

FINANCIAL SYSTEMS IN EUROPE, THE USA, AND ASIA

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Financial structure is an important determinant of the efficiency and stability of financial systems and the channels through which monetary policy is transmitted. We document the substantial differences in the financial systems of the euro area, the UK, the USA, Japan, and non-Japan Asia. The traditional classification of bank-based and market-based systems is shown to be too simplistic. We focus on two particular aspects of financial structure: financial institutions and the housing and mortgage markets. It is shown that institutional investors differ in important ways across the regions considered. One recent change is that Central Banks, particularly those in Asia, have become significant institutional investors. Housing and mortgage markets differ even more. We are still a long way from understanding which kind of financial structure is best.

I. INTRODUCTION

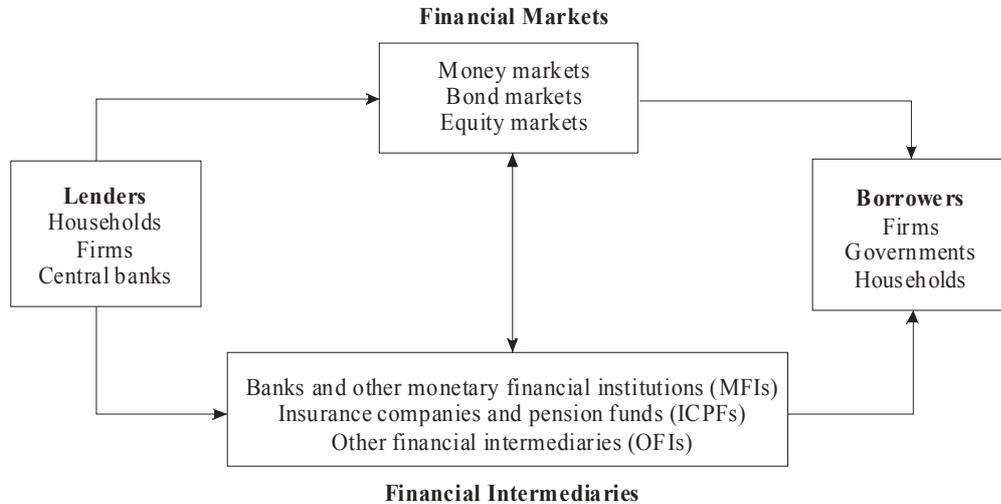
Despite the trend of globalization in recent years, the financial structures of different economies remain diverse. In this paper we compare the structure of the euro area with the UK, the USA, Japan, and, to the extent possible, non-Japan Asia.² Figure 1 gives

an overview of the functioning of a financial system. Lenders of funds are primarily households and firms. As we shall see, they are also increasingly Central Banks, particularly in Asia. These lenders can supply funds to the ultimate borrowers, who are mainly firms, government, and households, in two ways. The first is through financial markets, which

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² This includes Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand.

Figure 1
An Overview of the Financial System



consist of money markets, bond markets and equity markets. In this paper we focus mainly on bond and equity markets. The second is through financial intermediaries. These are credit institutions, such as banks, and money-market funds, insurance companies and pension funds, and other financial intermediaries such as mutual funds.

Why does financial structure matter? It is important for at least three reasons:

- (i) efficiency;
- (ii) financial stability;
- (iii) monetary policy transmission channels.

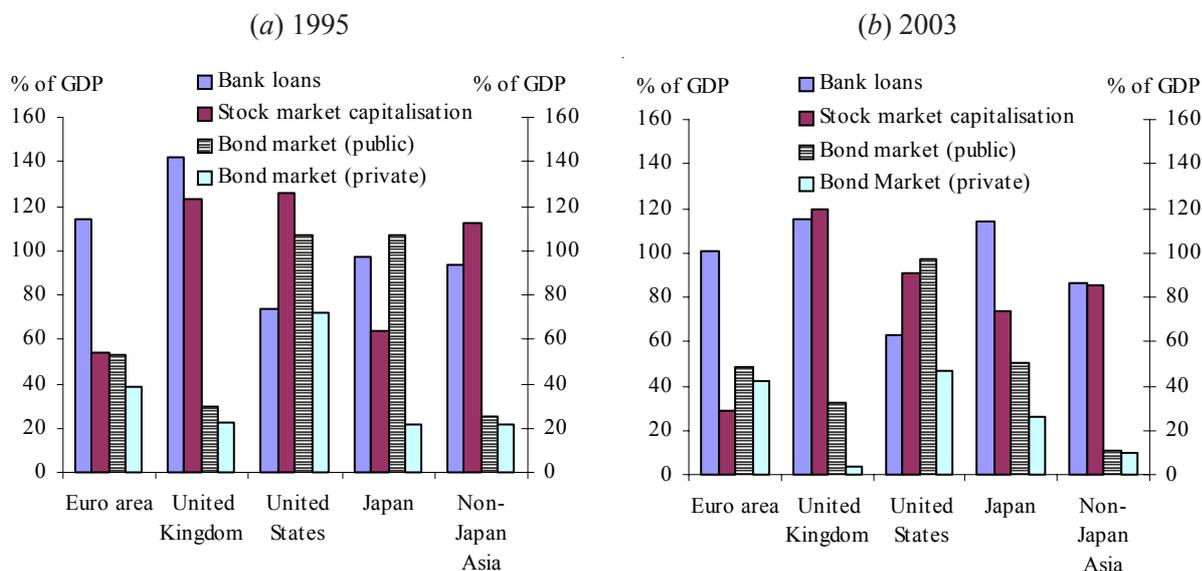
The efficiency properties of a financial system determine how well it does its job of allocating resources. In terms of Figure 1, the issue is how effectively funds flow from borrowers to lenders so that everybody's welfare is maximized. A first aspect of this is how the financial system allows risk to be shared and who bears it. A second is the incentives to produce and use information. In particular, is information provided to indicate where resources can be most profitably invested? A third is how effective corporate governance is implemented. What objectives do managers pursue and how does the financial system constrain them? One of the most important determinants of long-run growth is the extent to which new industries are funded; a fourth aspect is how effectively this is done. Finally, there is the issue of how a financial

system evolves over time, and the role of law and politics in determining this.

Financial stability is another reason that financial structure is important. Prior to the twentieth century, banking crises, currency crises, and stock-market crashes occurred frequently. The Great Crash of 1929 and the Great Depression that followed convinced almost all governments to regulate their financial system heavily to prevent instability. This was successful in that, from the end of the Second World War until the collapse of the Bretton Woods System in 1971, there was only one banking crisis in the world. However, stability was achieved only by severely restricting the efficiency properties of the financial system. The financial liberalization aimed at improving efficiency led to the re-emergence of instability. Banking crises, currency crises, asset-price bubbles and crashes, contagion, and financial fragility have occurred in emerging and developed countries in recent years. This raises the issue of what exactly is the relationship between financial structure and these phenomena.

Finally, financial structure is important in determining monetary policy transmission channels. The traditional *money view* is that interest rates affect consumption and investment as predicted by neo-classical theories based on perfect capital markets. In this setting institutions do not matter. The *credit view*, on the other hand, stresses that with imperfect capital markets the effects of monetary policy

Figure 2
Size of the Financial Markets by Country/Region



Sources: CEIC Data Ltd, International Financial Statistics, and national sources.

depend on access to finance. How finance is obtained by firms, households, and governments depends critically on the financial structure.

As we will see, there are numerous ways of categorizing financial structure. The one that is most useful in any particular instance will depend on the precise question that is being asked. The first categorization is bank-based versus market-based. The conventional wisdom is that the euro area and Japan would be bank-based systems, while the UK and the USA would be market-based. It can be seen from Figure 2 that the conventional wisdom is rather simplistic. Figure 2 shows a comparison of the long-term financing structure of these economies in 1995 and 2003. The figures are given as a percentage of GDP. Bank loans consist of domestic credit to the private sector. The figures in the stock-market column are the total market capitalization. The bond market figures are divided into public- and private-sector bonds.

It can be seen from Figure 2(a) that in 1995 the euro area had small stock markets but large bank loans and, in that sense, could be considered as bank-based. However, it also had a significant bond

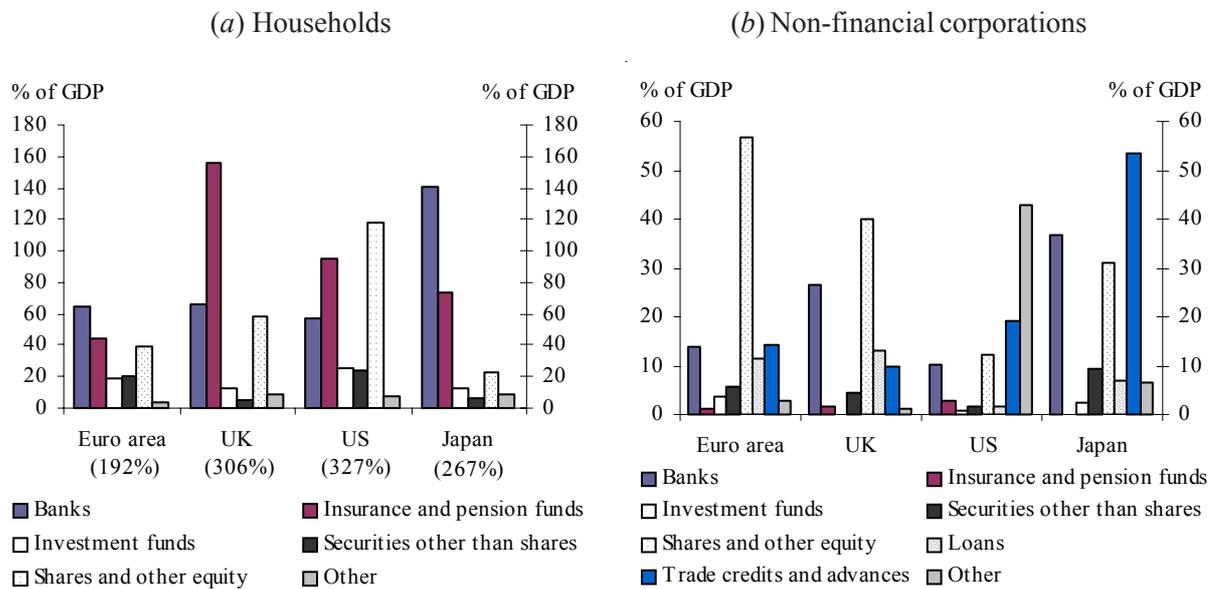
market both in terms of public- and private-sector debt. The UK was significantly different, with a large stock market and bank loans but a small bond market, particularly in terms of private-sector debt.³ In some sense it seems to be both market-based and bank-based. The main features of the US financial structure are a small amount of bank loans, a significant stock market, and a much larger bond market than any of the other areas in relative terms. It is the most market-based economy. Japan has significant amounts of finance in all categories. It is very much a bank- and market-based economy. Non-Japan Asia is more similar to the UK: bank loans and the stock market are important but the bond market is not.

Figure 2(b) shows the situation in 2003 several years after the Asian crises. It can be seen that the structure is basically the same. The main difference is that Japanese government debt has increased significantly. One interesting feature is that the financial structure in non-Japan Asia has not changed significantly, despite the Asian crises.

Figure 2 focuses on the claims that are issued by borrowers. Another way of asking whether economies

³ The UK used to have a significant corporate bond market but this died during the 1970s when inflation was high. It has not revived in recent years, despite the reduction in inflation.

Figure 3
Portfolio Allocation (average, 1995–2002)



Sources: European Central Bank (ECB), Federal Reserve Board, and Bank of Japan.

are bank-based or market-based is to look at household assets. These are shown in Figure 3(a). This shows that all the economies are distinctly different. Again, no simple categorization into market-based or bank-based is possible. Households in the euro area own significantly fewer financial assets than in the other economies, with a total of 192 per cent of GDP compared with 306 per cent, 327 per cent, and 267 per cent for the UK, the USA, and Japan, respectively. In terms of the composition of assets there are also large differences. In the euro area, assets held in banks are the most important; insurance and pension funds are next, with direct holdings of shares after that. One striking thing is that household portfolios in the UK are very similar to those in the euro area with one significant difference: the investment in insurance and pension funds is dramatically higher. This is presumably a result of the difference in public-sector pension schemes. In the UK the basic pension from the state is minimal, while in the euro area state pensions are usually generous. However, current pension reforms in continental Europe, which were mainly triggered by population ageing that imposes a large burden on the traditional social-security systems, are likely to in-

crease the importance of institutional investors (pension funds, in particular) in the euro area as well. The USA is an outlier in terms of the direct holdings of shares and other equity. Also, households have relatively little in banks. Meanwhile, Japan is an outlier in terms of the amount of assets held in banks, where households hold much more in this form than households in other countries. They also have significant amounts in insurance and pension funds. This is to a large extent in insurance companies that offer debt-like contracts. Given the small holdings of shares and other equity, the Japanese bear significantly less financial risk than the households in the USA and UK.⁴ The USA has somewhat less intermediation than the other economies, although the total amount of intermediation is significant in all economies.

Figure 3(b) shows the assets of non-financial corporations. These again underline significant differences across the economies. The euro area and the UK are quite similar, except for the amount of shares and other equity held and the amount of trade credits. These are both larger in the euro area than in the UK. The USA has much less investment than

⁴ It is an interesting question how Japanese households can bear less risk than US and UK households. Allen and Gale (1997) have argued that this can occur if banks engage in intertemporal smoothing so that the real assets in the economy are different. Another possibility is that, in Japan, risk is borne through the government. During the 1990s when the Japanese government bailed out several banks by injecting public money, the households' financial risk had been transferred to the government.

the other countries except for the ‘other’ category. This includes holdings of other assets, which are not identified in the flow-of-funds data.⁵ Japan is perhaps the most different. It has significantly more assets in banks and more trade credit than other countries.

Much work has already been done on financial structure of countries (see, for example, Allen and Gale, 2000; ECB, 2002, 2003a; Hartmann *et al.*, 2003; Baele *et al.*, 2004). Much of this work is concerned with documenting the differences in financial structure. A limited amount has been done on how the significant differences between financial systems manifest themselves in terms of efficiency, stability, and monetary policy transmission channels. These are obviously immense subject areas. In this paper we wish to focus on two aspects that have received relatively little attention in this literature. The first is a comparison of financial institutions in the different economies, which is considered in section II. As Figure 2 indicated, intermediaries are important in all of the economies but institutional structure differs significantly across countries. Section III considers the real-estate and mortgage markets in the different economies. This is a large part of the financial sector, but again has not been considered in great depth in the financial structure literature. Since institutional investors play such a large role in the financial sector, and real estate is a major part of household wealth, understanding the operation of these parts of the financial system is crucial for analyses of efficiency, stability, and monetary policy transmission channels. Finally, section IV contains concluding remarks.

II. THE ROLE OF INSTITUTIONAL INVESTORS

In the USA, households do hold significant amounts of securities directly. However, even there, the majority of financial assets are held in intermediaries. In all of the other economies considered in Figure 3(a) the vast majority of assets are held by

financial intermediaries. There have recently been some important contributions to the literature on institutional investors (see, for example, Davis and Steil, 2001; Guiso *et al.*, 2002; Davis, 2003), which have highlighted not only their growing role as financial-market participants, but also their importance for the efficiency and stability of the financial systems. In this section we divide the institutional investors into three categories, following the standard statistical classification. The first is monetary financial institutions (MFIs), which includes banks, money-market funds, and other credit institutions. The second is insurance corporations and pension funds (ICPFs). The final category is other financial intermediaries (OFIs). The definition of this last category varies across countries, but it includes securities and derivatives dealers and mutual funds. In Japan it includes also government intermediaries.⁶ In Figure 4 we consider the assets of these institutions and in Figure 5 we consider the liabilities.

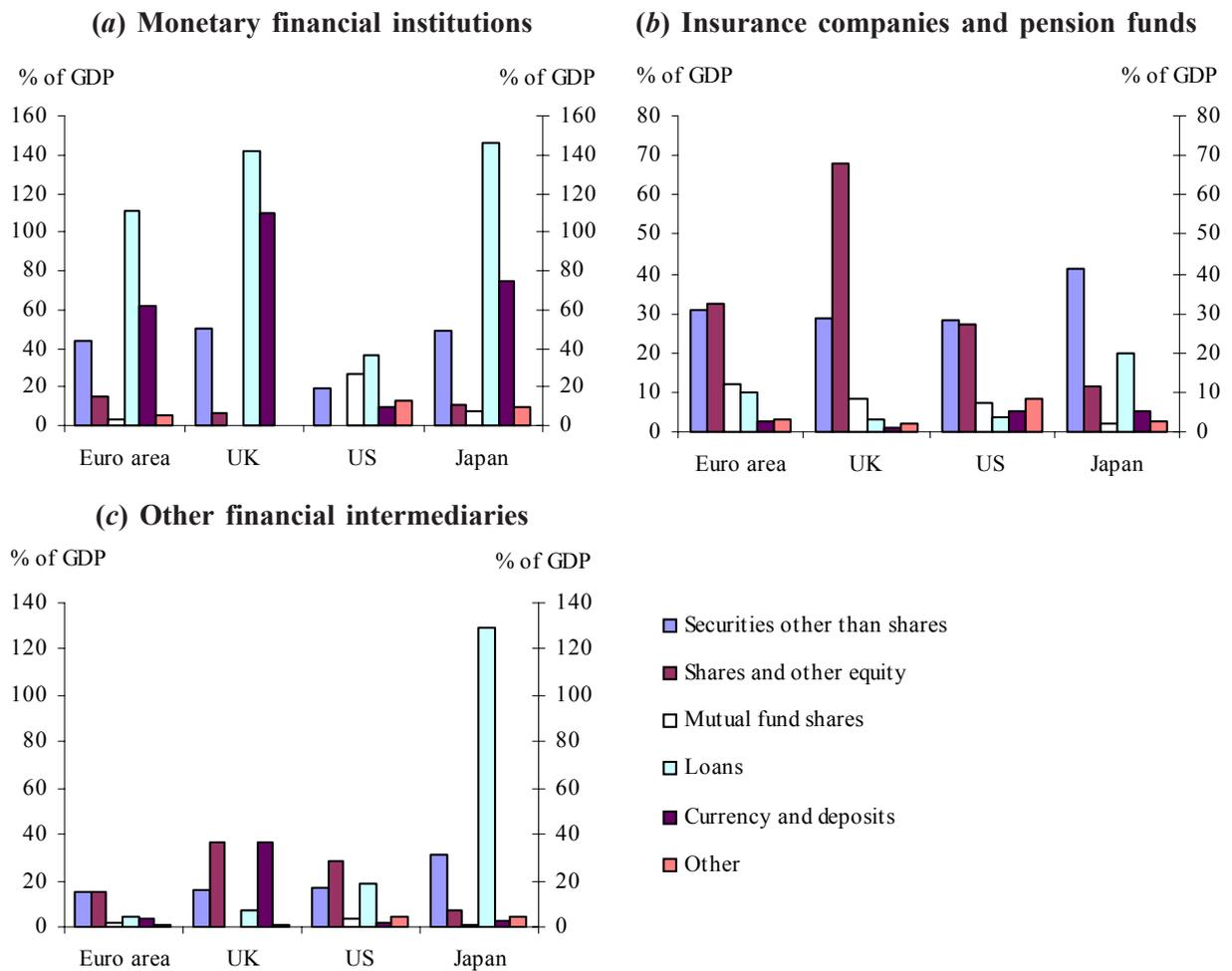
Figure 4(a) shows the assets of MFIs. Perhaps not surprisingly, given that this category consists mostly of banks, the allocation is similar in all economies. The UK MFIs have somewhat higher currency and deposits than the others, presumably reflecting a larger inter-bank market. The USA has a much smaller total size of the sector relative to GDP than the other countries. MFIs in the USA also have much smaller holdings of equity and other securities than in other countries. For regulatory reasons, they can only hold equity in special situations, such as when a firm goes bankrupt.

The portfolio allocations of insurance companies and pension funds are shown in Figure 4(b). These are also fairly similar across countries. As has already been stressed in the discussion of Figure 2(a), UK pension funds hold significantly more equities than those in other countries. UK insurance companies also hold significant numbers of shares. Thus, UK ICPFs have significantly more equity exposure than in other countries. The euro-area ICPFs have a diverse set of holdings with significant amounts of a number of assets. The USA is unusual

⁵ In particular, this category also includes the equity holdings of non-financial corporations.

⁶ These are public financial institutions owned and controlled by the central government, whose principal business is financial intermediation. This sector includes the Fiscal Loan Fund and other government financial institutions. The Fiscal Loan Fund supplies funds to institutions covered by the Fiscal Investment and Loans Program. Postal savings and postal life insurance are classified as depository corporations and life insurance, thus they are included in the MFI and ICPF categories, respectively (see Bank of Japan, 2002).

Figure 4
Portfolio Allocation (average 1995–2002)



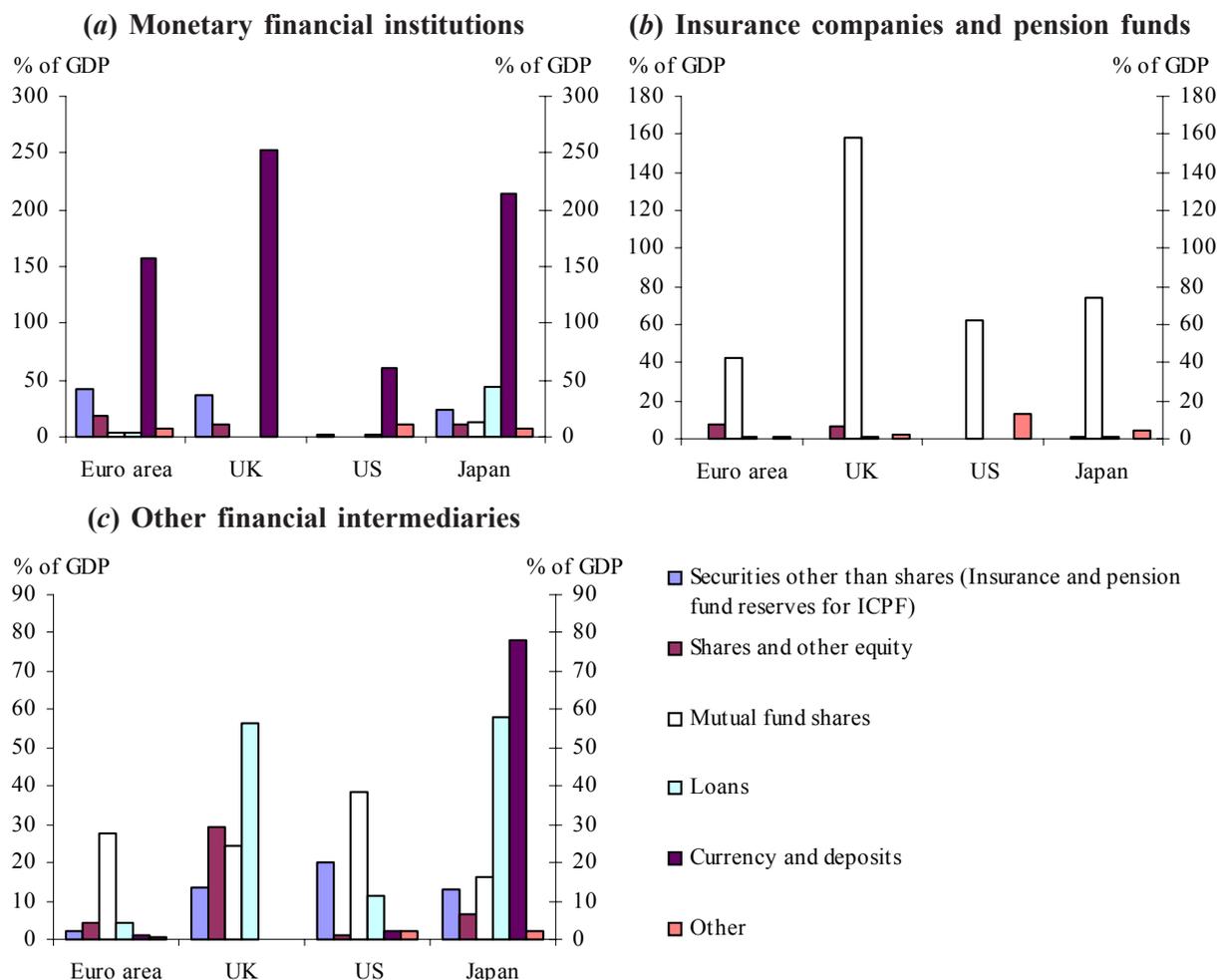
Sources: ECB, Federal Reserve Board, and Bank of Japan.

in not having many loans, while in Japan this is a significant portion of assets. In Japan, securities other than shares are relatively large, while equity is fairly small.

Figure 4(c) shows the allocation of OFIs. As mentioned above, the definition of these varies considerably across countries. A first observation is that the total size of OFIs' portfolios is relatively small in the euro area compared with the UK and the USA. At first sight, it seems as though the euro-area financial system is less developed with regard to different (new) types of financial institutions providing financial instruments. However, this difference in fact stems from the composition of the OFI category in the euro area and in the UK. In the euro area the majority of OFIs are investment funds, while in the

UK securities and derivatives dealers make up the largest share of the sector. Securities and derivatives dealers typically have large deposit and loan positions on both the asset and the liability side of the balance sheet. In the USA, OFIs consist primarily of mutual funds, which invest their funds mainly in shares and in several kinds of fixed-income securities (Treasury, agency, municipal, and corporate bonds). US finance companies engaged in lending activity (primarily mortgages and consumer credit) are also included in this category, which explains the large value of loans. In this category the most surprising outlier is Japan. The amount of loans that its OFIs grant is many times larger than in other countries. This reflects the activity of some public financial institutions, which are included in the OFI category.

Figure 5
Liabilities (average 1995–2002)



Source: ECB, Federal Reserve Board, and Bank of Japan.

Figure 5 shows the liabilities of financial institutions. As already observed for the assets, the structure of the liabilities of MFIs is fairly similar across countries, as shown in Figure 5(a). Again, the size of the currency and deposits in the UK is larger than in the other economies, reflecting, presumably, inter-bank activities. Another observation is that US MFIs issue very few securities compared to the other economies. By contrast, in the euro area, securities issued by MFIs are large and represent the majority of the amount outstanding of corporate bonds. Figure 5(b) shows the liabilities of the ICPF sector. Not surprisingly, they are almost totally insurance and pension-fund reserves. As previously observed, the weight of the ICPF sector in the UK is significantly higher than in the other economies. Figure 5(c) shows the liabilities of OFIs across countries. It can be seen that the liabilities structure also varies

considerably. In the euro area and in the USA, the major liability item is mutual fund shares, since mutual funds are the biggest institutions in the OFI sector. The liability structures in the UK and in Japan are significantly different, reflecting also the already mentioned institutional differences.

Institutional investors in non-Japan Asia provide an interesting contrast to the euro area, UK, USA, and Japan. As shown in Table 1, they have so far played a rather minor role in the financial system, but have grown strongly over the past few years. This was particularly so in the mutual fund sector. Total net assets under management by mutual funds in non-Japan Asia rose by 98 per cent between the end of 1997 and June 2003 to US\$428 billion, accounting for more than 22 per cent of total GDP. Strong growth is due to a number of factors. In Hong Kong

Table 1
Assets under Management by Investors in Selected Asian Economies (2003)

(% of GDP)	Mutual funds ^a	Insurance companies	Pension funds ^b	Banks	Foreign exchange reserves
Financial centres					
Hong Kong	162.8	n.a.	7.3	532.1	75.7
Singapore	160.0	46.9	66.1	227.8	102.5
Others					
Korea ^c	20.1	30.7		109.8	25.7
Malaysia	18.1	19.3	56.2	160.7	43.5
Taiwan	2.7	48.4	n.a.	227.1	72.2
Thailand	7.9	n.a.	7.3	121.9	28.1

Notes: ^a From the Survey of the Singapore Asset Management Industry, Monetary Authority of Singapore, Korea Investment Trust Companies, Investment Company Institute, and Thai Securities and Exchange Commission. ^b From the Singaporean Central Provident Board, the Hong Kong Mandatory Provident Fund Authority, Employees Provident Fund, Malaysia, and Department of Statistics, Taiwan. ^c Korea is running a National Pension Fund, but asset data are not readily available.

Sources: IMF *International Financial Statistics* and *Global Financial Stability Report* (2004), and national authorities.

and Singapore, initiatives by the regulators to help promote the status of financial centres have attracted overseas funds to invest in the two economies. Between 2000 and 2004, funds sourced from overseas investors have consistently accounted for 60–70 per cent of the asset-management sector. As for the rest of Asia, the low returns on equity markets and low interest-rate environment over the past few years have induced local retail investors to subscribe to bond funds in search of higher yields. However, this also raised concerns about overall financial stability in these economies as the local bond markets are comparatively illiquid and volatile. For example, the accounting scandal of the SK Group in Korea in 2003 triggered retail investors to redeem more than US\$13 billion from the local investment trust companies in a few days (out of assets of more than US\$140 billion), severely affecting other asset prices.

Despite the rapid growth in mutual funds, insurance companies, especially life insurers, remain the largest institutional investors in most emerging Asian economies except the two financial centres. This is partly due to the tradition of incorporating some savings components into the life policy. Pension funds in non-Japan Asia are mostly under govern-

ment-sponsored national provident funds. Notable examples are Malaysia and Singapore where the governments direct a fully funded, defined-contribution system for domestic workers. Consequently, the assets under management by pension funds in these two countries are much larger than the rest of the region. However, as pointed out by Holzmann *et al.* (2000), despite their relatively large asset size, these national mandatory funds have not contributed to a significant development of local capital markets as their assets are required to invest mainly in government securities. In Hong Kong, the government launched the Mandatory Provident Fund in 2000, which allows citizens to choose their investment plans among a group of approved private investment funds. Including some assets transferred from other privately set-up pension schemes before the launch, the size of total net assets remains relatively small. Also, growth could be slowed by the low incentives for individual employees to voluntarily contribute extra funds to the scheme since there is no capital gains tax there.

How do the differences in financial institutions across economies affect efficiency, financial stability, and monetary policy transmission channels? This is an important question which has received

Box 1
Central Banks as Institutional Investors

Traditionally, institutional investors have been thought of as banks, insurance companies, pension funds, and mutual funds. One of the dramatic developments over the past few years is that Central Banks in Asia have become major institutional investors. They have built up large foreign-exchange reserves, with an intention to buffer unpredictable balance-of-payments shocks and to smooth extreme exchange-rate volatility.⁷ Consequently, aggregate foreign-exchange reserves in Asia grew sharply to over US\$2 trillion (some 70 per cent of the world total) at end-March 2004. Since a large part of these reserve assets are held in US Treasury securities, these Central Banks have become important players in the US Treasury markets. The holdings of US Treasury securities by non-US official institutions (mostly Central Banks) increased from US\$770 billion at end-January 2003 to US\$1 trillion at end-April 2004. Assuming 70 per cent of the total was held by Asian Central Banks, this means that they could hold up to US\$700 billion of US Treasury securities.

Regardless of the reasons for the rapid build-up of reserves in these countries, some recent studies suggest that the reserve accumulation in non-Japan Asia in 2002 was faster than was warranted by economic fundamentals (see IMF, 2003). This is because the costs of continued rapid build-up of foreign-exchange reserves, such as the higher interest paid on some countries' domestic debt than is earned on holdings of foreign assets (e.g. Korea) and the adverse impacts of keeping an undervalued currency, will outweigh its benefit as a crisis-prevention measure.

The large holding of US Treasury securities in its reserve portfolio also exposes a country to significant market risk. With more signs of a sustained economic recovery in Japan and an increasing concern about the excessive liquidity creation through reserve accumulation in China, there are mounting pressures on the process to slow.

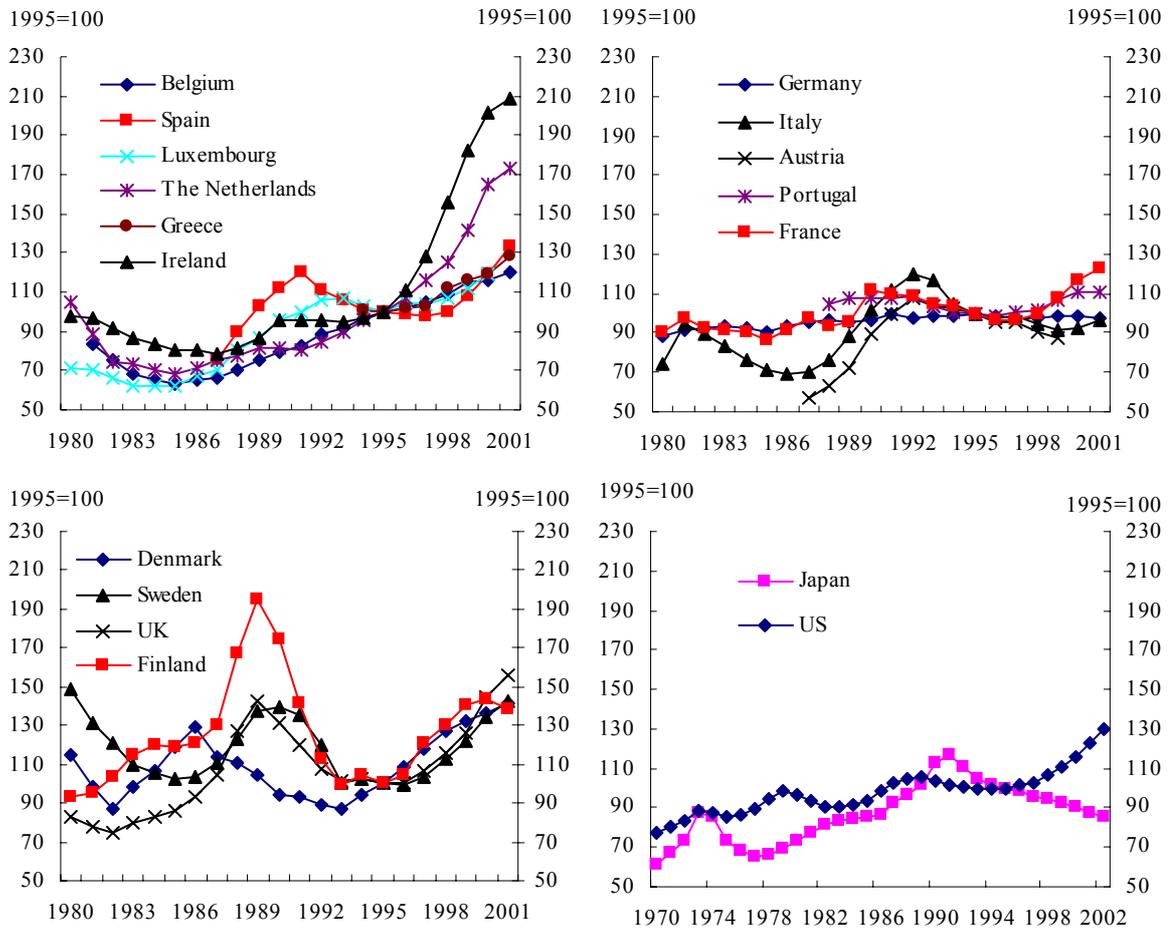
Does the growing role of Central Banks as institutional investors matter? It can be argued that it is very significant. Central banks have different objective functions than private financial institutions. They may care considerably more about financial stability. As a result, they may be willing to hold positions that enhance stability at the cost of efficiency. For example, Japan's enormous holdings of US securities are largely funded by issuing low-yield government securities. The Bank of Japan, in effect, has an enormous carry trade (i.e. borrowing at a low rate in one country to invest at a higher rate in another). When interest rates in Japan rise above those in the USA, private institutions would quickly unwind their positions. However, the Bank of Japan, which is also concerned with overall financial stability, may be willing to unwind this position quite slowly to avoid disruption of the financial markets, even though this could be very costly.

little attention. The relative unimportance of monetary financial institutions in the USA is striking. Some might argue that this is superior in terms of efficiency, stability, and the transmission of monetary policy. Other institutions and direct investment in securities by households may generate a superior allocation of resources. Since the major form of instability has traditionally been banking crises, having less funds in banks and other MFIs

would appear to be desirable. Finally, if MFIs are less important, monetary policy may be transmitted to the real economy more effectively. However, it is not at all clear that these arguments are correct. For example, it is often suggested that institutions overcome market imperfections so economies such as those in the euro zone may be more efficient than the USA. Much more research is needed on these topics.

⁷ Unless otherwise stated, Asia includes China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand.

Figure 6
Real House Prices in the EU, USA, and Japan



Sources: ECB (2003) and Bank for International Settlements (BIS).

III. THE HOUSING AND MORTGAGE MARKETS

So far we have focused on financial wealth and the allocation across institutions. This is only one component of wealth. Another major component is housing. In this section we focus on the housing and mortgage markets. As Maclennan *et al.* (2000) have stressed, these are very important for efficiency, stability, and the monetary policy transmission process. For example, in many European countries housing costs typically involve a fifth to a quarter of disposable incomes, and housing wealth accounts for over half of household net wealth. In the UK, a housing bubble in the late 1980s had a disastrous effect on the economy when it burst in the early 1990s. The predominance of variable-rate mortgages in the UK and some other countries

means that monetary policy transmission works in a quite different way than in countries such as the USA, where mortgages primarily have long-term fixed rates.

Housing prices are quite volatile and the resulting changes in housing wealth, which is a major part of households' wealth, affect the rest of the economy. Changes in house prices may be caused by a variety of factors that affect both the supply of and the demand for housing. Real house prices tend to track the business cycle. Since the mid-1990s, residential property prices have recorded widely differing rates of increase in real terms across the industrialized countries.

Real house prices in most EU⁸ countries have followed long cycles, of amplitude of around 10 years, around an upward trend in the last 20 years.

⁸ Throughout the paper, the term EU does not include the ten countries which joined the Union on 1 May 2004.

Figure 7
Real House Prices in Hong Kong and Korea



Source: CEIC Data Ltd.

Since the mid-1990s, real house prices have risen at an accelerated pace in most EU countries, particularly so in Ireland and the Netherlands. For a number of EU countries, real house prices in 2002 were at their highest levels since 1980 (see Figure 6). Internationally, a rising trend is discernible in the USA as well, where house prices continue to grow, notwithstanding the recession in 2001 and the loss of jobs in 2002–3. Examples of countries where the trend was different are Germany, Japan, and Switzerland. These stand out as countries where real house prices have shown a decline since the mid-1990s, and their current level is not far from where it was in 1970 (see OECD, 2004).

As for non-Japan Asia, the importance of the housing market for the overall economy was clearly evidenced during the 1997/8 financial crisis. The pre-crisis property market bubbles in many countries have often been cited (e.g. Quigley, 2001) as a major cause of the regional financial crisis in 1997/8. Financial liberalization and the strong growth in many countries in the early 1990s attracted large capital inflows, which in turn fuelled a rapid expansion in lending to the private sector for construction projects and mortgage financing. The speculative attacks on the currencies and the sudden capital outflows brought about recessions in these economies and the collapse in their property prices. Pre-1997 data on the real-estate sector in non-Japan Asia are scarce, but Figure 7 shows that real house

prices in Hong Kong and Korea fell sharply in the wake of the crisis. Note that, apart from Korea, where government policy helped create a house price boom in 2002 (see below), property prices in most other non-Japan Asian economies remain weak, despite the fact that the economies returned to positive economic growth in 1999.

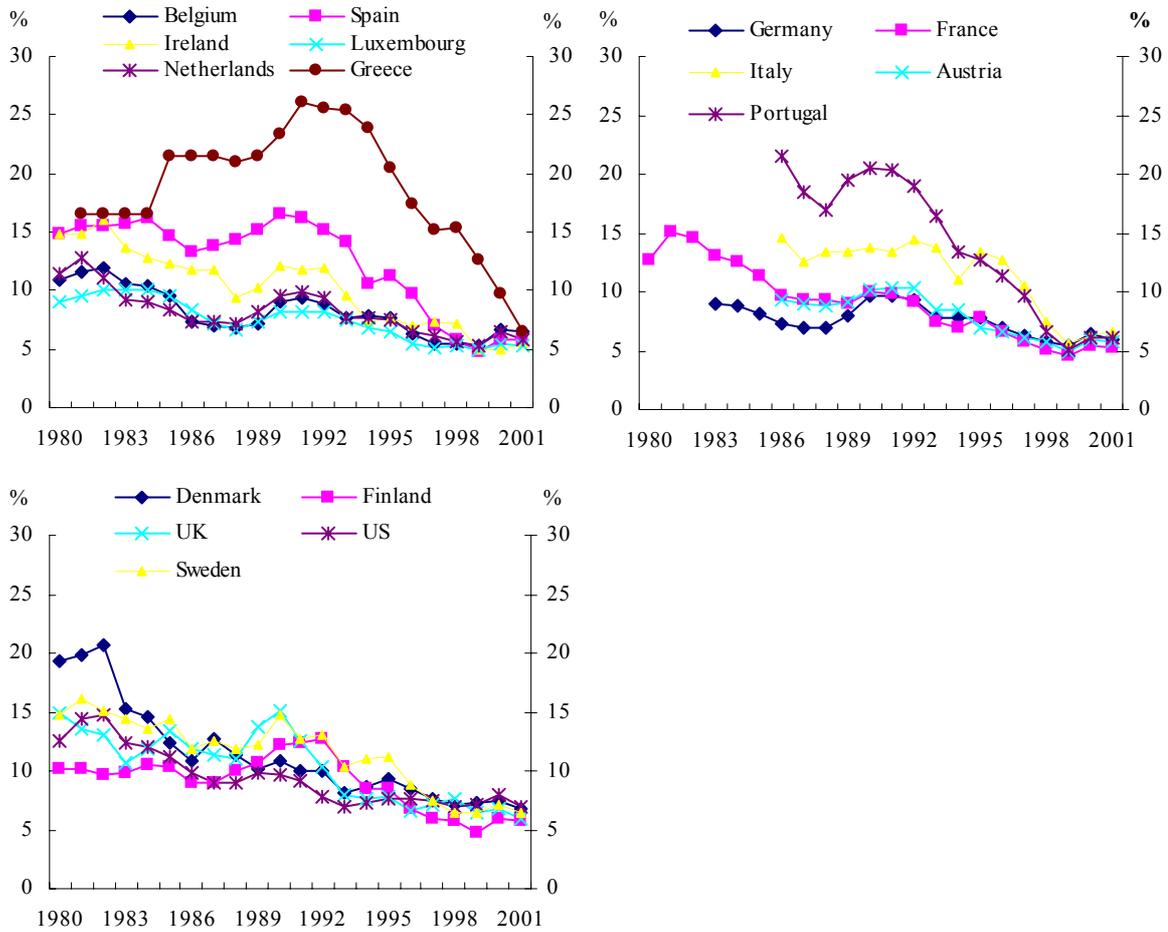
Several factors have been established by the empirical literature as affecting housing markets. In the EU, the affordability of owner-occupied housing has generally remained constant or improved over the long term. In more recent times, however, house prices have risen faster than the disposable income in a number of countries and the ratio of house prices to income has been at, or close to, its maximum since 1980 (see ECB, 2003*b*).

Concerning the level of interest rates, both real and nominal mortgage rates in the EU and in the USA fell considerably in the 1990s, after having increased in the 1980s (see Figure 8). These developments closely followed developments in other fixed-income markets, although some of the variation may have been due to other factors, such as changes in regulations and increased competition.

In the long run, demand for housing should depend on the number of households, which is linked to population growth.⁹ Given recent developments in the demographics of EU countries, the rate of

⁹ Mankiw and Weil (1989) find evidence in the USA that a change in the number of births over time leads to a large change in the demand for housing, which, in turn, could have substantial effects on house prices.

Figure 8
Mortgage Rates in EU Countries and in the USA

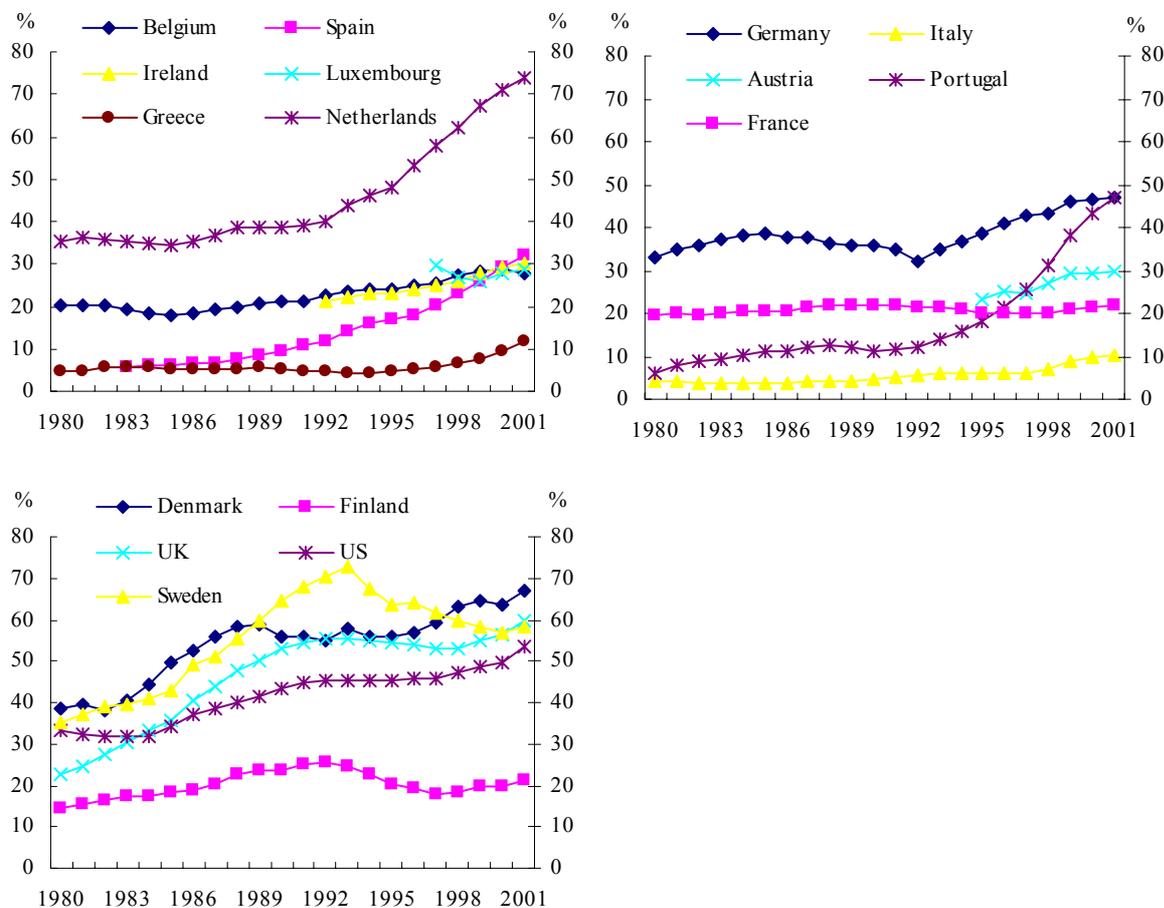


Sources: ECB (2003b) and US Federal Housing Finance Board Monthly Interest Rate Survey.

growth of the number of households in the EU as a whole decelerated over the 1990s, but Greece, Spain, Ireland, Italy, Austria, and the United Kingdom differed from the other countries in this respect. Another microeconomic factor that is of considerable importance is the structure and institutions of credit markets. The advent of financial liberalization, particularly in mortgage markets, has increased the sensitivity of house prices to interest rates, as credit constraints were reduced. During the 1990s, the policy of several EU governments was directed toward favouring owner-occupation, through means of tax exemptions, interest deductibility, and state guarantees for private housing loans, which have been restricted to owner-occupied houses (see ECB, 2003b). Korea gives another interesting example of government policy directed to the housing market. House prices in Korea began

to rise sharply in 2001 after the government announced a series of measures to boost the local housing market that was badly affected by the economic crisis. These included providing greater financial assistance to qualified non-home-owners to purchase their first property through low-interest loans; lowering the acquisition, registration, and capital-gains taxes; and liberalizing the trading in contracts for the right to purchase apartments prior to their completion. Against the background of favourable macroeconomic conditions, house prices rose by more than 25 per cent between 2001 and 2003. The Korean government has since introduced counter measures to stabilize the housing market. Prices slowed initially in late 2002 but have resumed a rising trend again recently, especially in certain areas in Seoul, where demand for housing has remained strong.

Figure 9
Ratio of Nominal Mortgage Debt over GDP



Source: ECB (2003b) and Federal Reserve Board.

(i) Mortgage Markets

Most transactions in the housing market involve a corresponding transaction in the mortgage market. Mortgage markets in the EU largely reflect several deregulation measures which were carried out from the 1980s on (and for some countries even earlier). These measures included, for example, the abolition of interest-rate ceilings, the relaxation both of quantitative credit controls and of contractual restrictions, and the removal of strict barriers to entry into the mortgage market. Public mortgage institutions scaled back the size of their activities, and measures were taken to facilitate the securitization of mortgage loans.

Notwithstanding the common effort toward a more integrated mortgage market, housing credit systems in the EU continue to be characterized by different

types of mortgage contracts, partly reflecting regulatory differences, and partly contracts and conventions established in earlier periods when inflation rates and interest-rate variability were very different across EU countries (see, for example, Maclennan *et al.*, 2000). The relative importance of variable and fixed interest-rate contracts and the fees applying to the borrower in case of an early repayment of the mortgage debt are examples of characteristics of the mortgage contracts where large differences are evident across countries.

The degree of mortgage-market ‘completeness’ can be defined as the ability of the mortgage market to serve a broad range of borrowers and to apply lower mortgage interest-rate spreads. A cross-country comparison addressing the issue of mortgage-market ‘completeness’ is available only for a group of eight European countries (see Mercer

Table 2
Mortgage and Housing Market Indicators

	Residential mortgage debt (% of GDP)		Loan-to-value ratios (%)		Typical loan term (years)	Share of owner-occupied housing(%)		
	1992	2002	typical	max.		1980 ^a	1990 ^a	2002 ^a
Austria	—	—	60	80	20–30	52	55	56
Belgium	19.9	27.9	83	100	20	59	67	71
Denmark	63.9	74.3	80	80	30	52	52	51
Finland	37.2	31.8	75	80	15–18	61	67	58
France	21.0	22.8	67	100	15	47	54	55
Germany	38.7	54.0	67	80	25–30	41	39	42
Greece	4.0	13.9	75	80	15	75	76	83
Ireland	20.5	36.5	66	90	20	76	79	77
Italy	6.3	11.4	55	80	15	59	68	80
Japan	25.3	36.8	80	—	25–30	60	61	60
Luxembourg ^b	23.9	17.5	—	80	20–25	60	64	70
Netherlands	40.0	78.8	90	115	30	42	45	53
Portugal	12.8	49.3	83	90	15	52	67	64
Spain	11.9	32.3	70	100	15	73	78	85
Sweden	37.5	40.4	77	80	<30	58	56	61
United Kingdom	55.5	64.3	69	110	25	58	65	69
United States	45.3	58.0	78	—	30	65	64	68

Notes: ^a Approximate dates; ^b 1994.

Source: OECD (2004).

Oliver Wyman, 2003). Among those, Denmark, the Netherlands, and the UK seem to have the most complete mortgage markets in terms of the range of products offered and choice between alternative interest-rate adjustment and repayment options.

Two key indicators of mortgage-market ability to provide financing are typically the maximum loan-to-value (LTV) ratios and the mortgage repayment terms. Across countries, these indicators tend to be correlated with the size of mortgage debt. High LTV ratios allow borrowers to take out more debt, and longer repayment terms are then needed to keep debt-service-to-income ratios affordable.

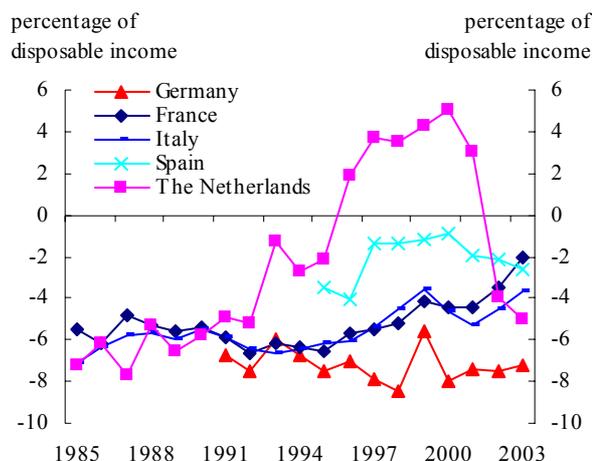
The fragmented evidence available (especially at the EU level) suggests also that LTV ratios have risen in most countries in recent years, possibly reflecting the greater availability of mortgage products that permit households to better match their income and their debt servicing. There are also exceptions to this trend. In Korea, the financial

regulator lowered the guideline for the ceiling on LTV for apartments to 60 per cent from 70–80 per cent in 2002 to curb real-estate speculation.

Over the past two decades most industrialized countries have also shown significant changes in the ratio of household mortgage debt over GDP (see Figure 9). Among European countries, the Netherlands, Portugal, Germany, and Spain all experienced a rapid accumulation of debt during the 1990s. Currently, the ratio is highest in Denmark, the Netherlands, Sweden, and the UK, and lowest in Greece and Italy.

Another important characteristic of the housing market which has an impact on the mortgage-market structure is the extent of owner occupation. Housing tenancy structures differ considerably across OECD countries (see Table 2). Broadly speaking, the share of ownership housing is very high in southern European countries, relatively low in Austria, Germany, the Netherlands, and in some

Figure 10
Mortgage Equity Withdrawal in Selected European Countries



Sources: ECB and EU National Central Banks.

Nordic countries, and around two-thirds in most other industrialized countries. In part, these differences reflect tax incentives, but they are also supposed to reflect differences in access to mortgage financing, since access to mortgage markets should allow households to achieve homeownership earlier. In practice, however, some of the countries with the highest number of owner-occupied houses—such as Italy and Spain—are also those with the least developed mortgage markets. This suggests that mechanisms, such as inter-generational transfers and bequests, are at work in these countries.

(ii) House Equity Withdrawal

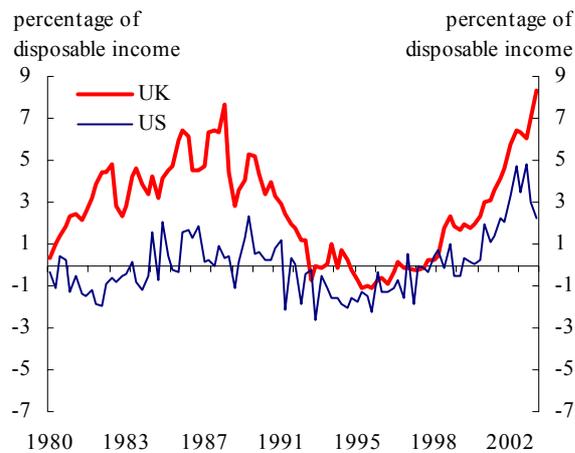
A rise in housing prices is going to affect household consumption if households can effectively spend the extra liquidity on consumption goods (or invest it in financial assets). This can take place essentially in two ways. First, households can refinance an existing mortgage loan and take out more debt. Second, when house prices have risen, households can borrow more from the overall credit system when they transact with each other in the housing market, because the collateral value of their assets has risen. The literature refers to the overall result in both cases as ‘mortgage equity withdrawal’, although the underlying mechanisms are rather different. In most EU countries mortgage equity withdrawal is not common. Over the last decade for example, considering the five largest countries in continental

Europe (all in the euro area), households have been net acquirers of mortgage equity every year, though the amount has declined in recent years (as a percentage of disposable income). The only exception is the Netherlands, where the household sector withdrew mortgage equity between 1996 and 2002, coinciding with the boom in the domestic housing market (see Figure 10).

Mortgage equity withdrawal is much more common in the UK and US markets, and it has been increasing significantly in the last few years (see Figure 11). As outlined above, institutional set-ups in housing and mortgage markets are likely to be the main reason behind these developments. Other factors of importance could be low transaction costs and a high rate of home ownership.

Evidence in the USA and in the UK seems to confirm that the most recent increase in mortgage equity withdrawal has been supportive of consumption. A recent survey conducted by the Federal Reserve Board shows that 35 per cent of the equity withdrawal funds were spent in home improvements, 26 per cent in repaying other debts, 16 per cent for consumer expenditures, 11 per cent for stock-market and other financial investment, 10 per cent on real-estate or business investment, and 2 per cent for taxes. A similar survey commissioned by the Bank of England indicated that in the UK, 20 per cent of the households used the equity funds to repay debts.

Figure 11
Mortgage Equity Withdrawal in the UK and the USA



Sources: Bank of England and Federal Reserve Board.

(iii) Discussion

The importance of housing for household wealth, the effect of boom–bust cycles on financial stability, and the role of mortgage features for the transmission of monetary policy show how crucial it is to consider housing and mortgage markets as a part of financial structure. This is particularly true in Europe where the creation of a single market for financial services has so far had little impact (see Maclennan *et al.*, 2000). Even within the current European Monetary Union countries, there is significant divergence. This seems to be an important difference with other places where the mortgage

market is fairly homogeneous within each currency area. As the euro zone expands it will be important to understand the effect of this factor, particularly on monetary policy transmission channels.

Efficiency factors are also important in the housing and mortgage markets as Box 2, on the mortgage-backed-securities markets in the USA and Europe illustrates. The size of the market in the USA and the scale of the government-sponsored agencies are now so large that issues of stability have also come to the fore. A number of commentators worry that if any of the large agencies were to fail there would be a significant risk of instability.

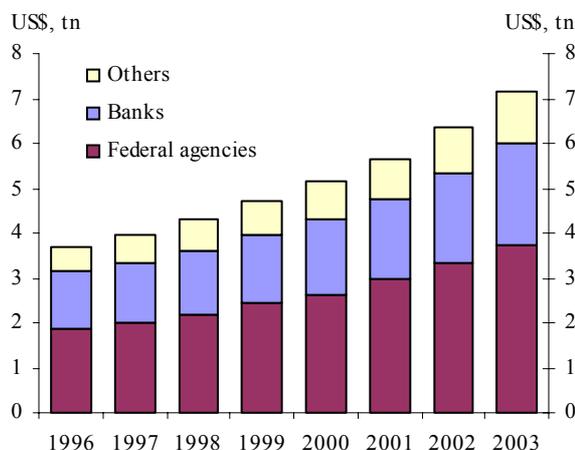
Box 2

The Mortgage-backed-securities Market and the Role of Government-sponsored Agencies

The market for mortgages and for mortgage-related products has increased remarkably in the last few years. It has become the biggest fixed-income market in the United States (see Figure 12). While in the USA more than half of the stock of mortgages is securitized, the European market for mortgage-related products continues to be very small, albeit with very large rates of growth occurring in the last few years.

This situation reflects the existence of a number of features of the US mortgage market which have encouraged the growth of securitization and reduced the need for mortgage lenders to hold capital. The US mortgage market is currently dominated by mortgage banks, which are typically the originators of the loans. These loans are then sold primarily to the US government-sponsored enterprises. These housing agencies play a pivotal role in the US mortgage market. They buy individual packages of mortgage loans from lending institutions and either hold them on their balance sheet or securitize them, selling them into the secondary mortgage market. There are currently five mortgage agencies in the USA, with different corporate structures: one is fully private (Sallie Mae), one is fully public (Ginnie Mae), and

Figure 12
Outstanding Home Mortgages in the United States



Note: Federal agencies are government-sponsored enterprises and federally related mortgage pools.
Source: Federal Reserve Board.

Box 2 (continued)

three have a hybrid statute (Fannie Mae, Freddie Mac, and FHLB).¹⁰ These last three agencies are privately owned, but operate under a charter with ‘implicit’ state guarantee and some advantages (taxes, registration fees, disclosure requirements).¹¹ Fannie Mae and Freddie Mac are the largest among the agencies. They were created in the 1930s and in the 1970s, respectively, as part of an effort to increase home ownership and improve liquidity in the residential mortgage market. They enjoy an implicit US government guarantee: there is a belief that in case of possible failures, the agencies would be bailed out by the US government. In other respects, however, they are conventional shareholder-owned institutions.

Fannie Mae and Freddie Mac have two main lines of business. On the one hand, they buy and hold mortgages and issue unsecured bonds (in both callable and non-callable form and with various maturities). On the other hand, they provide a guarantee on the mortgage-backed securities (MBS), backed by the pools they have assembled in exchange for a fee. They have been increasing significantly the importance of their first line of business, which is more profitable, especially in the last few years. In addition, they have recently been annually repurchasing about 50 per cent of their newly issued MBS each year.

Among the financial products related to the mortgage market, the MBS market has grown particularly strong over the last decade, with an average growth of more than 10 per cent per annum in terms of outstanding amounts. It is currently the largest fixed-income sector in the USA, with an outstanding balance of US\$4.4 trillion compared to a balance of US\$3.8 trillion of Treasury securities.¹²

¹⁰ Government National Mortgage Association (Ginnie Mae) is a US government-owned corporation within the Department of Housing and Urban Development. Its securities are the only mortgage-backed securities that offer the full faith and credit guaranty of the US government. Student Loan Marketing Association (SLM or Sallie Mae) was created by the US Congress in 1972 as a government sponsored enterprise (GSE). But privatization began in 1997 and the organization offers a wider range of financial loans. The GSE became a subsidiary of SLM Corporation and will be dissolved and become a fully privatized entity by 2006.

¹¹ Fannie Mae and Freddie Mac are the only for-profit shareholder-owned companies in the USA that have a special status granted by a specialized Federal charter. They are exempt from local and corporate taxes and their securities are treated as government securities under federal securities laws. Moreover, they have access to a Treasury line of credit, as the Secretary of the Treasury has discretionary authority to purchase up to \$2.25 billions in obligations issued by them.

¹² End-2003. The total MBS outstanding are the sum of MBS issued by federal agencies and by other asset-backed securities issuers.

Box 2 (continued)

As already mentioned, the European market for mortgage-related products is very small. MBS issuance accounts for around 50 per cent of the overall European securitization market, but still represents a small portion of all funding supply for mortgages. Despite significant growth rates in issuance recorded over recent years, the European market for MBS is liquid only in the UK and the Netherlands.¹³ In the last few years there has been a limited number of cases of securitization of mortgages originated in another country, but they never involved mortgages originated in more than one country.

The main reason why the European MBS market remains small and fragmented is the lack of a harmonized legal framework concerning both features and rules applicable to mortgages and mortgage loans, and the securitization of such loans. This is reflected in the great variety of mortgage products across Europe. In addition, mortgage markets are essentially local markets and require in-depth knowledge of the local housing markets, and only a few European banks originate mortgages in more than one EU country.

Some form of common multi-seller platform has emerged at the domestic level, but the private sector has to overcome serious coordination problems when setting up these kinds of platforms.¹⁴

IV. CONCLUDING REMARKS

We have considered the different patterns of institutional ownership in the euro area, the UK, the USA, Japan, and non-Japan Asia. The role of institutions in each country is quite different. In the euro area and Japan, the most important institutions are banks and other MFIs. Households put a large amount of their assets into their instruments. In the UK and USA, households are much more exposed to equity fluctuations. In the UK, this is through equity held in insurance companies and pension funds, while in the USA there is a considerable amount of directly held equity in addition. One interesting development in recent years is that Central Banks, particularly those in Asia, have become major institutional investors. This is likely to have a significant impact on the US Treasury market and the determination of medium-term interest rates. The difference in objective functions between Central Banks and private financial institutions is also likely to have important beneficial implications for financial stability.

We have also considered differences in the housing and mortgage markets. Since housing is such a

major component of wealth in most countries, these are a key part of the financial structure of economies. Housing prices have risen in most countries, but at widely different rates. This has led to differences in the rate of equity withdrawal. Possible falls in house prices in countries where large increases have occurred potentially impose a systemic risk. The large differences in the structure of mortgage markets across countries suggest a significant difference in efficiency. The role of MBS in the USA compared to other countries is particularly striking in this regard.

Institutional investors and the housing and mortgage markets are important components of financial structure. They play a significant role in determining the efficiency, stability, and monetary policy transmission properties of a financial system. One important question concerns whether one financial structure is better than another. To answer this question requires a full understanding of how different financial structures affect efficiency, stability, and monetary policy transmission and how these factors should be traded off. We believe that much more research remains to be done before these issues are fully understood.

¹³ See, for example, Moody's Investor Service (2004).

¹⁴ Examples of common structures that have emerged at the domestic level are the Promise-Provide platform sponsored by the Kreditanstalt für Wiederaufbau and the multi-seller securitization of Spanish saving and cooperative banks. On 17 November 2003, the European Financial Mortgage Association project team released a report proposing a new European-based financial institution, the European Mortgage Finance Agency (EMFA).

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