

## AN ASSESSMENT OF FINANCIAL REFORM IN OECD COUNTRIES

Malcolm Edey and Ketil Hviding

### TABLE OF CONTENTS

Introduction .....	8
How Governments Deregulated their Financial Systems .....	9
Economic Rationale for Financial Regulation.. ..	11
Systemic risk .....	11
Information and monitoring roles of financial regulation .....	13
Economic Consequences of Financial Liberalisation .....	<b>14</b>
Structural changes in financial markets .....	<b>14</b>
Effects on efficiency and resource allocation .....	17
Effects on financial stability and macroeconomic management .....	21
Conclusions .....	28
Glossary of technical terms .....	32
Bibliography. ....	33

---

The authors are particularly indebted to Bruce Montador for his role in setting the overall direction of the project. They are also grateful for comments and suggestions from colleagues, in particular Jørgen Elmeskov, Michael P. Feiner, Robert Ford, Peter Hoeller, Peter Jarrett, Mike Kennedy, Constantino Lluch, Bruce Montador, Sigurd Naess-Schmidt and John Thompson. Patient and proficient secretarial assistance was provided by Andrea Prowse and Paula Simonin, while Laure Meuro gave excellent statistical support. The views expressed in this paper are those of the authors and are not necessarily shared by the OECD.

---

## INTRODUCTION

Financial systems in OECD countries during the past two decades have undergone extensive structural changes as a result of regulatory reform and technological innovation. The systems prevailing in most countries in the early 1970s were characterised by important restrictions on market forces which included controls on the prices or quantities of business conducted by financial institutions, restrictions on market access and controls on the allocation of finance among competing borrowers. These regulatory systems had evolved to serve a number of social and economic policy objectives of governments. Direct controls were used in many countries to allocate finance to preferred industries during the post-war reconstruction period; restrictions on market access and competition were partly motivated by a concern for financial stability; and controls on banks and financial institutions were frequently used as instruments of macroeconomic management.

The substantial shift to more market-oriented financial systems during the past two decades was driven by a number of interrelated factors which made direct controls increasingly ineffective in achieving their intended purposes. Among the most important factors were:

- Shrinkage of the regulatory base. This occurred through various types of regulatory avoidance (for example, the development of offshore financial centres and off-balance-sheet methods of financing by banks) as well as through a more general tendency for banks and other regulated institutions to lose business to the less regulated parts of the financial sector.
- Financial innovation and rapid technological development, which progressively increased the ease with which regulations could be circumvented.
- Macroeconomic developments, particularly the increases in fiscal deficits and emergence of inflationary problems in the 1970s, which increased the need for interest rate flexibility.

The strength of these pressures was such that some degree of financial regulatory reform was probably unavoidable, and indeed all member countries have implemented at least some liberalisation measures over the past two decades. A “core” group of reforms common to the majority of countries was the removal of most price and quantity controls on banks, liberalisation of market access within the financial services sector, and removal of foreign exchange controls. In addition to easing problems of monetary control, reforms were expected to enhance the

efficiency of the financial sector by promoting competition and removing distortions on resource allocation. Nonetheless, concerns have been raised as to whether these benefits have been realised and also concerning the consequences of deregulation for financial stability. In particular, recent examples of turbulence in currency and security markets together with large scale banking problems in a number of countries have spurred such concerns.

The purpose of this paper is to respond to these concerns by providing an overall assessment of the reform process and its economic consequences. The paper is divided into three main parts: first, a brief overview of the main reforms is presented; this is followed by a discussion of the economic rationale for financial regulation and, in the third main section, an analysis of the economic consequences of deregulation.

## **HOW GOVERNMENTS DEREGULATED THEIR FINANCIAL SYSTEMS**

The array of regulations affecting most OECD countries' financial systems in the 1960s and 1970s can be classified under the following headings:'

- interest rate controls;
- securities market regulations;
- quantitative investment restrictions on financial institutions;
- regulations on ownership linkages among financial institutions;
- line-of-business restrictions;
- restrictions on foreign entry of financial businesses; and
- foreign exchange and capital account controls

The regulations listed above can be broadly divided into two groups: those primarily affecting the ability to conduct business at market-clearing prices (interest rate and credit controls, investment rules, capital account controls); and those affecting institutional boundaries and market access within the financial sector (line-of-business regulations, controls on ownership and cross-border market entry).

In general the extent of deregulation in the first of these two areas over the past two decades has been substantial; although some minor areas of restrictions remain, such controls have been largely abolished in most OECD countries. Moreover, the removal of capital controls and the increased internationalisation of the financial services industry is likely to have made any remaining restrictions relatively easy to avoid. The process of liberalisation was not uniform, however, and there was no single model of the deregulatory process broadly followed in all countries. In some countries, particularly the United States, the United Kingdom, the Nordic countries, Australia and New Zealand, most of the important steps in

removing direct price and quantity controls were completed by the mid-1980s, while in some continental European countries and Japan deregulation tended to be somewhat more cautious and occurred over a longer period. In a few countries, notably Germany, Canada and the Netherlands, bank interest rate and capital controls were largely removed in the late 1960s and early 1970s. Remaining price and quantity regulations include some minor restrictions on interest rates on current accounts in France and the United States<sup>2</sup> and on small deposit accounts in Japan, and restrictions on international portfolio diversification by pension and insurance funds in many countries.<sup>3</sup>

In the second broad area of reform, that pertaining to institutional boundaries and barriers to competition, the extent of deregulation has been more limited. There has been a significant, though incomplete, liberalisation of international market access in financial services; and there has been some liberalisation of barriers between institutional types in countries where these had been important, particularly in Japan, the United Kingdom and Canada, with significant further liberalisation implied within Europe by the single "passport" provision of the second banking directive. This provision enables any financial institution which is authorised in one country in the European Union to supply financial services in all other Member countries.

The less extensive deregulation in the second area reflects the fact that the issues are perceived to be more complex and the case for general liberalisation less clear cut. Particularly debated is the rationale for restrictions on ownership links between banks and non-financial enterprises. Ownership of banks by non-financial enterprises is in most countries limited either by requirements that bank shares be widely held, or by general anti-trust provisions aimed at preventing concentrated ownership of a bank in cases where that could create conflict of interest. Similarly, in many countries bank ownership of non-financial enterprises is either prohibited, subject to strict limits, or requires specific approval by supervisory authorities. These restrictions are motivated by a view that such holdings would expose banks to excessive risks or may create excessive concentrations of economic power. Nonetheless, there are significant differences in regulatory structures between the major countries in this area.<sup>4</sup>

A general feature of the deregulatory process in most countries was the strong interdependence between different types of regulations. Initial steps in deregulation often had the side-effect of making the remaining regulations less effective or more highly distortionary to competition in the financial sector, and this contributed to pressures for further reform. As competition in the financial sector increased, there was also a recognition that banks and other financial institutions could be exposed to greater risks in the deregulated environment. In recent years this has prompted an increasing focus on the need to strengthen certain types of regulations aimed at limiting financial systems risks, as discussed further below.

## **ECONOMIC RATIONALE FOR FINANCIAL REGULATION**

The intended purposes of financial regulatory policies, as actually practised in OECD countries in the past, can be put into three main groups:

- to meet resource allocation objectives;
- to provide instruments of monetary control; and
- to correct perceived market failures and systemic externalities in the financial sector.

Although these categories are not mutually exclusive, in general terms the regulations that have been most comprehensively dismantled have been those primarily aimed at the first two of the above goals. This is consistent with the general consensus among Member governments that regulatory intervention to achieve these goals is likely to be inefficient compared with market-based methods. The corollary to this view is that regulatory structures should be maintained (or adopted) where they are necessary to address identifiable market failures, and can do so efficiently. The discussion below outlines two broad areas of potential market failure that may warrant regulatory intervention: first, the area of systemic risk, and second, externalities in monitoring the behaviour of financial institutions.

### **Systemic risk**

Systemic risk refers to potential threats to stability of the financial system as a whole arising from risk-taking by individual financial actors. Potential sources of systemic risk include:

- instability of the deposit base in unregulated banking, arising from the vulnerability of banks to “runs” and illiquidity;
- payments system risk, which may arise in the event of a large participant failing to meet clearing obligations;
- destabilising trading strategies: asset markets may be destabilised if sufficient numbers of participants adopt trading strategies that are “pro-cyclical”, as for example with programme trading or dynamic hedging.

Awareness of problems of systemic risk has greatly increased following a number of cases of financial instability that have occurred following deregulation. Key examples are reviewed below in the section on consequences of deregulation, and the contributions of other sources of instability (such as macroeconomic factors) are also discussed. From a regulatory-policy perspective, the general issues to be addressed concern the extent of regulation needed to reduce systemic risks to acceptable levels, and the nature of regulatory interventions likely to be least distorting to market forces. In this regard, the range of available policy instruments,

ranked broadly by their increasing degrees of restrictiveness on market forces, might be characterised as follows:

- lender of last resort facilities to provide liquidity support for the banking system;
- compulsory deposit insurance schemes;
- prudential supervision and regulation (for example capital standards); and
- policies that directly limit competition in the financial sector.

The first two of these instruments are directed essentially at avoiding "runs" and liquidity crises. They are part of the regulatory framework in most OECD countries (exceptions with respect to compulsory deposit insurance are Australia and New Zealand)<sup>5</sup> but they are generally viewed as an insufficient basis, on their own, for preserving systemic stability even in the narrow sense of maintaining stability of the banking sector. For example, the availability of a liquidity support facility by central banks requires some capacity to distinguish between illiquidity and insolvency in financial institutions, and hence is likely to necessitate some broader form of prudential oversight. Deposit insurance schemes provide consumer protection but are likely to reduce the incentives both for deposit-taking institutions to limit their aggregate exposures to risk, and for depositors to be concerned about these exposures. These problems suggest a case for prudential monitoring or regulations to limit the degree of risk that can be passed on to the public insurer.

Prudential supervision and regulation have been substantially strengthened in most countries during the past decade. A key development was the widespread adoption of the Basle accord on capital standards in banking, which phased in a minimum risk-weighted capital ratio of 8 per cent over the period 1988-1992; other prudential regulations such as disclosure requirements and limits on large exposures to individual borrowers have also been strengthened. In addition, the Basle committee and a number of national supervisory authorities are currently investigating the establishment of capital standards for other types of financial activity, particularly securities dealing. A large part of the impetus for these changes has come from a perception that increased competition has added to systemic risks by allowing or encouraging financial institutions to accept a higher degree of risk. While the pre-deregulation systems of widespread price and quantity controls were not primarily aimed at limiting systemic risks, they may in some cases have had that as a side-effect, by limiting competition and constraining banks to operate in low-risk segments of the market.

The overall trend in regulatory policies that have a bearing on systemic risk can thus be represented as a shift away from direct constraints on competition in the banking sector, towards less distortionary forms of regulation more directly targeted

at the sources of systemic risk. There remain a number of complex and unresolved issues on the agenda for further policy action in this area. These include:

- Defining the scope of the systemic safety net. An efficient regulatory system would aim to penalise or control risk-taking in each institution only to the extent that it contributes to overall systemic risk. However, the blurring of institutional boundaries appears to be making it more difficult to keep the range of institutions that are subject to prudential oversight within narrowly-defined limits. This may be a cause of problems for the regulatory authorities particularly when prudential oversight is viewed by the public as implying some form of *de facto* public guarantee.
- Securities regulation. While some issues, such as the need for adequate capital, are similar to those arising with respect to traditional intermediation business, many of the regulatory issues involved appear to be more complex. The growth of derivatives markets, whose systemic risk implications are less well understood, has added to these complexities.
- International harmonisation of policies to deal with systemic risk. A case for some degree of harmonisation rests on the links between national financial markets and the possible existence of global systemic externalities (for example, a collective benefit to the enforcement of high prudential standards at a global level).<sup>6</sup>

### **Information and monitoring roles of financial regulation**

An important externality arises from the fact that it is expensive for individuals to monitor the risk characteristics of financial institutions, giving depositors an incentive to free-ride on the monitoring activities of others. This is likely to lead to inefficiencies arising from aggregate under-investment in information and monitoring. In these circumstances there may be a case for regulators to perform a monitoring or classifying role with respect to financial institutions even where no issues of wider systemic safety are involved. One way in which this can be organised is through the existence of discrete classes of financial institutions (which can include an unregulated class) with different regulatory frameworks and therefore different risk characteristics. This kind of institutional differentiation can be argued to provide a spectrum of choice to clients and, in principle, can allow institutions to position themselves on the spectrum according to what is demanded by clients. In this view, part of the rationale for having a specialised banking sector with high standards of capital adequacy and depositor protection is that depositors have a demand for such a class of institutions, but do not themselves have the capacity to monitor and enforce the required standards. This is closely related to consumer protection goals of regulatory policy.

## ECONOMIC CONSEQUENCES OF FINANCIAL LIBERALISATION

The economic consequences of financial liberalisation are reviewed in this section in three broad areas: structural changes in financial markets; effects on efficiency and resource allocation; and effects on financial stability and implications for macroeconomic policies.

### Structural changes in financial markets

By removing constraints on the supply of financial services, deregulation has led to major increases in the size of the financial sector in most countries as well as increases in the volume of resources it absorbs. The broad nature of these trends is illustrated in Table 1. The financial sector's share in total employment has risen in virtually all countries since the late 1970s, rising on average by around half a percentage point for the group of countries reported in Table 1; this figure may understate the total increase by excluding employment in financial activities outside financial institutions, for example within large commercial and industrial firms. Investment in the financial sector also increased, rising particularly strongly in the United Kingdom, the United States and Luxembourg. Increases in financial activity have also been reflected in major increases in balance-sheet sizes relative to income, in both the personal and corporate sectors, in virtually all OECD countries. These increases have been sharpest in countries that have removed lending restrictions or interest rate controls since the 1970s, for example the United States, Japan and France; however, there have also been significant increases in these measures of financial activity in countries, like Germany and Canada, with a long history of market-determined interest rates and no direct lending controls.<sup>7</sup> The presence of these trends in countries where deregulation was not a major factor suggests that broader factors such as technological change and financial innovation have probably also been important in explaining financial growth.

Table 1. **Resources used in financial services**

	Per cent of total				
	1970-1974	1975-1979	1980-1984	1985-1989	1990-1993
Employment <sup>1</sup>	3.1	3.5	3.8	4.1	4.1
Investment <sup>2</sup>	2.3	2.9	4.7	5.8	5.4

1 Weighted average of United States, Germany, Canada, Austria, Belgium, Denmark, Iceland, Luxembourg and Norway

2 Weighted average of United States, Germany, France, United Kingdom, Denmark, Luxembourg and Norway

Source: OECD

Three broad trends can be said to characterise the structural transformation in the financial sector in OECD countries over the past two decades. The first has been increased competition. While the degree of competition is hard to measure, there can be little doubt that competitive pressures in many parts of the financial sector have strengthened considerably.<sup>8</sup> Expected benefits of competition are improvements in the range and quality of services available, reductions in costs and increases in productivity. A range of evidence suggesting that at least some of these benefits have been realised is discussed in the next section.

The second important structural trend has been “securitisation”, the increased use of securities in the intermediation of finance. This has taken a number of forms. Markets for corporate bonds and notes (commercial paper) have been developed in a number of countries, permitting larger companies to raise borrowed funds directly on the capital markets. There has been a proliferation of collective investment institutions – *e.g.* mutual funds, unit trusts and investment trusts – which have eased the access to capital markets for small savers. In many countries, money market funds – mutual funds with highly liquid, high quality assets with short maturity or variable interest rates – have emerged as serious competitors to conventional sight deposits, particularly in countries with interest rate controls on current account deposits at banks (*e.g.* the United States and France). An indicator of the growth of securitisation in the banking sector is the increasing share of banks’ total income accounted for by fee income (largely associated with securitised financing transactions) in almost all countries (Table 2). Closely linked to securitisation has been the development of increasingly sophisticated derivative markets (Table 3), which have enhanced investors’ ability to manage portfolio risks.

Table 2. **Banks: non-interest income as percentage of total income**

		1979-1984	1985-1989	1990-1992
United States	Commercial banks	24	30	34
Japan	Large commercial banks	18	32	20
Germany	All banks	19	21	25
France	Commercial banks and credit cooperatives	15	16	26
Italy	Commercial banks	27	29	24
United Kingdom	Commercial banks	31	37	41
Canada	Commercial banks	22 <sup>1</sup>	27	31
Others <sup>2</sup>		23	30	31

1 1982-1984

2 Weighted average of banks in Australia, Belgium (commercial banks), Denmark, Finland (commercial banks), Greece (large commercial banks), the Netherlands, Norway, Sweden (commercial banks), Spain and Switzerland (large commercial banks)

Source *Bank Profitability*, OECD

Table 3. **The expansion of financial derivative markets**  
Notional principal amounts in billions of US dollars<sup>1</sup>

instruments	1986	1988	1990	1992
<b>Exchange-traded instruments</b>	583	1 307	2 292	4 641
<b>Over-the-counter instruments</b>	500	1 330	3 451	5 346
<b>Grand total</b>	1 083	2 637	5 743	9 987
Ratio of grand total to:				
International claims of BIS reporting banks	0.27	0.47	0.76	1.34
OECD GDP	0.10	0.19	0.35	0.59

<sup>1</sup> Amounts outstanding at year end

Source: BIS (1993), BIS (1994)

Advances in technology available to financial institutions have contributed to these developments by improving the ability to price complex derivative instruments.<sup>9</sup>

The third broad trend has been the increased internationalisation of financial markets. The spectacular growth that has taken place in cross-border transactions in bonds and equities in the seven largest OECD countries is depicted in Table 4. In some countries the increase in the international securities trade is undoubtedly a direct result of the removal of various capital controls, but the reduction in transaction costs is, as in the case of security trading more generally, probably an equally important underlying factor in many countries. Closely related to the growth of turnover in international financial markets has been a growing international diversification of asset holdings by institutional investors.

Table 4. **Cross-border transactions in bonds and equities'**  
Per cent of GDP

	1970	1975	1980	1985	1990
United States	2.8	4.2	9.3	36.4	92.5
Japan	..	1.5	7.0	60.5	118.6
Germany	3.3	5.1	7.5	33.9	57.5
France	..	..	8.4 <sup>2</sup>	21.4	53.3
Italy	..	0.9	1.1	4.0	26.7
United Kingdom	..	..	..	367.5	690.1
Canada	5.7	9.6	9.6	26.7	63.8

<sup>1</sup> Gross purchases and sales of securities between residents and non-residents

<sup>2</sup> 1982

Source: BIS Annual Report 1992

Notwithstanding these rapid changes in financial markets, structural characteristics of financial systems still differ across countries in a number of important ways, particularly with respect to the relative importance of securities markets, equity markets, banks and other financial institutions as sources of finance for investment. These differences have tended to reflect broader regulatory and structural characteristics of economies.<sup>10</sup> Although financial structures remain distinct across countries, there is some evidence that they have been coming closer together over time as constraints on alternative forms of financing have been relaxed. In particular there has been a shift toward greater reliance on debt financing of business investment in a number of the English-speaking countries, while equity markets have assumed greater importance in Japan and a number of continental European countries where banks have traditionally had a more central role in providing finance to businesses.

### **Effects on efficiency and resource allocation**

Two key aspects of the efficiency of the financial sector are its internal efficiency (*i.e.* the quality and cost of the services provided) and its impact on allocative efficiency of the economy as a whole. In the absence of significant adverse interactions with remaining distortions or market failures, financial deregulation could be expected to yield benefits in both of these areas. The discussion below presents tentative evidence that this has been the case.

#### ***Internal efficiency***

A range of indicators of the financial sector's internal efficiency is presented in Table 5. Broad measures of intermediation costs based on average interest margins of commercial banks show no strong overall trend, although reductions in margins on this basis did occur over the 1979-1992 period in a number of countries including France, Finland, Greece, the Netherlands and Belgium. This measure, however, is probably biased in the direction of understating any tendency for margins to fall, for two reasons. First, deregulation has often removed constraints that had favoured lending to low-risk borrowers, so the average riskiness of bank lending has probably increased; in principle this requires some adjustment to arrive at a "constant risk" measure of intermediation costs. Second, an increasing proportion of financing in deregulated systems is occurring in securitised forms where costs are probably lower, thus tending to reduce average costs to borrowers. Alternative indicators presented in Table 5 arguably provide a more complete picture of financial intermediation costs. These indicators point to declines in banks' incomes from fees and net interest earnings relative to the overall capital of the banking sector, as well as declines in banks' staff costs relative to income, suggesting reduced overall inter-

Table 5. Indicators of operational efficiency]

Per cent

	1979-1984	1985-1989	1990-1992
Net interest margin <sup>2</sup>	2.57	2.58	2.61
Cross income to capital <sup>3</sup>	0.76	0.73	0.65
staff costs to gross income <sup>3</sup>	0.40	0.35	0.34
Average commissions <sup>4</sup>	0.50	0.33	0.25
Bid-ask spreads <sup>5</sup>	0.32	0.13	..

1. Weighted average of commercial banks in United States, Japan, Germany (all banks), France, Italy, Canada, Belgium, Denmark (all banks), Finland, Greece, Luxembourg, Norway (all banks), Portugal (all banks), Spain (all banks), Sweden and Switzerland.
2. Also including United Kingdom.
3. Gross income defined as net interest revenues plus fee income.
4. UK equities (per cent).
5. Eurocurrency deposits (percentage points). Simple average of US dollar, pound sterling, French franc, Deutschmark and Japanese yen. Average of daily spreads.

Source, *Bank Profitability* (OECD), London Stock Exchange, Bank of England, DRI and IMF (1991).

mediation costs and improved operational efficiency. In principle, a “risk-adjusted” measure of banks’ income, after deducting some measure of trend loan-loss provisions, would show an even more pronounced downward trend.<sup>11</sup> There are also indications of reduced transactions costs outside the banking sector including reductions in average commissions on the International Stock Exchange in London and in average bid-ask spreads in Eurocurrency markets. Unfortunately however, no comprehensive study exists as to the evolution of transactions spreads in securities markets more widely.

Measuring productivity in the financial sector is problematic because there is no universally agreed method of measuring financial output.<sup>12</sup> National accounting measures define financial-sector output largely according to the cost of the services the sector provides, which means that increases in services provided per unit of production cost are not picked up, and productivity may even be recorded as falling if relative costs of financial services are being reduced through greater competition. On the other hand, more direct but *ad hoc* measures of bank output such as transactions volumes, the real value of financial assets under management, or measures of customer service outputs such as the size of the automatic teller machine network imply very clear increases in productivity. The interpretation of these facts depends on judgements about the value of the financial transactions services that are being provided, in particular the extent to which the increased financial activity is viewed as being of economic benefit rather than representing excessive or unnecessary financial “churning”.

### Allocative efficiency

While the area of allocative efficiency is also subject to measurement difficulties, it is possible to identify three broad areas in which allocative efficiency gains might be expected.

First, the removal of direct interest rate controls and regulation-driven credit rationing should remove distortions in relative funding costs, thereby improving the allocation of investment. Although this effect is not readily observable, an illustration of the incidence of regulation on lending rates is given in Table 6. The table compares the average or representative bank lending rates with unregulated money market rates (either domestic or Euro-deposit rates) denominated in the same currency. Without distortions, one would normally expect bank lending rates to be slightly higher than inter-bank rates, reflecting higher risk. By contrast, a low or negative difference between the two interest rates gives an indication of the degree of distortions from interest rate controls: in other words, of the extent to which projects with a low market rate of return, but with preferred access to credit, can obtain financing because of regulation. Following the gradual removal of interest

Table 6. **Interest rate differentials**

Bank lending rates less market rates

		1960-69	1970-74	1975-79	1980-84	1985-89	1990-94
United States	Prime rate	0.0	-0.7	0.7	1.5	1.5	2.4
	Mortgage rate	1.6	1.6	1.5	2.1	2.1	2.1
japan <sup>1</sup>			0.2	0.6	1.0	1.0	1.8
Germany <sup>2</sup>		3.6	4.6	4.0	3.8	4.0	4.3
France <sup>3</sup>			-3.0	-1.0	-3.0	0.8	0.6
Italy <sup>4</sup>			2.1	4.1	1.7	2.3	2.2
United Kingdom <sup>5</sup>		-2.1	-1.3	-0.9	0.1	0.8	1.2
Canada <sup>3</sup>		1.7	2.5	1.3	1.7	1.3	1.2
Australia <sup>6</sup>				0.4	0.5	0.2	3.4
Belgium <sup>7</sup>		1.8	2.1	1.7	2.8	2.4	3.6
Finland <sup>8</sup>			-0.9	-1.6	-3.6	-2.1	-0.1
Netherlands <sup>9</sup>		2.0	2.7	2.7	2.2	1.7	1.0
Spain <sup>10</sup>				-1.7	0.7	2.6	2.8

1 Prime rate less 60-day financial bill rate

2 Interest rate on short-term bank credit less 3-month euro deposit rate

3 Prime rate less 3-month interbank rate

4 Overdrafts with commercial banks less 3-month interbank rate

5 Building society mortgage rate less 3-month euro deposit rate

6 Housing loans to individuals (saving banks) less 3-month interbank rate

7 Overdrafts with commercial banks less 3-month tender rate on treasury certificates

8 Commercial banks lending rate less 3-month interbank rate

9 Mortgage loan rate less 3-month interbank rate

10 Credit rate less 3-month interbank rate

Source: OECD

controls, these differentials appear to have converged to levels of around 1 to 3 percentage points.

The sharpest increases took place in France, the United Kingdom and Spain, with differentials increasing from negative levels in the early and late 1970s to clearly positive levels in the early 1990s. In Germany and Canada, where the key regulations had already been removed by the late 1960s, average lending differentials have subsequently remained relatively stable.<sup>13</sup> The relatively high differential in Germany may reflect the effects on competition of remaining controls (for example, on maturity transformation and balance sheet ratios) which tend to support the profitability of German banks.<sup>14</sup> In many countries, the tax system and its interaction with inflation added to the distortions from interest rate controls. In particular, in the Nordic countries, generous tax provisions for borrowing, combined with high marginal tax rates and high inflation, resulted in negative real after tax interest rates for many borrowers for a sustained period from the 1970s through to the late-1980s.

A second aspect of allocative efficiency is the effect of capital account liberalisation in opening up significant opportunities for international portfolio diversification. Several empirical studies suggest that the potential gains from international diversification in equities could be large.<sup>15</sup> The trend towards increased international diversification of pension fund assets and the portfolios of other institutional investors suggest that such gains are perceived to be important, and that they are actually increasingly benefiting investors in OECD countries. There is also evidence that the present degree of international portfolio diversification remains well below levels desired by investors. Remaining regulations on pension funds' foreign holdings, insufficient regulation against insider trading and different tax treatments of domestic and foreign investors have been cited as possible factors explaining the gap between actual and estimates of optimal diversification.

Third, decreased liquidity constraints could be expected to improve consumer welfare by allowing better smoothing of consumption through time. In particular, consumption spending would be expected to become less sensitive to temporary changes in income. There is some evidence that this has occurred in a number of OECD countries including the United States, Japan, Italy, Canada and Australia, in the period following financial deregulation.<sup>16</sup>

#### Effects of *financial* liberalisation on saving rates

As well as affecting the timing of consumption, however, there is reason to believe that financial deregulation might have adversely affected aggregate household saving. Although the effect on saving might be expected to be strongest in the short run, i.e. within a few years of the removal of lending restrictions, a number of economists have argued that the removal of liquidity constraints might lead to more sustained reductions in household saving ratios.<sup>17</sup> Evidence of such a nega-

tive effect of financial liberalisation on the household saving ratio has been reported in several international studies. For example, several studies have identified availability of consumer credit as a contributing factor to the relatively low level of private savings in the United States,<sup>18</sup> while the reverse appears to be the case in Japan and Italy.<sup>19</sup> In the United Kingdom, there is some evidence of a negative effect of financial liberalisation on the equilibrium saving ratio.<sup>20</sup>

The potentially large short-term effect of financial market liberalisation is illustrated in Figure 1, showing the sharp falls in saving ratios in five countries – the United Kingdom, Sweden, Denmark, Finland and Norway – in the mid-1980s. The timing of each of these falls corresponds closely with the period shortly after the removal of important credit ceilings or interest rate controls. The picture also illustrates, however, the possibly temporary nature of the drop: by 1994, all of these saving ratios had returned to their pre-liberalisation levels.

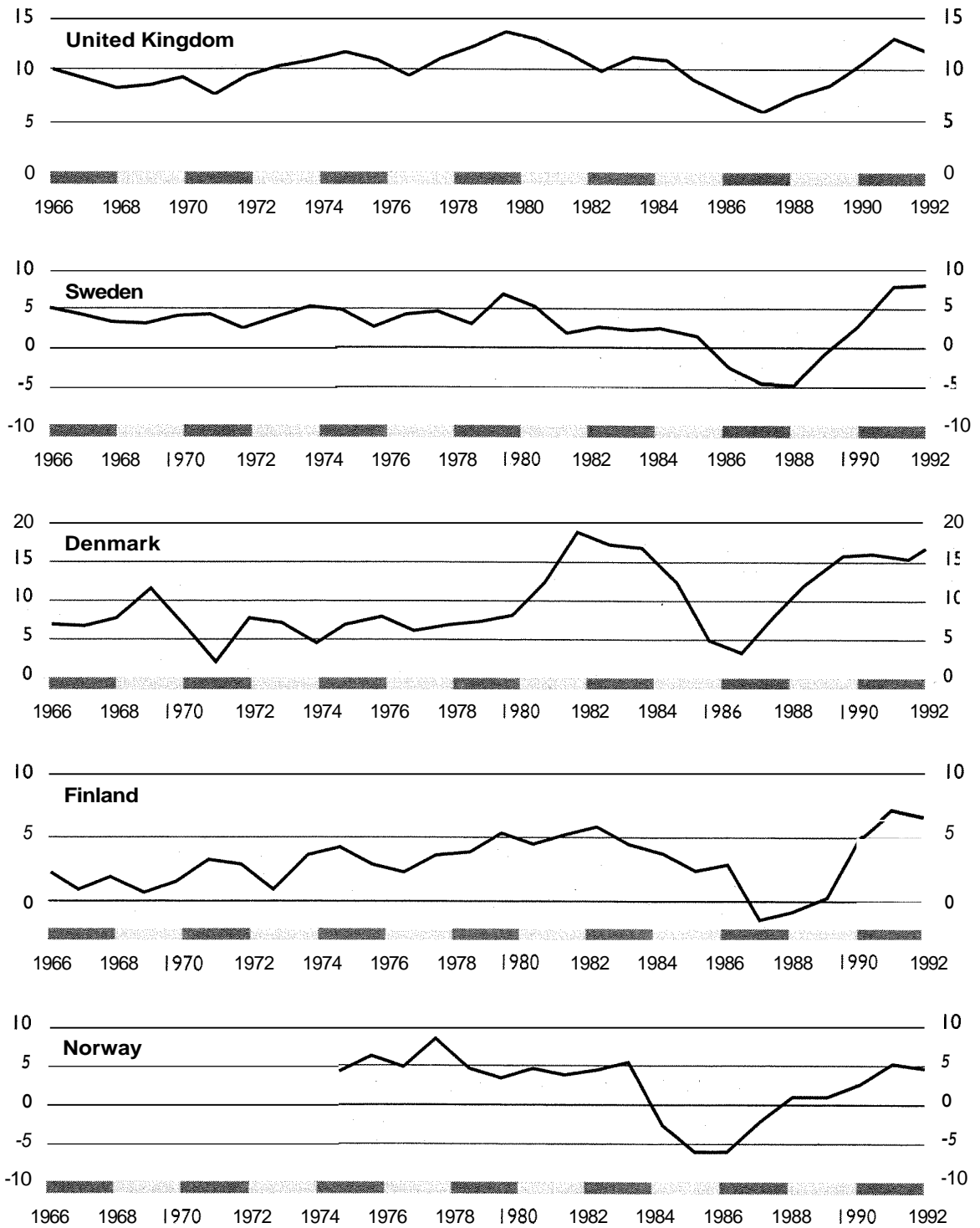
### **Effects on financial stability and macroeconomic management**

Although episodes of financial instability have been by no means confined to the post-deregulation period, there have been a number of cases where instability appeared to be either linked to deregulation or to have been made more difficult to manage as a result of the structural changes that accompanied it. Examples include crises in financial institutions in several countries, severe debt problems in some countries' corporate and personal sectors following financial liberalisation, and the intense exchange rate pressures that affected European countries in 1992 and 1993 and Mexico at the end of 1994. There is also a widespread perception that financial markets in general have become progressively more volatile, with global bond market volatility during 1994 as an important recent example. Key issues from a policy perspective are: the extent to which any trend increase in financial market volatility has actually occurred; the extent to which the episodes of instability following deregulation were essentially transitory and the contributions of other sources of instability such as inadequate supervisory or macroeconomic policies to these episodes; and the implications of financial deregulation for monetary policies.

#### ***Financial market volatility***

An assessment of data on monthly movements in stock, bond and foreign exchange markets (Table 7) suggests that there has been no general trend increase in volatility in these core financial asset markets within the post-deregulation period, although of course exchange rates and bond yields are substantially more variable than when they were directly controlled. In the case of government bond markets, volatility in many countries peaked in the early 1980s, partly reflecting sharp movements in US interest rates and also big changes in inflation rates around

Figure I. *Household saving ratios'*  
Per cent



I. Household saving as a percentage of disposable income.  
Source: OECD.

Table 7. Financial market volatility in the major seven OECD countries<sup>1</sup>

Standard deviation of monthly percentage changes

	1970-1979	1980-1985	1986-1989	1990-1994
Effective exchange rates	1.3	1.7	1.7	1.4
Bond yields <sup>2</sup>	0.3	0.5	0.4	0.3
Share prices	4.4	4.1	5.0	4.0

1 Weighted average for the major seven OECD countries

2 Standard deviation of percentage points

Source OECD

that time. There has been a gradual fall in volatility in the second half of the 1980s and early 1990s, and the sharp increase in bond yields in 1994 was relatively small compared with variations in the early 1980s. Experiences with respect to stock market volatility have been more diverse, with a number of the major countries showing declining volatility since the 1970s or early 1980s while several smaller countries have shown increases. Data on monthly variations in effective exchange rates show average variability broadly flat or declining in the majority of countries since the early 1980s. Major exceptions are Italy, Finland and Turkey. There is some econometric evidence that exchange-control liberalisation led initially to increases in exchange-rate volatility in some countries, but that this effect has not been permanent.<sup>21</sup>

Notwithstanding the absence of any clear increasing trend in financial market volatility, there have been a number of individual cases of market disruption that have given rise to concern. The equity market crash in October 1987 is the biggest single security market disruption in the post-war period, and is often cited as an example of clearly excessive volatility. Economists have had great difficulty providing a satisfactory explanation for the crash in terms of a change in economic fundamentals, since a) no piece of economic news was released at the time of the crash which appears sufficient to explain such a sharp adjustment of market values; and b) the international transmission of the collapse cannot be ascribed to a common fundamental factor. Moreover, a detailed study of the behaviour of individual investors during the crash<sup>22</sup> suggested that they were primarily reacting to developments in the market itself rather than to news or beliefs about economic fundamentals. In the United States a report by the Brady Commission on market functioning during the crash cited the increased use of automatic trading techniques as a factor contributing to the sharp fall in equity prices.

A noticeable feature of other disruptions in security markets during the past decade is that they occurred mainly in small or relatively new markets. A recent review<sup>23</sup> cites – in addition to the equity market crash – three cases of turbulence

and disruption in securities markets in the 1980s and the early 1990s: the crisis in the floating-rate note market (1986), the failure of the “junk” bond market (1989) and the collapse of the Swedish commercial paper market (1990). More recent problems in the ECU bond market (1992), the mortgage-backed security market (1994), and the Mexican equity and bond markets (1994-1995) can be added to this list. The problems in these markets were related to unexpected changes in monetary policy (in the case of the mortgage-backed security market), slowdowns in economic activity combined with high leverage (the “junk” bond and the Swedish commercial paper markets) or turbulence in currency markets (the ECU bond market and the Mexican equity and bond markets). All of these crises do, however, illustrate the need for a core of well experienced traders and investors to ensure orderly operation and liquidity. Markets in newly created instruments often lack such a core and are particularly sensitive to rapid shifts in market sentiment, especially if the trading is taking place outside official exchanges.

### **Fragility of institutions<sup>24</sup>**

A prominent feature of the post-liberalisation period has been the emergence of a number of cases of failure of institutions in the financial sector. Notably these have included the savings and loan (“thrift”) crisis in the United States and banking failures in the Nordic countries, as well as some serious banking difficulties in Japan, France and, most recently, Mexico. Although it can be argued that the handling of financial liberalisation played some role in several of the failures, international comparisons suggest it would be wrong to concentrate solely on financial liberalisation as an explanatory factor. Other important factors included macroeconomic management, interactions between financial deregulation and existing microeconomic distortions, and policies with respect to capital standards and bank supervision.

Macroeconomic factors played a role in nearly all of the crises reviewed. In Mexico, while inflation had been brought down significantly from earlier rapid rates, it was still high relative to US inflation. This situation, which reflected continued very rapid growth of domestic bank credit in Mexico, together with rising interest rates in the United States during 1994, made it difficult to sustain the Mexican government’s policy of limiting peso depreciation within official bands in the face of large current account deficits. The recent sharp depreciation of the peso has increased the vulnerability of Mexican banks, with their business customers having incurred large foreign exchange losses from foreign-currency borrowing. The problems in the Japanese banking sector had their origins in the “bubble” economy which fed on monetary policy being too easy for too long – credit-based speculative asset investments bid up the price of land and equities to unsustainable levels. In Sweden, Finland and Norway, the booming macroeconomic environment in the

mid-1980s was supported by rising commodity prices but, with hindsight, monetary and fiscal policies were not sufficiently restrictive to prevent rising inflation and overheating. Asset price inflation was also an important element behind the troubles in several smaller US commercial banks in the latter half of the 1980s. In each of these cases, banks built up heavy exposures in property-related lending, leading to severe difficulties when property prices began to fall. Inexperience in working in a deregulated environment appears to have exacerbated problems of excessive risk taking by banks; managers had been used to a regulatory environment where increased market share was the main objective and real estate had been considered a reliable form of collateral.

The interplay between financial reform and pre-existing microeconomic distortions reinforced tendencies to excessive risk taking in a number of countries. In the Nordic countries, the removal of quantitative constraints on lending occurred at a time when a significant portion of borrowers faced low or even negative real after-tax borrowing rates. In Japan, tight restrictions on land use arguably exacerbated the net effect on asset prices of increased access to credit. The handling of the thrift crisis in the United States provides an example of the problems associated with distorted incentives in favour of excessive risk-taking. Investment restrictions on thrift institutions were relaxed to allow them greater scope to trade their way out of difficulties but also allowing them to take greater risks. At the same time there was a policy of “regulatory forbearance” whereby thrifts that were insolvent or close to insolvency were allowed to continue trading. The presence of deposit insurance meant that depositors had little incentive to monitor the solvency of these institutions. In these circumstances managers of insolvent thrifts had a strong incentive to take large commercial risks.

The importance of high capital ratios and prudential supervision can be illustrated by the contrasting experiences of Norwegian and Danish banks. While Danish capital standards were tightened significantly in the early 1980s to one of the highest levels in the OECD area, more lenient capital requirements applied to Norwegian banks. In addition, Danish prudential supervision was arguably more vigilant than its Norwegian counterpart, reflected *inter alia* in a much smoother distribution of loan loss provisions than in Norway. Thus, in spite of similar macroeconomic developments and tax systems – as well as similar average loan loss provisions over the 1980s as a whole – no major cases of insolvency were reported among Danish banks. These experiences highlight the importance of giving appropriate incentives and sufficient powers to supervisors so that they can intervene sufficiently early in institutions with low levels of capital.

The overall costs of financial failures and loan losses are very hard to estimate. In addition to pure budgetary costs, real economic costs arise from misallocations of resources, such as overinvestment in real estate or financial services. The direct costs of public support operations relative to GDP were highest in Finland, with

Table 8. Costs of public rescue operations of financial institutions<sup>1</sup>

	Period	Total cost <sup>2</sup>	As per cent of GDP <sup>3</sup>
<b>United States</b>			
Deposit insurance	1980-1992	195.0 <sup>4</sup>	3.2
<b>Japan</b>			
Deposit insurance	1991-1992	0.6	0.0
<b>Australia<sup>5</sup></b>			
State governments	1989-1991	4.4	1.6
<b>Finland</b>			
Central government	1991-1992	1.8	1.7
Government funds	1991-1992	3.1	3.0
Central bank	1991-1992	2.9	2.7
Total		7.8	7.4
<b>Norway</b>			
Government funds	1988-1992	3.2	2.8
Central government	1988-1992	0.2	0.1
Central bank	1988-1992	0.2	0.1
Total		3.6	3.0
<b>Sweden</b>			
Central government	1991-1993	12.7	5.2

1 The figures are based on official or widely accepted estimations and do not include more uncertain estimates relating to banking problems in France and Spain. Costs are estimated as perceived at the time of the capital injections and do not take account of any re-evaluations.

2 Cumulative cost in billions of US dollars at 1992 exchange rate.

3 GDP in 1992.

4 Figure comprises present value estimates of resolutions conducted by the FSLIC and the RTC (US\$180 billion) and lower-bound of estimates of Bank Insurance Fund losses (US\$15 billion). Sources: CBO (1994) and IMF (1993).

5 Capital injections.

Source: BIS Annual Report (1993), national authorities and Secretariat estimates.

cumulative costs amounting to around 7½ per cent of GDP (Table 8). These figures, however, are likely to overstate the final net costs of support operations since they do not take account of the subsequent resale of troubled institutions.

Systemic disruptions caused by banking losses have been successfully limited by the policies chosen in dealing with these crises, with investor panics or major bank closures being avoided. Governments or central banks were generally prompt to supply the necessary liquidity and a high degree of protection was given to depositors. In some cases, solutions were found by merging or liquidating banks, while, in other cases, notably where larger banks faced insolvency, a combination of capital injections and increased government control was used. These policies contrast with the absence of deposit insurance and the generally tougher line that was

taken in the 1920s and 1930s. However, an ongoing policy problem is to avoid creating or sustaining incentives for institutions to count on government bail-outs in the future.

### *Monetary policy implications*

Financial deregulation, and structural changes in financial markets generally, clearly imply important changes in the environment in which monetary policy has to operate. Two key aspects of adjustment to the new policymaking environment are: problems of interpreting financial information in the presence of major structural change; and problems of controlling key financial variables.

#### *Problems of interpreting financial information*

Rapid growth of financial activity, and increasing fluidity of financial flows between different types of institutions, have meant that the usefulness of monetary and financial aggregates as macroeconomic indicators have increasingly broken down. Almost all OECD countries experienced instability in previously reliable monetary aggregates during the 1980s and, as a result, most have either abandoned or significantly de-emphasised their monetary targets; Germany has been an exception in retaining an emphasis on monetary targets. Where monetary aggregates have become unreliable, authorities have tended either to put an increasing emphasis on exchange-rate stability, or to focus on a wider range of indicators in order to direct monetary policy at ultimate macroeconomic goals. Problems of calibrating monetary policies have probably been exacerbated by structural changes in the monetary transmission mechanism, with direct interest-rate effects and indirect exchange rate effects on expenditure and on financial decisions becoming much more important, and with quantity rationing mechanisms being reduced. The need for a learning process by monetary authorities in adjusting to the new environment may have contributed to problems of monetary management in the 1980s that were described in the preceding section. In particular the failure, with hindsight, to have reacted sufficiently firmly to the rapid expansion of financial aggregates may have been partly due to difficulties of interpreting these aggregates due to structural change. This was compounded by uncertainties in predicting the effects of interest rate increases that were actually implemented.

#### *Problems of controlling key financial variables*

A second potential problem for policymakers in the liberalised financial environment is an increased difficulty in controlling key financial variables. Three examples can be cited. First, although regulation-driven quantity rationing has been widely removed, monetary and credit volumes are still likely to play an important

role in the monetary transmission process, and these variables are no longer subject to direct control. Second, there is a perception, encouraged by developments in 1994, that long-term interest rates have become less amenable to policy influence, although, as noted earlier, the current level of bond market volatility does not look abnormal when compared to the early 1980s. Third, exchange rate pressures on European currencies in 1992-93, and more recently on the Mexican peso, illustrate the difficulties of resisting strong exchange rate pressures once markets lose confidence in a currency; they also illustrate the massive short-term capital flows that can arise when this occurs.

Capital account liberalisation has clearly removed one possible instrument for the defence of an exchange rate, and perhaps weakened the impact of official exchange-market intervention, but it is not clear that any reinstatement of capital controls, or tax measures such as a foreign-exchange transactions tax, would alter the potential for exchange rate instability in any fundamental way. Currency crises were not infrequent before capital account liberalisation, although they generally took longer to develop. An earlier review of the European currency crisis<sup>25</sup> concluded that the exchange rate pressures were primarily a result of macroeconomic divergences. Moreover, countries which strengthened their exchange controls in order to defend their exchange rates during that episode (Spain, Portugal and Ireland) were still ultimately unsuccessful in avoiding depreciations.

## CONCLUSIONS

The process of financial deregulation in OECD countries was driven by two broad sets of forces that might be termed “passive” and “active” considerations. At the passive level, regulatory authorities were often reacting to developments, such as financial innovations, that put increasing pressure on the existing regulatory system and rendered many regulations ineffective, costly to enforce, or grossly distorting to competition in the financial sector. But there were also active reasons for reform. In particular, deregulation was expected to improve efficiency by promoting competition and by removing artificial constraints on the allocation of finance. In many countries, financial deregulation was also seen as part of a broader reform process aimed at giving greater scope to the operation of market forces in the economy as a whole.

The assessment of the consequences of financial deregulation suggested several conclusions:

- There has been major growth in both the scale and scope of financial activity during the past two decades. Deregulation has contributed to these trends but has not been the only factor at work, and financial activity has also grown rapidly in countries where deregulation was not a major factor.

- There is some evidence that the efficiency of financial markets has increased, with respect to both internal cost efficiency and the impact on resource allocation. However, the overall effects on economic efficiency are hard to quantify.
- A number of cases of financial fragility have been associated with financial deregulation, but deregulation was not the only contributing factor and many of the problems may have been transitional in nature. Other important factors contributing to these episodes included problems of macroeconomic management, prudential standards, and distortions to incentives arising from other aspects of policy.

An important lesson from experiences with deregulation has been that financial innovations have made many types of regulation increasingly difficult to enforce. For this reason, simplistic strategies of reversing the deregulation process to deal with any consequences perceived as unsatisfactory are unlikely to be workable. To the extent that risks to financial stability are a key concern of regulatory policies, such policies need to be directed at limiting the sources of excessive risk-taking in the least distorting ways possible.

The experiences following financial deregulation also point to important interactions between macroeconomic policies and structural policies in the financial sector. Financial liberalisation has changed the environment for macroeconomic policymaking in important ways, for example through changes in the monetary transmission mechanism and increased difficulties of interpreting and controlling financial variables. In addition, the increased mobility of funds, both domestically and internationally, has increased the need for macroeconomic policies that are conducive to financial stability, since markets have become increasingly sensitive to policy uncertainties.

## NOTES

1. For a more detailed review of deregulation in each of these areas, see Edey and Hviding (1995).
2. The prohibition also applies to fixed-term deposits up to 7 days maturity in the United States. Some of these restrictions are relatively easily circumvented by linking current account facilities to other interest bearing accounts, particularly in the United States.
3. For a review of pension asset regulations and their effect on portfolio diversification, see Davis (1994).
4. For further discussion of this issues, see Edey and Hviding (1995), Annex I.
5. In Australia the Reserve Bank has depositor protection powers to ensure that depositors are given priority over other bank creditors in the event of insolvency.
6. See, for example, Kapstein (1994) for a description of various attempts to limit risks to the international financial system.
7. German banks were, however, subject to a number of prudential balance sheet controls.
8. This has been a recurring theme of structural reviews in the OECD Economic Surveys.
9. See OECD, *Banks Under Stress*, Chapter 2.
10. A review of the structural characteristics of financial systems in a number of OECD countries is provided in Edey and Hviding (1995), Annex I.
11. Income from net interest and fees is expressed as a ratio to capital rather than assets in this table because asset growth understates the growth of the total banking business.
12. A review of these methodological issues is provided in Colwell and Davis (1992).
13. These observations are fully consistent with the relative stability of banks' average interest margins, discussed earlier. While average margins were relatively stable, the overall bank interest rate structure moved up to more realistic levels relative to market rates following deregulation.
14. See Kregel (1992).
15. See Obstfeld (1993), p. 37-41: estimates of aggregate gains in industrial countries vary from 0.25 per cent of GDP to as much as 11 per cent of world consumption. Moreover, recent studies indicate that individual gains may be even larger, due to the inherent non-diversifiability of human capital.

16. See Blundell-Wignall, Browne and Cavaglia (1991).
17. See Tobin and Dolde (1971) and Jappelli and Pagano (1991).
18. Sturm (1983), Friend (1986), Carroll and Summers (1987).
19. Makin (1986), Hayashi (1986), Shinohara (1983), Guiso, Japelli and Terlizzese (1992).
20. Bayoumi (1991) estimated the permanent effect on the UK saving ratio to be around 2¼ per cent. See also Muellbauer and Murphy (1989).
21. Grilli and Roubini (1993) studied movements in the daily exchange rates of seven countries (the United States, Japan, Germany, France, Italy, the United Kingdom and Australia) before and after removal of important foreign exchange regulations, and found no evidence of an increase in volatility. After an initial increase, deregulation appears to lead to a slight reduction in volatility.
22. Shiller (1989).
23. Davis (1992).
24. A more detailed presentation of the background to these issues is made in Edey and Hviding (1995), Annex II.
25. "The Turmoil in European Currency Markets", *OECD Economic Outlook*, No. 53.

## GLOSSARY OF TECHNICAL TERMS

The following brief explanations are provided of technical or specialised terms used in the text of this article:

**Bank runs:** large-scale deposit withdrawals driven by fear that a bank has insufficient resources to repay all depositors. Some economic theories suggest there are circumstances where the fear of a run can become self-fulfilling unless outside liquidity support to the bank is available.

**Bid-ask spreads:** difference between an institution's buying and selling prices for a financial asset in which it deals.

**Bubble economy:** term often used to describe the period of inflated asset prices in Japan in the late *1980s* and early *1990s*.

**Derivatives:** financial instruments whose price is dependent on the price of another asset.

**Disclosure requirements:** rules concerning the financial information that a business enterprise has to make publicly available.

**Dynamic hedging:** a trading strategy whereby an investor continuously adjusts the amount of a financial asset held, in response to incremental changes in its price.

**Junk bonds:** bonds with credit ratings below investment grade, popular in the United States in the *1980s*.

**Leverage:** the degree to which an asset holding is financed by borrowing.

**Line-of-business regulations:** regulations governing the types of business activities that different classes of financial institutions can engage in.

**Off-balance-sheet activities:** bank business activities which do not result in the bank taking on a direct asset or liability, for example the marketing of securities issued by other institutions. This is distinguished from conventional bank lending which does appear on the balance sheet.

**Offshore financial centres:** financial centres set up to avoid regulations or taxation by operating outside the countries of the main parties to financial transactions.

**Programme trading:** any mechanical trading strategy that generates buy and sell decisions on the basis of movements in the price of the asset being traded; sometimes argued to destabilise markets if sufficient numbers of programme traders consistently sell in response to falling prices.

**Systemic externalities:** adverse effects on the safety of the financial system as a whole caused by the activities of individual participants.

## BIBLIOGRAPHY

- ALWORTH, J.S and C.E.V. BORIO (1993), "Commercial paper markets: a survey", *BIS Economic Papers*, No. 37, April.
- BARTH, JR., P.F. BARTHOLOMEW and D.A. WHIDBEE (1989), "How damaging was moral hazard?", *Federal Home Loan Bank Board journal*, Vol. 18, No. 8, August.
- BARTH, JR. (1991), *The Great Savings and Loan Debacle*, American Enterprise Institute, Washington, DC.
- BAYOUMI, T. (1991), "Financial deregulation and consumption", Bank of England, *mimeo*, November.
- BHAGAT, S. A. SHLEIFER and R.W. VISHNY (1990), "Hostile takeovers in the 1980s: the return to corporate specialisation", *Brookings Papers: Microeconomics*.
- BIS (1993), *63rd Annual Report*, Basle, June.
- BIS (1994), *64th Annual Report*, Basle, June.
- BLUNDELL-WIGNALL, A., F. BROWNE and P. MANASSE (1990), "Monetary policy in liberalised financial markets", *OECD Economic Studies*, No. 15, Autumn.
- BLUNDELL-WIGNALL, A., F. BROWNE and S. CAVAGLIA (1991), "Financial liberalisation and consumption behaviour", *OECD Department of Economics and Statistics Working Papers*, No. 81, March.
- BLUNDELL-WIGNALL, A. and F. BROWNE (1991), "Macroeconomic consequences of financial liberalisation: a summary report", *OECD Department of Economics and Statistics Working Papers* No. 98, February.
- BREWER, E. (1989), "Full-blown crisis, half-measure cure", *federal Home Loan Bank Board journal*, Vol. 18, No. 8, August.
- BROWNE, F. (1994), "Inflation – dormant, dying or dead?", *Technical Paper*, Bank of Ireland, October.
- CARROLL, C. and L.H. SUMMERS (1987), "Why have private saving rates in the United States and Canada diverged?", *journal of Monetary Economics*, Vol. 20.
- CBO (1993), "Resolving the thrift crisis", Congress of the United States, Congressional Budget Office, Washington.
- CBO (1994), *The Economic and Budget Outlook*, Congressional Budget Office.
- COLWELL, R.J. and EP. DAVIS (1992), "Output, productivity and externalities – the case of banking", *Bank of England Working Paper Series*, No. 3.

- CUMMING, Christine (1987), "The economics of securitisation", *Federal Reserve Bank of New York Quarterly Review*, Autumn.
- DAVIS, E.P. (1989), "Industrial structure and dynamics of financial markets: the primary eurobond market", *The Journal of International Security Markets*, Vol. 3, Spring.
- DAVIS, E.P. (1992), *Debt, financial fragility and Systemic Risk*, Clarendon Press, Oxford.
- DAVIS, E.P. (1994), "An international comparison of the financing of occupational pensions", *LSE financial Markets Group Special Paper Series*, No. 62, September.
- DE JUAN, A. (1993), "Dealing with problem banks: the case of Spain (1978-1984)", in *Transformation of the Banking System: Portfolio Restructuring, Privatisation and the Payment System*, Centre for Co-operation with European Economies in Transition (CCEET), OECD.
- DE SANTIS, G. (1993), "Asset pricing and portfolio diversification: evidence from emerging financial markets", in *Portfolio Investment in Developing Countries*, edited by S. Claessen and S. Gooptu, World Bank Discussion Paper, No. 228.
- EDEY, M. and K. HVIDING (1995), "An assessment of financial reform in OECD countries", *Economics Department Working Papers* No. 154.
- FRIEND, I. (1986), "The policy options for stimulating national saving", in *Savings and Capital Formation*, ed. F.G. Adams and S.M. Wachter, D.C. Heath, Lexington, Massachusetts.
- FUKAO, M. (1993), "International integration of financial markets and the cost of capital", *Economics Department Working Papers* No. 128, OECD.
- GOODHART, C. and SCHOENMAKER (1993), "Institutional separation between supervisory and monetary agencies", *Special Paper*, No. 52, LSE Financial Market Group, April.
- GRILLI, V. and N. ROUBINI (1993), "Financial liberalisation and exchange rate volatility", in *financial Markets' Liberalisation and the Role of Banks*, ed. by Vittorio Conti and Rony Hamaul, Cambridge University Press, pp. 89-108.
- GROUP OF TEN (1993), "International capital movements and foreign exchange markets", April.
- GUIO, L., T. JAPPELLI and D. TERLIZZESE (1992), "Saving and capital market imperfections: The Italian experience", *The Scandinavian Journal of Economics*, Vol. 94, No. 2, pp. 197-214.
- HAYASHI, F. (1986), "Why is Japan's saving rate so apparently high?", In *NBER Macroeconomics Annual 1986*, ed. by Stanley Fischer, MIT Press, Cambridge, Massachusetts.
- IMF (1993), "Systemic issues in international finance", Part II of *International Capital Markets*, Washington, August.
- JAPPELLI, T. and M. PAGANO (1991), "Saving, growth and liquidity constraints", *CEPR Discussion Paper*, London.
- JOHNSEN, T., T. REVE, E. STEIGUM, F. SÆTTEM, C. MEYER and E. HØYLAND (1992), *Bankrisen i Norge*, SNF-rapport 29/92, Bergen, Norway.
- KANE, E. (1991), "Regulatory competition and the 'generic' financial services firm" in *The Deregulation of Financial Intermediaries*, Reserve Bank of Australia.

- KAPSTEIN, E.B. (1994), "Governing the global economy: international finance and the State", Harvard University Press, Cambridge, Massachusetts.
- KREGEL, J.A. (1992), "Universal banking, US banking reform and financial competition in the EEC", *BNL Quarterly Review*, No. 182, September.
- LYBECK, J.A. (1992), *Finansiella kriser förr och nu*, SNS forlag, Stockholm.
- MAKIN, J.H. (1986), "Savings rates in Japan and the United States: the roles of tax policy and other factors", in *Savings and Capital Formation*, ed. by F.G. Adams and S.M. Wachter, D.C. Heath, Lexington, Massachusetts.
- MALKIEL, B.G. (1989), "Market efficiency" in *Finance*, the Macmillan Press Limited.
- MENDOZA, E.G. (1991), "Capital controls and the gains from trade in a business cycle model of a small open economy", *International Monetary Fund Staff Papers*, No. 38, September.
- MINISTRY OF ECONOMY (1994), *Den danske pengeinstitutsektor*, Copenhagen, October.
- MISHKIN, F.S. (1994), "Preventing financial crises: an international perspective", *The Manchester School Supplement*.
- MUELLBAUER, J. and A. MURPHY (1989), "Why has UK personal saving collapsed!", *Credit Suisse First Boston Research Report*, July.
- MUSSA, M. and M. GOLDSTEIN (1993), "The integration of world capital markets", in *Changing Capital Markets: Implications for Monetary Policy*, Jackson Hole.
- OBSTFELD, M. (1992), "International risk sharing and capital mobility: another look", *Journal of International Money and Finance*, No. 11, February.
- OBSTFELD, M. (1993), "International capital mobility in the 1990s", *NBER Working Paper*, No. 4534.
- OECD (1989), *Competition in Banking*, Paris.
- OECD (1989), *Economies in Transition: Structural Adjustment in OECD Countries*, Paris.
- OECD (1992), *Banks Under Stress*, Paris.
- OECD (1993), *Exchange Control Policy*, Paris.
- OECD (1994), *Assessing Structural Reform: Lessons for the Future*, Paris.
- OLIVEIRA-MARTINS, J. and D. PLIHON (1992), "Transferts internationaux d'épargne et integration financiere", *Document de Travail*, No. 1992-08/E, Caisse des Dépôts et Con-signations, June.
- PORTES, R. and B. EICHENGREEN (1987), "The anatomy of financial crises", in *Threats to International Financial Stability*, CEPR, Cambridge University Press, New York.
- PROWSE, S. (1994), "Corporate governance in an international perspective: a survey of corporate control mechanisms among large firms in the United States, the United Kingdom, Japan and Germany", Bank for International Settlements, Basle.
- SCOTT, L.O. (1991), "Financial market volatility; a survey", *IMF Staff Papers*, Vol. 38, No. 3, September.
- SHILLER, R.J. (1989), *Market Volatility*, MIT Press.

- SHINOHARA, M. (1983), "The determinants of post-war savings behaviour in Japan", in *The Determinants of National Saving and Wealth*, ed. by F. Modigliani and R. Hemming, St. Martin's Press, New York.
- STIGLITZ, J.E. (1994), "The role of the State in financial markets" in *Proceedings of the World Bank Annual Conference on Development Economics 1993*, The International Bank for Reconstruction and Development, Washington.
- STURM, P.H. (1983), "Determinants of saving: theory and evidence", *OECD Economic Studies*, No. 1.
- TOBIN, J. and W. DOLDE (1971), "Wealth, liquidity, and consumption", in *Consumer Spending and Monetary Policy: The Linkages*, Federal Reserve Bank of Boston.
- TOBIN, J. (1984), "On the efficiency of the financial system", *Lloyds Bank Review*.
- VITTAS, D. (1992), "Thrift regulation in the United Kingdom and the United States: a historical perspective", *mimeo*, World Bank.
- WEISBROD, SR., L HOWARD and L ROJAS-SUAREZ (1992), "Bank risk and the declining franchise value of the banking systems in the United States and Japan", *IMF Working Paper*, June.
- WHITE, L.J. (1991), *The SL Debacle: Public Policy Lessons for Bank Thrift Regulation*, New York, Oxford University Press.
- WILLIAMSON, J. (1993), "A cost-benefit analysis of capital account liberalisation", in *Financial Opening: Policy Issues and Experiences in Developing Countries*, edited by H. Reisen and B. Fischer, OECD Development Centre.