

## VI. HOUSE PRICES AND ECONOMIC ACTIVITY

In many OECD countries, movements in real house prices have been closely correlated with the business cycle. Strong increases in property values were associated with the overheating in the late 1980s in several countries, and are widely considered to have contributed significantly to an unsustainable expansion in demand. With house prices rising more rapidly than most other prices in several Member countries in the second half of the 1990s, their potential macroeconomic impact is again becoming an important issue. In the United States for instance, the contribution of real estate developments to the current economic expansion has been emphasised recently; house price developments are being scrutinised in the United Kingdom as advanced indicators of demand pressure; in several smaller European countries, the potential impact of booming property values on demand has been a matter of concern.

*House price movements have macroeconomic impacts*

This chapter examines the role of house prices in influencing private consumption and residential investment in OECD countries.<sup>1</sup> The main results suggest that:

- House prices have a significant positive impact on private consumption.
- House prices also appear to have an important effect on private residential investment.
- As might be expected, property prices can be useful indicators of demand pressures in the economy.

The first section of this chapter documents the developments of inflation-adjusted house prices over the past three decades in selected OECD countries. The second section assesses how changes in the mortgage market since the early 1970s are likely to have affected the link between property prices and demand. The third and fourth sections examine the role of house prices in influencing respectively, private consumption and residential construction. The final section discusses the policy implications of the findings of the chapter.

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### House price movements and economic activity

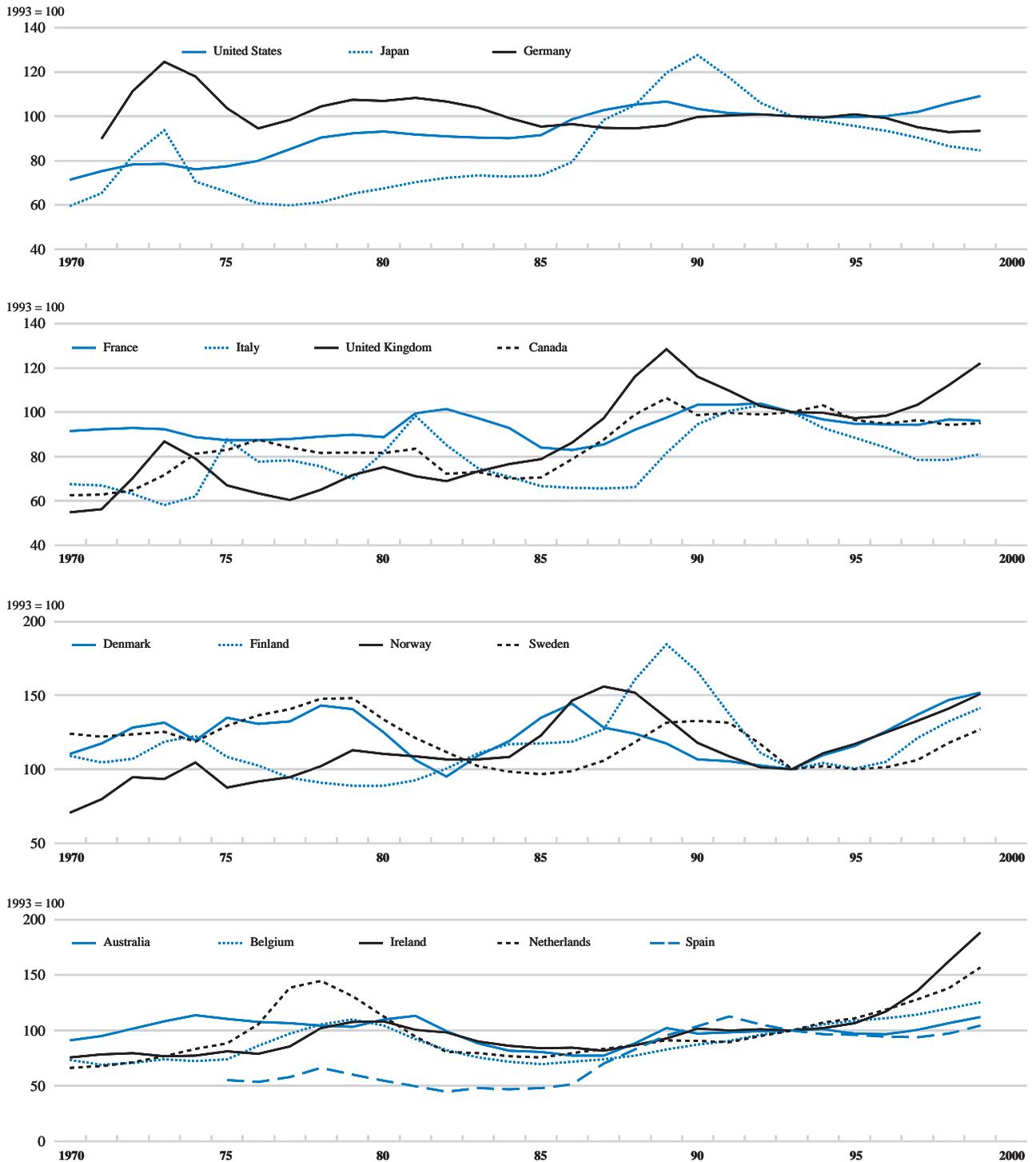
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Many OECD countries have experienced large variations in the level of house prices<sup>2</sup> in real terms, *i.e.* adjusted for movements in the consumer price index, over the 1970-99 period (Figure VI.1). Measured as the standard deviation of the annual growth rate of real house prices, fluctuations have been particularly strong in

*House price fluctuations have been strong in many OECD countries...*

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1. Detailed analyses of the trends, outcomes and issues in housing market of OECD countries can be found in Girouard and Blöndal (2000).  
2. Data on house prices for 16 countries have been provided by the Bank for International Settlements. See footnote of Figure VI.1 for detailed definitions of data across countries. Regional house price dynamics can be very large. However, in this paper property price developments are considered at the national level.

Figure VI.1. Real house price developments, 1970-1999<sup>1</sup>

1. Data on residential property prices are not strictly comparable across countries due to differences in definitions. In most countries, the house price index covers house prices on a national basis. However, in Australia, the index refers to a weighted average of capital cities and regional areas, whereas in Germany, the index refers to the prices of houses located in western Germany. In Japan, the price index refers to residential land prices. Furthermore, depending on the country, the index relates to prices of existing and/or new houses, to prices of houses for owner-occupation only or also to prices of second residences, to prices of houses for which a loan has been applied for only or to a mix-adjusted house price index taking into account several differences in property type. House prices are deflated by the consumer price index.

Source: Bank for International Settlements.

Finland, Italy, Japan, the Netherlands, Spain and the United Kingdom. In these countries, the cumulative increase and decrease in property values over the cycle have been striking:

- In Japan, inflation-adjusted property prices rose by close to 75 per cent in the five years to 1990 and have fallen by a third since then.
- In Italy, real house prices increased by more than 50 per cent in the 1988-92 period. In 1974-75 and 1979-81 prices had risen by around 40 per cent in real terms.
- In the United Kingdom, inflation-adjusted house prices rose by more than 50 per cent in 1972 and 1973, only to fall by 30 per cent in the subsequent four years. In the latter part of the 1980s, real house prices rose by more than two-thirds in a period of four years. They then fell by more than 20 per cent in the five years to 1994.
- In the Netherlands, real property prices rose by close to 75 per cent in the 1974-78 period, and then fell by 50 per cent by the mid-1980s. The cumulative increase in real house prices since 1993 has been more than 50 per cent.
- In Finland, an increase of more than 50 per cent in the three years to 1989 was followed by a 45 per cent fall in the subsequent four years.
- In Spain, real house prices rose by 120 per cent in the five years to 1991.

In many OECD countries, changes in real house prices appear to be closely correlated to business cycles as measured by OECD output gap indicators. Falling property values have accompanied recessions in Japan and some European Union countries since the early 1980s. Conversely, the overheating in the late 1980s in the United Kingdom and some of the Nordic countries was associated with sustained growth of inflation-adjusted real estate prices. Statistical correlations suggest strong links, in particular in the United Kingdom, Canada, Germany, Spain and some of the Nordic countries over the 1970-99 period. For France, Japan, and Italy the correlation coefficients are significant for the period since 1980.<sup>3</sup>

*... and have in general been closely associated with the business cycle over the past 30 years*

Since the mid-1990s, real house prices have risen rapidly in the United Kingdom, Ireland, the Netherlands, the Nordic countries and Australia. Sustained, if more moderate, price increases have also taken place in the United States. The cumulative rise in house prices in these countries has been associated with strong economic expansion, with most of them now operating near or above full capacity. The housing market was weak in a few countries in the latter part of the 1990s. In Japan, real property prices have continued their gradual but steady decline since 1990. In Germany the housing market is still suffering from the hangover following the unification boom and from the withdrawal of tax subsidies in the late 1990s.

*Recent increases in house prices have coincided with strong economic expansions*

Changes in house prices affect the wealth position of households as commonly measured. Indeed, residential property is often the single most important component of the asset side of a household balance sheet. Overall, the relative weight of real estate has fallen somewhat in the 1990s as a result of the sharp increase in the price

*Changes in house prices affect the wealth position of households...*

3. Correlation coefficients for the United Kingdom, Germany, Canada, Spain and some of the Nordic countries range from 0.5 to 0.75 over the 1970-99 period. They are statistically significant in France and Italy after 1980 at 0.6 and 0.8 respectively. In the United States, a significant correlation is observed since 1990. In Japan, there is no evidence of a correlation between property prices and the output gap except in the 1970s.

Table VI.1. Household assets

Per cent of household total assets

	Housing assets					Other assets in 1998		
	1970	1980	1990	1995	1998	Equity	Other financial assets	Other tangible assets
						<i>Per cent</i>		
United States	22	27	27	23	21	20	50	8
Japan	10	14	8	10	10	3	44	43
Germany	..	..	34	34	32	3	35	30
France <sup>a</sup>	34	44	43	42	40	3	47	9
Italy	36	40	37	35	31	17	39	13
United Kingdom	..	40	44	33	34	12	47	7
Canada	21	22	23	22	21	17	39	23

a) 1998 data refer to 1997.

Sources : OECD, *Financial Accounts of OECD countries*; United States, Federal Reserve, *Flow of Funds Accounts of the United States*, September 2000; Japan, Economic Planning Agency, *Annual Report on National Accounts, 2000*; Germany, Deutsche Bundesbank, *Ergebnisse der gesamtwirtschaftlichen Finanzierungsrechnung der Deutschen Bundesbank*; France, INSEE, *25 ans de Comptes de Patrimoine (1969-1993)*, and *Rapport sur les Comptes de la Nation*. (France's estimates for household equity holdings have been corrected to exclude non-quoted shares. Data presented are based on national authorities' estimates of the ratio of quoted to non-quoted shares in household portfolios); Italy, Banca d'Italia, *Supplementi al Bollettino Statistico* and unpublished estimates; United Kingdom, Central Statistical Office, *United Kingdom National Accounts, Financial Statistics*; Canada, Statistics Canada, *National Balance Sheet Accounts*.

of equities, but it still accounts for 20 per cent of total gross household assets in the United States and Canada, and between 30 to 40 per cent in the major European countries, (Japan, at 10 per cent, is an exception to this picture) (Table VI.1). As owner-occupation rates exceed 50 per cent in most OECD countries,<sup>4</sup> a large number of households will be affected by changes in property prices.

### ... and are linked to changes in household borrowing

House price fluctuations also tend to be associated with changes in household borrowing. An increase in property prices generally goes hand in hand with increased net mortgage lending, the predominant mode of lending to households, while falling real estate prices are typically accompanied by decreased mortgage borrowing by households. These co-movements in property prices and household borrowing were comparatively weak in the 1970s, but they have become stronger in the 1980s and 1990s.

## Deregulation in the mortgage market

### Before the 1980s, mortgage markets were subject to restrictions in many countries

The increased correlation between house prices and mortgage lending to households since the early 1980s reflects changes in the financial system that have expanded the scope for households to use their housing wealth as a basis for borrowing. In the regulatory environment prevailing in most countries in the 1970s, financial institutions usually had limited scope to increase mortgage lending, despite a higher value of assets that could be used to secure loans. Mortgage lending was generally reserved for specialised institutions that were prohibited from engaging in other activities, direct quantitative limits were imposed on mortgage loans or the funding capacity of these institutions curtailed, and terms and conditions of mortgage lending were regulated.

4. See Chapter VIII, "Monetary Policy in a Changing Financial Environment" in *OECD Economic Outlook 67*, June 2000.

*Financial reforms have increased households' access to mortgage credit...*

Financial reforms since the 1980s have significantly reduced constraints on households' borrowing (Table VI.2). In some cases it contributed to macroeconomic fluctuations as both policymakers and market participants went through a learning process as they adapted to the new environment.<sup>5</sup> In the United States, the United

— Table VI.2. Selected financial deregulation and liberalisation measures affecting the housing market —

United States	Securitisation introduced in 1971 Interest rate deregulation, phasing out of Regulation Q <sup>a</sup> over four years starting in 1980 Elimination of portfolio restrictions for thrifts in 1980
Japan	Bank specialisation requirements reduced in 1993 Interest rate deregulation completed in 1994
Germany	Interest rate deregulation in 1967 Implementation of Second Banking Directive (89/646/EEC) <sup>b</sup> into national law in 1992
France	Bank specialisation requirements reduced in 1984 Elimination of credit controls in 1987 Securitisation introduced in 1991 Implementation of Second Banking Directive (89/646/EEC) into national law in 1992
Italy	Interest rate deregulation in 1983 Credit ceilings eliminated in 1983 and temporarily re-imposed in 1986-87 Implementation of Second Banking Directive (89/646/EEC) into national law in 1993 Separation of long-term and short-term credit institutions abolished in 1994
United Kingdom	Credit controls, "the corset", eliminated in 1980 Bank of England's minimum lending rate abolished in 1981 Banks allowed to compete with building societies for housing finance after 1981 Building societies allowed to expand their lending business after 1986 Government withdrew guidelines on mortgage lending in 1986 Securitisation introduced in 1987 Implementation of Second Banking Directive (89/646/EEC) into national law in 1993
Canada	Ceiling on interest rates on bank loans eliminated in 1967 Restrictions on the banks' involvement in mortgage financing abolished in 1967 Banks allowed to have mortgage loan subsidiaries in 1980 Securitisation introduced in 1987
Australia	Bank specialisation requirements eliminated for large domestic banks in 1980 Quantitative bank lending guidance eliminated in 1982 Interest rate deregulation in 1985
Denmark	Liberalisation of mortgage contract terms in 1982 Interest rate deregulation in 1982 Elimination of restrictions on mortgage bond issuance in 1989 Implementation of Second Banking Directive (89/646/EEC) into national law in 1991
Finland	Funding quotas from the Central Bank to commercial banks eliminated in 1984 Interest rate deregulation in 1986 Government withdrew guidelines on mortgage lending in 1987 Securitisation introduced in 1989
Netherlands	Interest rate deregulation in 1980 Implementation of Second Banking Directive (89/646/EEC) into national law in 1992
New Zealand	Credit-allocation guidelines removed in 1984 Interest rate deregulation completed in 1984
Norway	Lending controls abolished in 1984 Interest rate deregulation in 1985
Sweden	Interest rate deregulation in 1985 Lending ceilings for banks abolished in 1985

a) Deposit interest rate ceilings.

b) This Directive refers to the co-ordination of laws, regulations and administrative provisions relating to the taking up and pursuit of activities and services of credit institutions. It is aimed at further liberalising banking services from the point of view of both the freedom of establishment and the freedom to provide financial services.

Sources: Williamson and Mahar (1998), Freedman (1998), Booth *et al.* (1994), Drees and Pazarbasioglu (1995), and OECD.

5. As became evident later, many institutions over-extended mortgage credit in the new competitive environment. Indeed, many countries suffered serious problems with mortgage loans, requiring costly public interventions (see Edey and Hviding, 1995).

Kingdom, the Nordic countries, Australia and New Zealand, the liberalisation process was relatively quick and was almost completed by the mid-1980s. In some continental European countries and Japan, deregulation tended to be less comprehensive and slower.

*... and competition in the mortgage market has intensified*

In the countries where liberalisation was completed by the mid-1980s, competition in the mortgage market rose as new entrants fought to gain market share:

- In the United States, the reduction of preferential tax treatment in favour of thrifts,<sup>6</sup> the elimination of interest-rate ceilings and government measures to develop secondary markets in mortgage bonds increased competition between banks and thrifts for customers. The share of non-thrift institutions in total mortgage origination, *i.e.* direct lending to households, rose from 45 per cent in the late 1970s to 60 per cent in the late 1980s, and their share in outstanding home mortgages reached 70 per cent in the late 1980s.
- In the United Kingdom, banks entered the mortgage market as credit controls were lifted and restrictions on mortgage lending for non-housing purposes abolished. The market share of building societies in net advances, *i.e.* new loans secured on dwellings, which accounted for 50 per cent of the mortgage market in the late 1970s, dropped to 35 per cent by the late 1980s. Housing credit was expanded significantly, and the range of types of contract available was increased.
- In Canada, ceilings on interest rates on loans and restrictions on commercial banks' involvement in mortgage financing were abolished in 1967, permitting banks to invest in non-insured mortgages. Since then, there has been relatively strong competition between banks and trust and mortgage loan companies in the market for mortgages. The banks' share of the residential mortgage market (including securitised mortgages) climbed steadily from 10 per cent in 1970 to about 55 per cent in the late 1990s (Freedman, 1998).
- In most Nordic countries, the impact of financial deregulation was particularly strong on the housing market as it was accomplished within few years and in conditions when tax systems gave strong incentives to borrow. The lifting of lending and deposit rate ceilings opened the way to more competition by facilitating entry of banks and other financial institutions into new segments of the credit market.

In Germany, the financial system was largely liberalised in the early 1970s, with all interest rate restrictions having already been removed in 1967. However, competition on the funding side of the banking sector has remained somewhat distorted given that public-sector financial institutions, accounting for a large share of the residential mortgage market, benefit from advantageous financing conditions due to perceived public guarantees.

In a number of other countries the reform process was less comprehensive and competitive pressure less intense in the mortgage market:

- In France, deregulation allowed commercial banks to compete in the mortgage market after 1987, but restrictions on interest rates remained for a longer period. Although market-driven lending became the rule, funding sources

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6. The term "thrift" refers to savings and loans and saving banks. Both institutions have traditionally focused on retail deposit gathering and mortgage lending.

were not completely competitive, and public-sector financial intermediaries still enjoy significant advantages. Until mid-1999, the *Crédit Foncier de France*, the main state housing loan institution, had the monopoly right to issue mortgage bonds.

- In Italy, quantitative ceilings on bank loans were abolished in 1983 but reimposed temporarily in 1986 and 1987. In 1994, important restrictions on activities in the banking sector were eliminated and all types of credit institutions were allowed to issue mortgage bonds and grant long-term loans. Banks are nonetheless subject to various procedural and lending restrictions on their mortgage activity, limiting their possibilities to engage in mortgage lending.
- Japan took a gradual path to deregulating its financial markets. Interest rate deregulation began in the early 1980s but restrictions were not completely eliminated until the mid-1990s and credit controls were lifted gradually in the early 1990s. However, in the second half of the 1980s, housing loans increased massively as banks were faced with abundant liquidity due to the relaxed monetary policy. They lent to housing loan corporations (*jusen*), which were active in mortgage financing and contributed to the substantial expansion of property loans.

Reforms in financial markets have often been reflected in the extent to which households inject equity into the housing market or, in some cases, withdraw it, *i.e.* the difference between households' residential investment and the flow of net mortgage lending to households (Figure VI.2). Deregulation of the mortgage market in the 1980s was accompanied by housing equity withdrawal on a large scale in the

Figure VI.2. Housing equity withdrawal in selected countries<sup>1</sup>

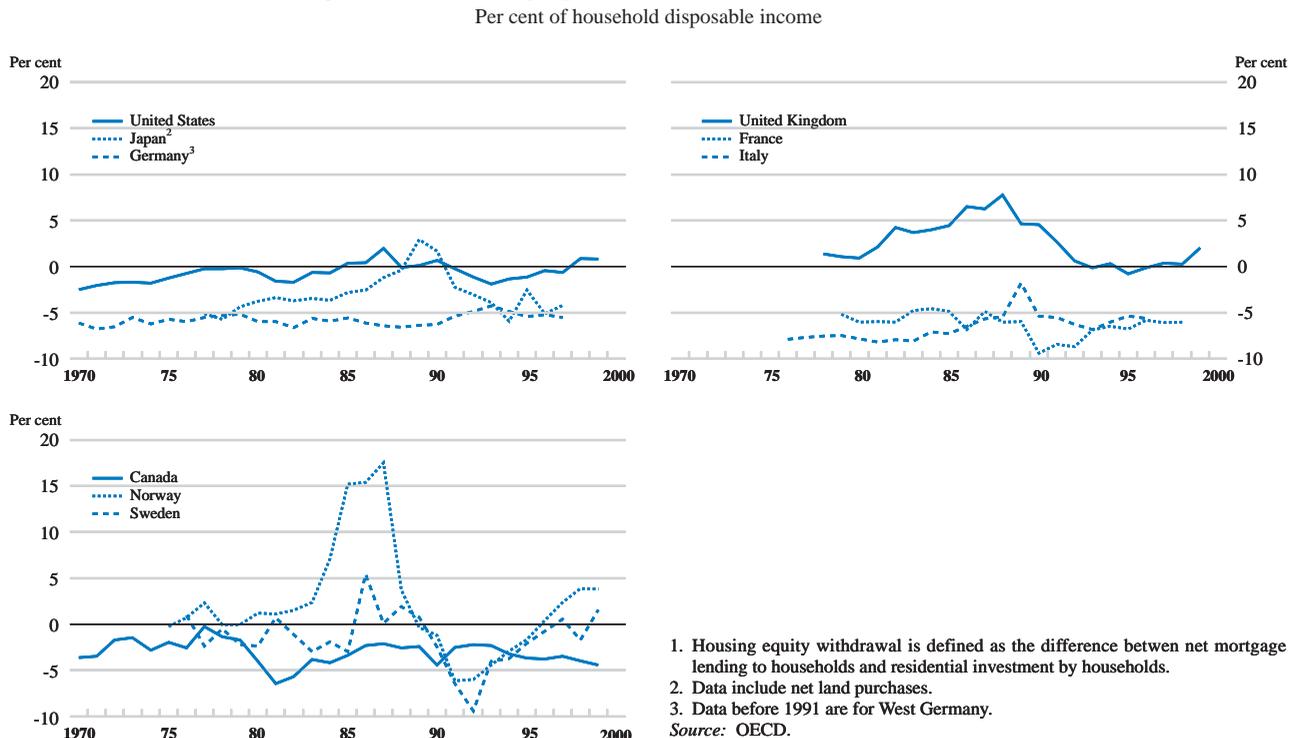


Table VI.3. Mortgage markets in OECD countries: Institutional set-up<sup>a</sup>

	Main lenders <sup>b</sup> (approximate market share)	Interest adjustment (approximate market share)	Typical term (years)	Maximum loan-to-value ratio <sup>c</sup> (per cent)
United States		Fixed rate: 74% Initial fixed-period rate: 26%	30	75-80 <sup>d</sup>
New mortgages:	Mortgage companies: 58% Commercial banks: 24% Savings Institutions: 15%			
Outstanding mortgages:	Mortgage pools: 55% Commercial banks: 19% Savings institutions: 12%			
Japan	Housing loan corporation: 30% Commercial banks: 64%	Fixed rate: 36% Initial fixed-period rate and variable rates: 64%	25-30	70-80 <sup>d</sup>
Germany	Mortgage banks: 28% Savings banks: 26% Co-operative and Mutual credit banks: 14%	Initial fixed-period rate: 100%	25-30	60-80
France	Co-operative and Mutual credit banks: 34% Commercial banks: 33% Savings banks: 13%	Fixed rate: 60% Variable rate: 40%	15	80
Italy	Commercial Banks: 100%	Initial fixed-period rate: 50% Fixed rate: 50%	15	50
United Kingdom	Building societies: <sup>e</sup> 23% Commercial banks: 71%	Initial fixed-period rate: 95% Variable rate: 5%	25	100
Canada	Commercial banks: 55% Trust companies: 11% Co-operative credit institutions: 14%	Fixed or initial fixed-period rate: 92% Variable rate: 8%	25	75 <sup>d</sup>
Austria	<i>Bausparkassen</i> : 20% Savings banks: 26% Mortgage banks: 19%	Initial fixed-period rate: 100%	20-30	60-80
Belgium	Commercial banks: 91% Insurance corporations and Pension funds: 6%	Initial fixed-period rate: 79% Fixed rate: 21%	20	80-85
Denmark	Mortgage banks: 90% Commercial banks: 10%	Fixed rate: 78%	30	80
Finland	Commercial banks: 38% Specialised lenders: 38% Co-operative and Mutual credit banks: 19%	Initial fixed-period rate: 90%	15-18	70-80
Greece	Commercial banks: 67% Specialised institutions: 31%	Initial fixed-period rate: 88% Fixed rate: 12%	15	70
Ireland	Building societies: 62% Commercial banks: 38%	Initial fixed-period rate: 70% Variable rate: 30%	20	90
Netherlands	Commercial banks: 85% Insurance corporations and Pension funds: 15%	Initial fixed-period rate: 80% Variable rate: 20%	30	75
Norway	Savings banks: 43% Commercial banks: 38%	Initial fixed-period rate: 10% Variable rate: 90%	15-20	80
Portugal	Commercial banks: 100%	Variable rate: 100%	15	90
Spain	Savings banks: 52% Commercial banks: 38%	Initial fixed-period rate: 50% Variable rate: 50%	15	80
Sweden	Mortgage banks: 80% Insurance corporations and Pension funds: 10% Commercial banks: 10%	Initial fixed-period rate: 100%	< 30	60-80

Note : In a fixed rates contract the interest rate does not change throughout the entire duration of the loan. An initial fixed-period rate contract will start with a period during which the interest rate does not change. After this initial period, the interest rate can either be fixed for another period or vary. In a variable rate contract the interest rate could change from every day up to one year.

a) Most recent data available.

b) Market shares of main lenders in the United States refer to new mortgage, representing the flow of new loans, and to outstanding mortgages defined as the stock of loans (including securitisation). For Canada and European countries, securitised mortgage loans are included.

c) Normal maximum loan-to-value ratios are presented here. The European Mortgage Federation also reports absolute maximum loan-to-value ratios.

d) For these countries, typical loan-to-value ratio are presented.

e) Since 1997 a number of building societies have converted their status of mutual institutions to commercial banks. The share of building societies indicated above refers to the remaining institutions under the Building Society Act.

Sources: European Mortgage Federation (2000), Noguchi and Poterba (1994), US Department of Housing and Urban Development, Canadian Housing and Mortgage Corporation.

United Kingdom and Norway, and, to a lesser extent, in the United States and Sweden. While this was followed by a period of no housing equity withdrawal or housing equity injections, there has been a tendency in these countries for mortgage borrowing by households to exceed their residential investment in the latter part of the 1990s. Such equity withdrawal provides households with liquidity and may work to provide a stimulus to consumption. By contrast, in countries where the deregulation of the mortgage market has been less extensive, the household sector has been permanently injecting equity into housing, in most cases by substantial amounts. Japan is an exception in this respect, but, as noted earlier, the positive housing equity withdrawal in the 1980s was primarily related to ample liquidity in the financial system.

Partly reflecting the uneven progress in liberalising mortgage markets, the terms and conditions on mortgage loans vary considerably across countries (Table VI.3). For example, normal maximum loan-to-value ratios range from 50 per cent in Italy to 100 per cent in the United Kingdom, the standard length of mortgage loans varies from 15 years in France, Italy, Finland and Greece to 30 years in the United States, Denmark, and the Netherlands, and the share of variable rate mortgage loans ranges from 10 per cent to 100 per cent. While these differences are likely to reflect differing regulations and intensity of competition in mortgage market, they also mirror differences across countries with respect to legal procedures (*e.g.* the granting of loans and repossession in the case of loan default) and differences in regulations of the rental sector.

*However, convergence across countries is still far from complete*

## Housing wealth and private consumption

Changes in property prices can have powerful impacts on private consumption through wealth effects.<sup>7</sup> Thus, owner-occupiers may perceive house price increases as an addition to their wealth, and reduce their saving out of current income.<sup>8</sup> However, households planning to purchase their own homes may reduce their consumption in the wake of higher house prices as they will have to save more for higher down-payments and repayments. For these reasons, the strength of the wealth effect is uncertain.

*Changes in house prices may influence consumption through a wealth effect...*

Changing house prices may influence private consumption, even if wealth effects are absent, to the extent they influence the borrowing capacity of households.<sup>9</sup> Credit rationing was often an inherent feature in a system that artificially fixed interest rates at low levels. But rationing at the margin may also be a feature of a market-based system for reasons such as asymmetric information between borrowers and lenders (see Deaton, 1991, for a review of arguments for credit constraints). In practice, households' ability to borrow is strongly dependent on their capacity to

*... and through an easing of liquidity constraints on households*

7. See Miles (1995) for a comprehensive coverage of issues related to the housing markets and their macroeconomic impact.

8. It is also possible that owners do not feel wealthier when the value of their property goes up since their implicit rental costs have gone up as well. However, in this case the increased implicit rental cost could induce the owners to trade down and the resulting housing equity withdrawal could be used to increase consumption.

9. See Kennedy and Andersen (1994) for a comparative analysis of the role of house prices in household saving.

### Box VI.1. Wealth and consumption: some recent empirical evidence

The OECD has examined the long-term determinants of consumption in major OECD economies, and in particular the role of housing wealth in driving households' current spending. Building on earlier OECD work on the impact of stock market wealth on private consumption, the approach adopted has been to estimate structural consumption equations. Two different long-run specifications have been employed. The first one relates private consumption to the net worth of households (or the personal sector). This implicitly assumes that the

marginal propensity to consume (MPC) is equal for different forms of wealth, so that a dollar change in housing wealth is constrained to have the same effects as a dollar change in financial or other forms of wealth. The second specification allows the MPC to differ across three major components of total net worth: net financial wealth (*i.e.* financial assets minus financial liabilities), housing wealth and other wealth derived as a residual. Apart from these central variables, both specifications include interest rate and inflation terms.

#### Estimates of marginal propensity to consume

	MPC out of net worth	MPC out of housing wealth
United States	0.04	0.05
Japan		0.16 <sup>a</sup>
France	0.03	0.04 <sup>a</sup>
United Kingdom	0.02	0.03 <sup>a</sup>
Canada	0.05	0.12

a) Net housing wealth, *i.e.* gross housing wealth minus home mortgages.  
Source: OECD.

The main results suggest that the long-run marginal propensity to consume out of net worth (including housing wealth) in the United States, France, the United Kingdom and Canada ranges from 0.02 to 0.05 (Table). Regression results also indicate that an extra dollar of housing wealth in the United States will ultimately result in increased private consumption of about 5 cents. The marginal propensity to consume out of housing wealth in France and in the United Kingdom is estimated to be somewhat smaller. On the other hand, the OECD estimates for Japan and Canada are high and significantly above results reported in the literature.

The importance of housing wealth in determining private consumption is supported by econometric studies in a number of countries.<sup>1</sup> Recent work in the United States suggest that for each dollar increase in housing wealth, households increase their consumption by 3 to 5 cents (Greenspan, 1999, and Brayton, Davis and Tulip, 2000).<sup>2</sup> In the United Kingdom, many studies have attempted to link consumption behaviour with the developments in the housing market.<sup>3</sup> The estimated long-term housing wealth elasticity ranges from 6 per cent to 15 per cent and corresponding estimates of marginal propen-

sity to consume out of housing wealth vary between 0.02 and 0.08. In Japan, Ogawa *et al.* (1996) reported property wealth effects (land and housing wealth) with estimates of the long-term elasticity ranging from 6 per cent to 10 per cent. In Italy, little evidence of housing wealth effects is reported in the literature. However, Rossi and Visco (1995) provided evidence of a marginal propensity to consume out of total wealth of the order of 0.03 to 0.035, once account is taken of double counting of social security transfers in the measurement of disposable income and pension wealth. Similarly, in Canada, evidence of housing wealth effects is limited in empirical studies. Bérubé and Côté (2000) presented estimates for long-term net worth elasticity ranging from 2 per cent to 4 per cent. For France, a variety of studies provide no strong evidence of any wealth effect at all.

The importance of housing equity withdrawal for private consumption is also supported by OECD regression analysis for the United States, the United Kingdom, France and Canada. In these countries, changes in housing equity withdrawal influence the saving ratio, operating in addition to total wealth effects that determine the long-run value of the saving rate.<sup>4</sup>

1. See Boone *et al.* (1998) for a review of the role of stock market fluctuations on wealth and consumption.

2. The estimates of marginal propensity to consume vary substantially across models as they depend on the particular measure of wealth that is included in the set of explanatory variables, on the measure of private consumption, on the data sample, and on the particular specification being estimated.

3. For a survey, see Church, Smith and Wallis (1995).

4. Recent work in the United States suggests that cash-out refinancing activity in 1998 and early 1999 is likely to have boosted consumption spending, but by only a small amount relative to aggregate consumption spending (Brady *et al.*, 2000).

supply assets that can serve as a security for repayments and real estate is the most widely used collateral asset. Households can withdraw part of the rise in housing equity by increasing their borrowing secured on rising property values, and use some of the proceeds to finance extra consumption.

Empirical work by the OECD (see Box VI.1) suggests that the recent increases in house prices have contributed to boosting demand in a few countries. Over the 1996-99 period, the growth of housing wealth in excess of income growth in the United States may have contributed 0.4 percentage point to the total drop of the household saving ratio of some 2.4 percentage points. In the United Kingdom, increases in the ratio of housing wealth to disposable income over the same period could have reduced the saving ratio by some 2 percentage points.

*Changes in housing wealth have played a role in driving consumption in some countries in recent years*

## House prices and residential investment

Property prices can have important effects on residential investment through their impact on the profitability of such activity. When house prices rise above current construction costs, it will be profitable for developers to engage in the building of new housing units. Because such investment is likely to be small in the short run relative to the existing housing stock, current construction activity is unlikely to have much impact on house prices. The new units can thus be sold at the price prevailing in the secondary housing market and at a margin over costs. However, over time the cumulative addition to the housing stock will impinge on property prices, and in the long run price-cost margins will return to normal.

*Property prices can influence residential investment through their impact on the profitability of house building*

As measured by the ratio of residential property prices to the implicit residential investment deflator (which excludes land costs), price-cost margins in the housing construction industry have fluctuated markedly in several Member countries for which data are available. The annual fluctuations and cumulative changes have been particularly pronounced in some of the smaller European countries, notably in Denmark, Finland and Norway and to a lesser extent in the United Kingdom (Figure VI.3). By contrast, the three largest OECD countries have experienced only small changes in price-cost margins.

*High volatility in the price-cost margins have characterised several small countries*

For the majority of countries under review there is a fairly close contemporaneous association between the construction profitability indicator and private residential investment (Table VI.4). The correlation coefficient is strikingly high in some of the smaller European countries, even exceeding 0.8 over the 1980-99 period in the Netherlands, Denmark, Spain and Belgium. On the other hand, the correlation is weak in the United States, Japan, France and Norway, while the negative correlation observed in Germany may be attributable largely to large-scale subsidies aimed at improving housing standards in the New *Länder*, which are not taken into account in the profitability indicator.

*Price-cost margins have been closely correlated with private residential investment in some countries...*

Notwithstanding the close short-run associations in many countries, there is little formal evidence of a stable long-run relationship between the profitability of construction and private residential investment. To some extent this could result from the fact that the profitability indicator used here does not include the cost of land,<sup>10</sup> but it could also reflect the importance of other factors. For example, prices for new

*... but there is little evidence that profit margins alone can explain private residential investment in the long run*

10. Studies using better measures of price-cost discrepancies have detected more significant long-run links between profitability and investment in some countries.

Figure VI.3. Residential investment and its profitability in selected OECD countries<sup>1</sup>

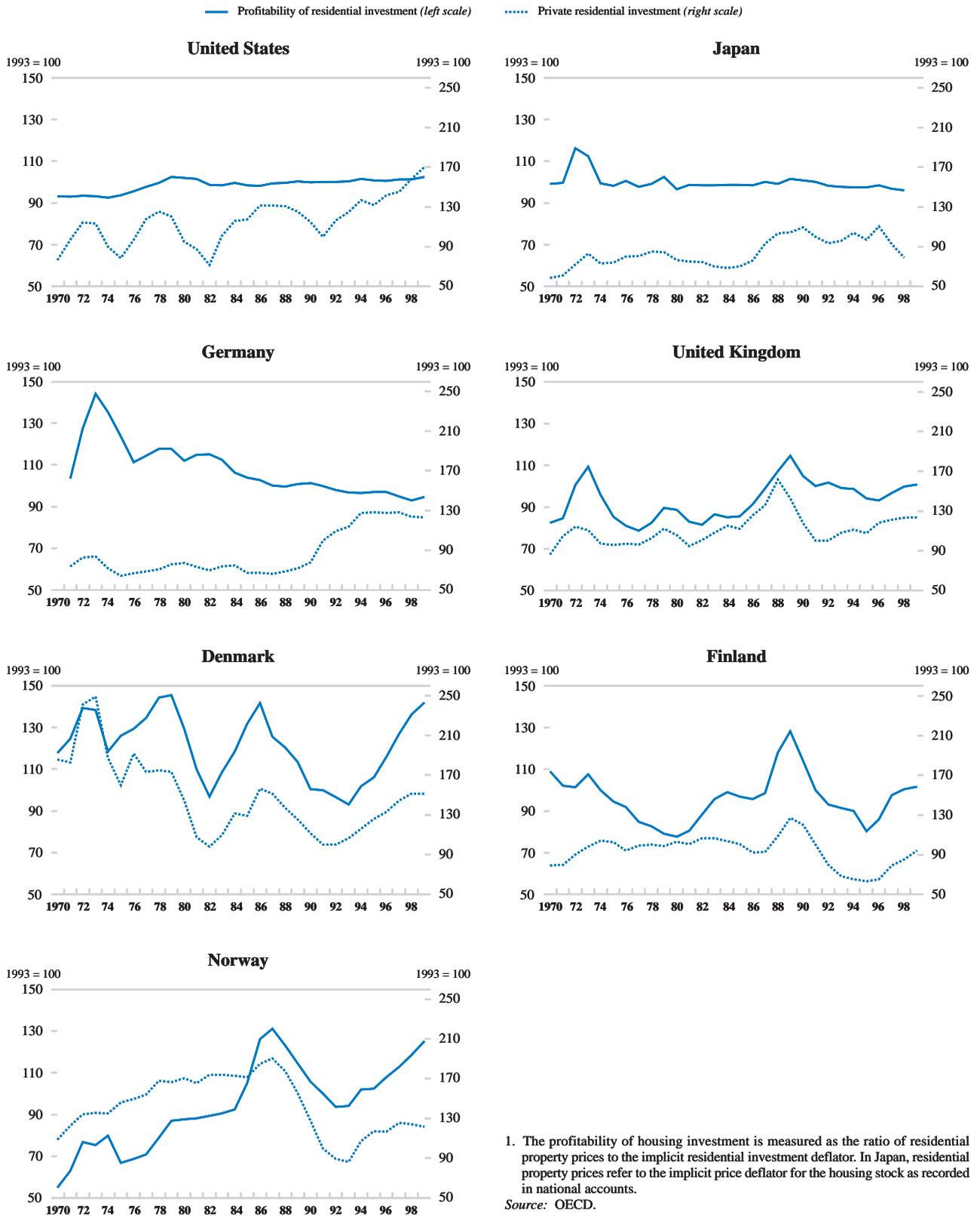


Table VI.4. Residential investment and its profitability<sup>a</sup>

Correlation coefficients, 1980 to 1999 (*: Statistically significant at 5 per cent level)	
United States	0.37
Japan	0.35
Germany	-0.71*
France	0.25
Italy	0.77*
United Kingdom	0.61*
Canada	0.66*
Australia	0.51*
Belgium	0.83*
Denmark	0.92*
Finland	0.59*
Ireland	0.43
Netherlands	0.92*
Norway	0.16
Spain	0.82*
Sweden	0.60*

a) Data for residential investment refer to the private sector. Its profitability is measured as the ratio of residential property prices to the implicit residential investment deflator (which excludes land costs).

Source: OECD.

and existing houses may differ for reasons such as segmented financing arrangements. Also, property developers may have been constrained in their investment decisions by lack of finance. Indeed, construction companies have typically been highly leveraged and thus particularly vulnerable to any changes in lending practices of financial institutions.

## Policy implications

The link between house price developments and movements in aggregate demand suggests that monitoring developments in property markets can provide a useful input to the setting of economic policy. In a number of OECD countries house prices are already regarded as important indicators of the state of the economy and demand pressures, and timely and comprehensive data on property prices are available. However, in some other countries, adequate information about real estate prices is lacking. Increased efforts would therefore be warranted to develop better data collection systems in this area.

It is also important to monitor changes in mortgage arrangements that make it easier for households to withdraw housing equity and hence to finance consumption. In the coming years, in particular in the European Union with the establishment of a single market in financial services, terms and conditions on mortgage products are likely to change further. Market forces may act to make mortgage borrowing easier in the countries where down-payment requirements are still high and repayment periods remain short. This process of convergence may thus involve a stimulus to demand in some countries by making it easier to withdraw housing equity.

*Property prices may serve as useful indicators of excess demand pressures...*

*... and to monitor changes in the opportunity for households to withdraw housing equity*

Where strong increases in property values are part of a more general pattern of excess demand in markets for goods and services, the need for a monetary policy response is clear. The more difficult situation arises when no such general pattern of excess demand is apparent. Rising property prices may give rise to concern that inflation pressures are latent, but in their absence a policy response is difficult to justify. The major risk in this circumstance is that property prices may rise to unsustainable levels, resulting in severe balance-sheet problems once a correction sets in, as occurred in a number of countries in the late 1980s and early 1990s. Strong supervision arrangements in the financial sector and high prudential standards provide the best means of guarding against this risk.

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