Changing financial systems in open economies: An overview

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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

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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.

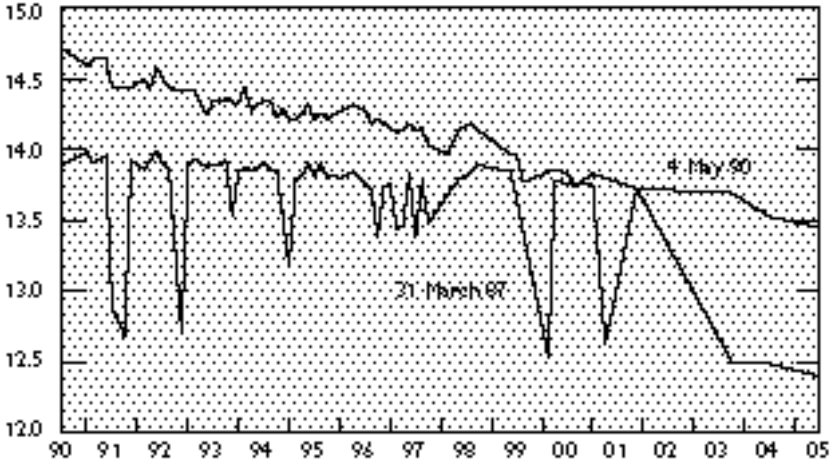
Efforts to develop a bond market in difficult conditions have included the use of index-linked or floating rate and foreign-currency denominated bonds. A number of countries under review have issued *index-linked bonds* (Iceland, Turkey – summarised in Table 10). There is much to be said on diversification 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.