improved. It has been recommended that a book-entry system be introduced to replace the current practice of physical delivery.

[4] Public enterprises and first-tier listed companies are not required to obtain a guarantee when issuing bills and bonds. However, first-tier entities may sometimes seek to boost sales by obtaining a guarantee from banks or bills finance companies for their new issues.

The interbank NT dollar call-loan market

The interbank NT dollar call-loan market, which enables banks to adjust their reserve positions, was established in 1980. Bills finance companies, securities finance companies and the local branches of foreign banks are the major borrowers in this market, and large state-run banks are the major lenders. In 1994, to prevent the spillover effect arising from stock market speculation from impairing the effectiveness of the interbank call-loan rate in reflecting bank reserve availability, the Central Bank ordered the securities finance companies to permanently withdraw from this market. In addition, the electronic funds transfer system was established in May 1995 in order to promote transactions in the market as well as to improve the efficiency of the payment system for interbank transactions. Furthermore, in order to conform to international practice, business tax on transactions in interbank call loans denominated either in the NT dollar or in foreign currencies, as well as transactions in corporate bonds, bank debentures and financial derivatives, was abolished in September 1995.

However, the sources of funds in the market are still concentrated in the hands of two large state-run banks, the Bank of Taiwan and the Taiwan Cooperative Bank. The Bank of Taiwan, acting as fiscal agent on behalf of the provincial government, holds the major part of provincial government deposits, and the Taiwan Cooperative Bank, serving as a central banking institution for cooperatives, holds a portion of the reserves of community financial institutions. The authorities first have to deal with these thorny institutional problems in order to promote the efficiency of the market and improve the functioning of the interbank rate as an information indicator for monetary policy.

The interbank foreign currency call-loan market

Although the Central Bank has played an important role in the establishment and reform of local financial markets, it only trades in the markets when irregularities occur. The sole exception to this is found in the local foreign currency call-loan market, which was established in 1989. During the early stages of its development, foreign currency funds were often in short supply among banks. This phenomenon was partly due to the fact that banks were reluctant to hold large amounts of foreign currency funds

so as to avoid exchange rate risk. The Central Bank, taking advantage of its large holdings of foreign exchange reserves, provided up to US$ 10 billion, DM 1 billion and ¥ 15 billion as seed funds in order to foster the development of this particular market. In addition, online link-ups have in recent years been arranged between the local money brokerage house and large international money brokerage houses in Singapore, Hong Kong and Japan.

The stock market

Taiwan's relative price stability during the past three decades and the burgeoning trade surpluses of the past two decades have contributed to a large pool of private savings and financial deepening. Hence, the country has had little need to rely on foreign capital to fund the development of local financial markets. In fact, the excessive liquidity generated by the huge trade surpluses of the second half of the 1980s was once a great cause for concern in view of the speculative fever that swept over the local stock market. Reforms in this market have been very necessary. In approaching the reform of the market, the first step is to identify the main obstacles to its development. Taiwan's stock market was established in 1962. At the end of May 1996, a total of 362 companies were listed on the exchange, and there were 227 securities companies. Total market capitalisation at the end of May amounted to some US$ 210 billion at the exchange rates then prevailing. However, the outstanding volume of shares is still relatively small. Furthermore, individual investors usually account for more than 90% of share transactions, which is much higher than the averages of 30–40% in the case of the United States and Japan. Speculative behaviour is intrinsic in such a market structure, as evidenced by high turnover rates.[5]

In recent years, a series of measures have been taken by the financial authorities to reform this market.[6] Because the stock market has gradually matured, and has been opened to foreign participation, Morgan

[5] The turnover rates in respect of listed stocks in the Taiwan market have exceeded 150 since the mid-1980s, with a peak of 523 in 1989, while those in the US or Japanese markets have been somewhere between 40 and 100.

[6] Major liberalisation measures with regard to the stock market introduced by the authorities have included: permission for foreigners to invest indirectly in the local stock market by purchasing beneficiary certificates issued abroad by local securities investment and trust companies (1983); completion of a two-phased procedure to computerise stock trading (1985 and 1988); a gradual increase in the percentage limit on daily fluctuations in the prices of individual

Stanley has announced that, from 2nd September 1996 onwards, Taiwan's share prices will be included in the Emerging Market Free index and will account for 7.9% of the index. It is expected that this inclusion will attract more foreign investors to the Taiwan stock market. In the future, the authorities will continue to release the shares of public enterprises through the privatisation process, assist qualified private companies in preparing for stock market listings, and also encourage more institutional investors to participate in the market.

The bond market

The local bond market is relatively underdeveloped when compared with the stock market and the short-term bills market. The main impediment to its development has been associated with limited bond issues. There are two major factors behind this slow development of the issue market. First, the 0.1% transactions tax on corporate bonds discourages trading in the secondary market directly, while a lack of liquidity makes the issue of corporate bonds in the primary market difficult in the first place. Secondly, issues of government bonds have also been small under the conservative fiscal policies of the past 30 years, but this situation has gradually changed, with more government bonds being issued since the implementation of the Six-year National Development Plan in 1991.

In order to broaden and deepen the bond market, the financial authorities have in recent years allowed the issue of foreign currency bonds and NT dollar bonds by the Asian Development Bank and the issue of Taiwan

shares (1988 and 1989) to the current level of 7%; permission for the establishment of new securities firms (1988); permission for foreign securities firms to set up branches (1989); permission for foreign institutional investors to invest directly in the local stock market (1990); permission for the establishment of new securities finance companies (1994); abolition of the requirement that a foreign institutional investor keep more than 75% of its funds invested in the stock market after the funds were inwardly remitted (1995), and permission for foreign institutional investors to invest up to 30% of incoming portfolio funds in money market instruments, government bonds and time deposits, while the remainder, if not used to purchase shares, may be held in checking accounts or passbook deposits; abolition of the US$ 7.5 billion ceiling on total foreign investment in locally listed stocks, and an increase in the maximum percentage limits on individual and total shareholdings in a locally listed company by foreign institutional investors to 7.5% and 15% respectively (1995); an increase in the maximum investment quota for each foreign institutional investor investing in domestic securities from US$ 200 million to US$ 400 million (1995); abolition of the restrictions on outward remittances of principal and income on foreign investors' investments (1996); permission for foreign individual investors to invest directly in the local stock market, and an increase in the maximum percentage limit on shareholdings in a locally listed company by all foreign institutional and individual investors to the current level of 20% (1996).

depository receipts by foreign enterprises in the local market, and have begun to regulate the timing of issues of government bonds as from the 1996 fiscal year. In the past, both the timing and the size of central government bond issues varied mainly according to the needs of the Treasury. This change will help to facilitate bond trading and establish a benchmark interest rate in the market. Currently, the revised draft of the tax law, which includes the abolition of the transactions tax on corporate bonds and bank debentures, is awaiting finalisation by the Administration. Furthermore, the Central Bank's plan to reducing reserve requirements and raise liquidity requirements will increase banks' holdings of bonds significantly. As a result of these developments, as well as the increasing demand for bonds arising from rapid growth of the insurance industry and mutual funds, together with the more market-oriented management of both government pension funds and labour pension funds, the bond market has become increasingly active since 1993. However, there are still two issues to be resolved. First, the lack of a credit-rating system applied to corporate bond issuers keeps the risks in investment in corporate bonds high. Secondly, the outdated settlement system also needs to be improved.

3. The development of the exchange rate system

Taiwan's exchange rate system alternated between dual rates and multiple rates until 1963, when a single rate arrangement was finally maintained. In 1979, the foreign exchange market was established and a system of managed floating was adopted. As the new system began to operate, the highly open Taiwanese economy was still vulnerable to large movements in exchange rates, and exchange rate policies were implemented to keep the currency within a range of roughly between NT$ 36 and NT$ 40 to the US dollar. As from 1985, Taiwan's trade surpluses expanded significantly, reaching a peak of US$ 18 billion in 1987, the year in which foreign exchange controls were significantly relaxed. With the NT dollar under strong upward pressure, the Central Bank frequently made large purchases of US dollars in the local exchange market with the intention of slowing down the appreciation. This policy of gradual appreciation, which lasted for about four years, proved a failure since it induced huge speculative capital inflows during that period, provoking excessive expansion of

domestic credit and fuelling speculation in the stock market.[7] As a result of this experience, the Central Bank changed its exchange rate policies in the late 1980s and by and large allowed the market mechanism to determine the value of the currency except in cases where it drifted away from the economic fundamentals. This experience indicates that exchange rate flexibility can be helpful in maintaining domestic monetary stability especially when quantitative restrictions on capital movements are being relaxed.

4. The liberalisation of capital flows

Expanding exports constituted the main driving force behind Taiwan's economic growth in the 1980s. However, the resulting trade surpluses also gave rise to a problem of excessive liquidity. Trade liberalisation proceeded mainly during the second half of the 1980s through the reduction of tariffs and the removal of quantitative import barriers. This opening-up of the domestic market to foreign commodities, partly in response to pressure from the US Government, has helped redress the trade imbalance and has forced local firms to become more competitive in the world market by either improving the quality of their products or developing new high-tech products. The Central Bank also embarked upon the deregulation of external financial transactions around the same period with the intention of correcting the overall external imbalance by encouraging capital outflows. It has adopted a gradual approach by first of all relaxing constraints on trade-related capital flows (current account convertibility), then easing restrictions on long-term direct investment flows, and finally easing restrictions on portfolio and short-term investment flows.[8]

There are two major reasons why the Central Bank is hesitant when it comes to lifting the restrictions on portfolio and short-term investment flows. First, Taiwan welcomes new technology from abroad to upgrade its domestic industry, but as a capital-exporting country, it is not in great need of funds from abroad. Secondly, portfolio and short-term capital

[7] Although the sterilisation was incomplete, the quasi-fiscal cost of financing high levels of bank reserve holdings by the Central Bank was already significant.

[8] An over-hasty relaxation of controls is not desired by the Central Bank because of concern that an eventual reimposition would create unnecessary uncertainty in the minds of potential investors about future rules and regulations.

flows, which move quickly across borders, often cause financial instability, especially in countries with relatively small financial markets.

At present, most of the remaining capital controls in Taiwan relate to portfolio investment. However, these restrictions, which are designed to shield the economy from a surge in speculative capital flows into the local stock market, may sometimes be ineffective. For example, some foreign institutional investors increased their actual stock investment quotas, which were worth several times the US$ 200 million ceiling, as they were able to register under the names of various affiliates. Consequently, the authorities raised the maximum investment quota for each foreign institutional investor investing in domestic securities from US$ 200 million to US$ 400 million at the end of 1995. A further example is that foreign individual investors, who were not then allowed to invest in the local bourse, sometimes opened sub-accounts in an overseas subsidiary of a qualified foreign institutional investor and invested in Taiwanese stocks under the name of the institution. Eventually, the authorities allowed foreign individual investors to invest directly in the local stock market in March 1996. In fact, market participants always seek to circumvent existing restrictions, and this usually forces the regulators to abandon ineffective controls.

Besides the microeconomic aspect of deregulation of capital flows, there are also some macroeconomic considerations. As mentioned, the adoption of a policy to slow down the appreciation of the NT dollar between 1986 and 1989 triggered monetary expansion and a surge in inflows of speculative capital through many different channels into the stock market, even though foreign investors were not allowed to invest directly in the local stock market at that time. Similarly, political tensions in 1990 as well as in the second half of 1995 and early 1996 resulted in huge capital outflows and shook the stock market. These experiences demonstrate that stable political, economic and financial conditions are also preconditions for the effectiveness of remaining capital controls.

5. The sequence of liberalisation

An ordered process of financial liberalisation is often emphasised in order to minimise the adverse impact of possible disturbances from the deregulation process on economic and financial stability. It is often suggested that

domestic financial deregulation should ideally be implemented prior to opening the financial sector to competition from foreign financial institutions and the relaxation of foreign exchange controls. Similarly, it is suggested that trade deregulation should precede the liberalisation of external financial transactions, and that current account deregulation should be implemented prior to the deregulation of capital flows.[9]

In practice, however, the sequence may be distorted as a result of political considerations or pressure from both domestic and foreign interest groups. An example in Taiwan is that the correct sequence for deregulating the banking system would be to first streamline the banking supervisory system, then privatise government-owned banks, and finally allow the entry of new private commercial banks. However, protests from different interest groups and the lengthy administrative and legislative process have seriously delayed the privatisation process and upset the planned sequence. In the event, the entry of new private banks has been allowed first, the bank supervision system has not yet been fully streamlined, and government-owned banks are not yet privatised.[10]

6. Implications for financial institutions and the central bank

Financial liberalisation and internationalisation have clearly changed the traditional contours of the financial system. The volatility of interest rates and exchange rates has increased. Competition among financial institutions has become more intense. New financial products are being developed continuously. Faced with the changes in the deregulated environment, financial institutions on the one hand have to actively seek new markets and develop new financial services to meet the growing needs of their customers, while on the other hand they need to exercise caution when developing new financial product lines.

The changing financial environment also presents important supervisory challenges. In addition to adapting outdated laws and regulations to changing market realities and improving the financial infrastructure, the Central Bank is also in a position to ensure that financial institutions are aware of the full range of risks inherent in new financial products, such as

[9] See Kuo (1989).
[10] See Liang (1992).

derivatives, when it approves such activities and to restrain financial institutions from engaging in excessive risk-taking through close financial supervision. From a longer-term perspective, it is important that the Central Bank should carefully formulate and implement its monetary and exchange rate policies with a view to maintaining macroeconomic stability, which is the prerequisite for success in sustaining the current financial liberalisation or preparing for further liberalisation measures.

The changing financial environment may also affect monetary policy operations to some extent. It is suggested in some of the literature that an efficient money market will lead a central bank to shift from non-market-oriented to market-oriented operations. In the case of Taiwan, the problems associated with traditionally high reserve requirements, such as the distortions rooted in banks' choice between taking reserve-carrying deposits and collecting funds via non-reserve-carrying debt management, and the disadvantages inherent in a local financial centre with high reserve requirements competing with foreign financial centres with low reserve requirements, have attracted considerable attention. Reserve requirements must be gradually lowered to an internationally comparable level to solve these problems. In fact, as at June 1996, the Central Bank had already lowered reserve requirements on ten occasions since 1990. In the future, market-oriented policy instruments, including open market operations, are expected to play a more important role in the Central Bank's operations, and market interest rates and exchange rates will be able to provide more valuable information for policy purposes.

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