IV. HOUSING MARKETS, WEALTH AND THE BUSINESS CYCLE

Introduction

Housing markets are important for responses to shocks and monetary impulses

OECD economies have exhibited different degrees of resilience over the recent cyclical downturn, in the sense that some were better than others at weathering and recovering from a set of common shocks. In some measure, differences in resilience seem to be related to the performance of housing markets. In particular, house price buoyancy in some countries appears to have boosted private consumption and residential construction and thereby helped to offset weaknesses elsewhere. It appears that institutional set-ups in housing and mortgage markets play an important role not just for overall economic efficiency and real incomes but also for the propagation of shocks. Hence, structures which enhance longer-term economic performance may also lead to better short-term outcomes. Moreover, while structural reforms should be undertaken primarily for longer-term efficiency reasons, they may also have important implications for macroeconomic policy effectiveness. Thus, housing market institutions seem to influence the speed and magnitude with which monetary policy responses to shocks are transmitted through economies. This chapter aims to shed light on some of these linkages.[1]

The chapter starts with an examination of stylised facts, addressing questions such as: how closely associated are house prices and output over the cycle? What role do mortgage debt and housing wealth play in linking house prices to demand and activity? It then investigates how institutions affect the cyclical behaviour of house prices, and thus household demand, across countries. In this process special attention is paid to the characteristics of the mortgage market which may facilitate or impede the influence of housing wealth on household expenditure. The analysis thus focuses on an important aspect of the transmission mechanism of monetary policy and the overall responsiveness of the housing market to shocks. This chapter concludes with an investigation of some of the macroeconomic and structural policy factors behind house-price variability which may sometimes lead to speculative housing market bubbles, with the aim of identifying the conditions in which the benefits of housing market flexibility for macroeconomic resilience and stability are best achieved.

1 . Housing markets can also have important implications for economic resilience *via* their effect on labour mobility. However, these aspects are not examined in this paper.

The main conclusions from this work are:

Lags between house-price and output cycles differ across countries…

- Real house price movements, which have differed markedly across countries, tend to lag cyclical peaks and troughs -- but in ways that differ not only across countries but also from one cycle to another.[2]

… as do the strength and timing of wealth effects on consumption

- Feed-through from house prices to activity occurs largely through wealth channels affecting personal consumption; there are important differences in the strength of such wealth influences on consumption buoyancy, depending on the facility to take on mortgage debt and on the extent of housing equity withdrawal.

… and the cyclical behaviour of residential investment

- The behaviour of residential construction over the business cycle also shows important differences, with the volume response at turning points both stronger and more rapid in some countries than in others.

Differences in institutional features of housing and mortgage markets significantly influence the strength of wealth effects on consumption:

The institutional framework helps explain resilience…

- Mortgage market characteristics, and in particular their degree of "completeness", strengthen the transmission of housing wealth changes to buoyancy in consumption. Lower transaction costs and higher owner-occupation rates may also assist this transmission process.

… and hence monetary policy effectiveness…

- The effects of monetary policy on activity, as measured by the impact of policy-determined interest rate changes on housing market interest rates and thence to house prices and wealth, differs considerably among OECD economies This may also be related to institutional factors, such as the type of mortgage interest regime that predominates (particularly floating or fixed rate), the costs of refinancing and the extent to which the mortgage market is flexible in its response to changes in housing demand.

… but supply-side rigidities and distortions are a potential danger

- While economic resilience may be enhanced by removing mortgage market rigidities and facilitating a stronger monetary policy response via housing wealth channels, partial and/or ill-timed reforms can cause imbalances to emerge, in the form of housing price bubbles. More generally, resilience is strengthened and potential instability reduced to the extent that distortions are avoided (such as, for example, a non-neutral housing tax structure

2 . Throughout this paper, references to real house prices indicate nominal house prices deflated using the private consumption deflator.

or unnecessarily restrictive zoning regulations), that monetary policy is effective in controlling inflation, and that prudential controls are in place to ensure the solidity of financial institutions faced with variations in house prices.

House prices, housing wealth and the cycle in OECD countries: some stylised facts

House price trends and variability differ

House prices display widely different trends across countries…

Since the mid-1990s residential property prices have recorded widely differing rates of increase in real terms among OECD countries (Figure IV.1, panel A). In general, most of the countries that have registered the most significant recent run-up in real house prices have also shown a marked longer-term rising trend. Germany, Japan and Switzerland stand out as countries where real house prices have shown a decline since the mid-1990s, and their level is now not far from where it was in 1970. Neither the cross-country differences in long-term price trends nor the recent acceleration in some countries can be attributed to demographic factors.[3]

… as well as differing variability

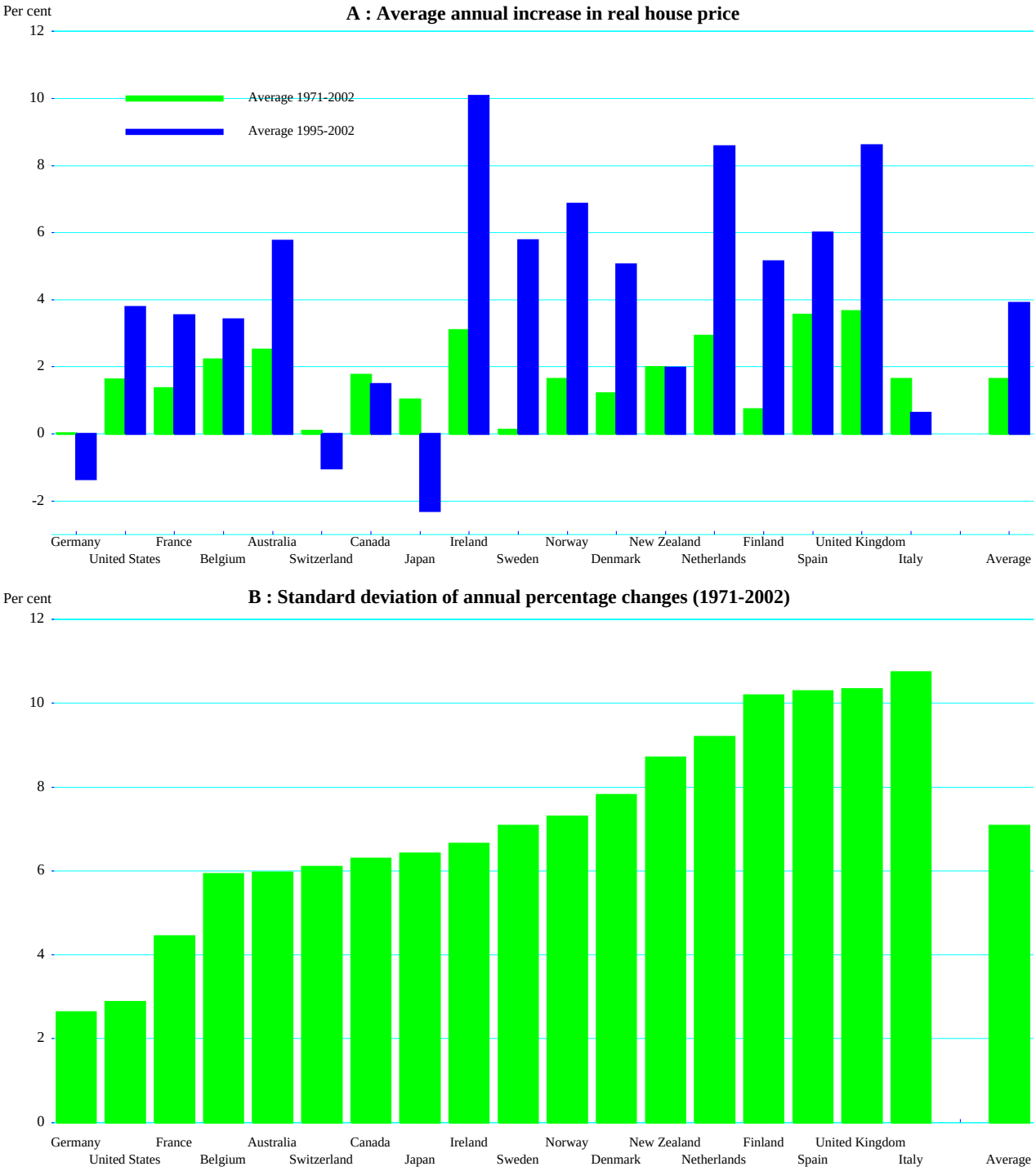
Differences in average rates of real house price growth have been accompanied by marked differences in their variability (Figure IV.1, panel B). The standard deviation of real house price changes over the whole 1970-2002 period is particularly high in some of the countries that have experienced the largest trend price increases (the Netherlands, Spain and the United Kingdom), suggesting that secular and cyclical movement may have a common root. By contrast, price variability is much lower in Germany and the United States, where, however, regional house prices tend to show greater variation than the country average.

House price movements lag the cycle…

In all countries, residential property markets tend to track the business cycle, with a tendency for real house price turning points to lag business cycle peaks and troughs. On many occasions house prices have continued to decline in real terms for a few years after output has picked up.

3 . Average population growth since 1990 has been little different or slower than in the previous ten years in most countries covered in Figure 1, the main exception being Ireland. Moreover, in virtually all of them there was a strong deceleration in the growth of the population in the 25-34 year age group, the one more likely to form new families and add to demand for housing, even though the effect of this on housing demand was probably offset by the decline in average family size. The only countries where house price movements appear to be strongly correlated with population growth are Luxembourg and New Zealand, mainly reflecting changes in net migration. Across countries, however, no correlation seems to exist between the size of the house price acceleration and the change in population growth rates between the 1980s and the 1990s.

Figure IV.1. Real house prices : average annual increase and variability



Note : House prices are deflated using the private consumption deflator.
Source : Bank for International Settlements, Quotable Value New Zealand.

Conversely, prices often continue rising during the early part of a cyclical downturn. This seems to indicate that prices in residential property markets tend to adjust to cyclical conditions more gradually than equity markets.[4]

… becoming more counter-cyclical in the recent cycle…

The lags between house prices and the business cycle differ across countries (Table IV.1). Moreover, they have differed from cycle to cycle. During the recent downturn, in several countries -- notably the United States, the United Kingdom, Australia, Ireland and Spain -- house prices not only continued to rise, but actually accelerated after the output turning point.[5]

Table IV.1. **Intensity and timing of correlations between real house prices and the business cycle**

	Timing of maximum correlation		
	Output gap contemporaneous or lagged < 1 year	**Output gap lagged 1-2 years**	**Output gap lagged 3-4 years**
Intensity of correlation			
Strong	Denmark, Finland, Ireland, United Kingdom	Spain	
Average	Japan	Canada, France, Sweden	Australia, Germany, Switzerland
Weak	New Zealand	Norway, United States	Belgium, Italy, Netherlands

Note: Correlations are between de-trended real-house price levels and the output gap. They are calculated for the period 1970-2002, based on semi-annual data. Countries are ranked according to the value of the maximum correlations and of the lags at which these are found. The intensity of correlation is indicated as strong if the maximum correlation coefficient is above .65, average if between .50 and .65, weak if below .50.

Source: OECD.

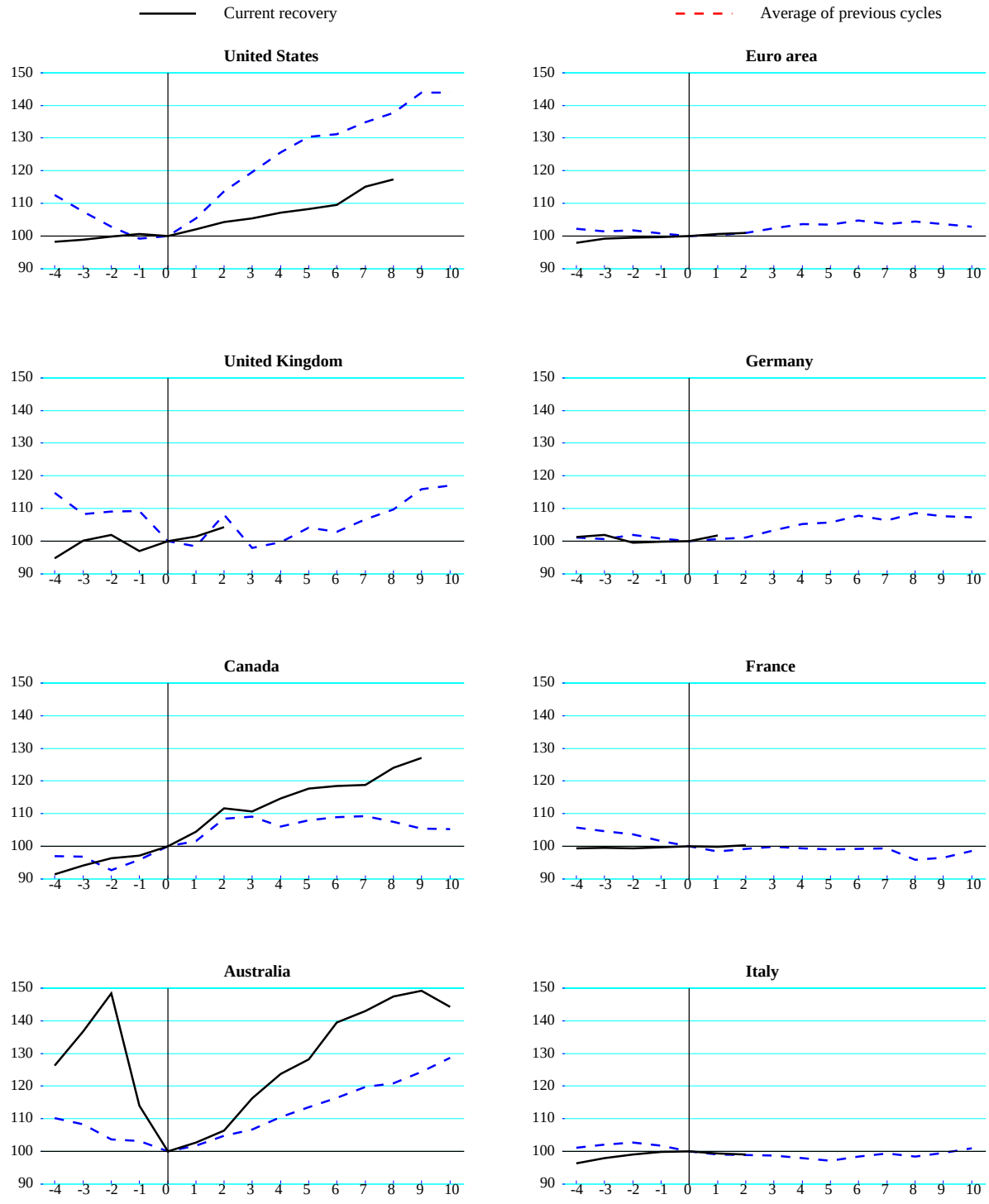
… in association with resilient housing investment

In contrast to house prices, the volume of residential investment has widely tended to turn around rather early in cyclical upswings and downturns, the major euro-area economies and the Netherlands being the main exceptions to this pattern. Again, the recent downturn seems to have been unusual in that, with the same exceptions, housing investment as well as house prices remained buoyant through the brief cyclical downswing and into the following recovery (Figure IV.2).

4 . In a recent analysis of equity and house price cycles in a group of OECD countries over the past 30 years, Borio and McGuire (2004) find that: *a)* although not all equity price peaks are followed by one in house prices, the occurrence of the former significantly increases the probability that the latter will occur; *b)* in general, house price peaks tend to follow major equity market peaks by at least one year, and on average two years; *c)* the cumulative house price decline following a peak is usually larger, the larger has been the preceding rise, and will be larger if significant financial imbalances had accumulated during the boom.

5 . See *OECD Economic Outlook,* No. 74, page 20.

Figure IV.2. The cyclical behaviour of housing investment
index, cyclical trough=100



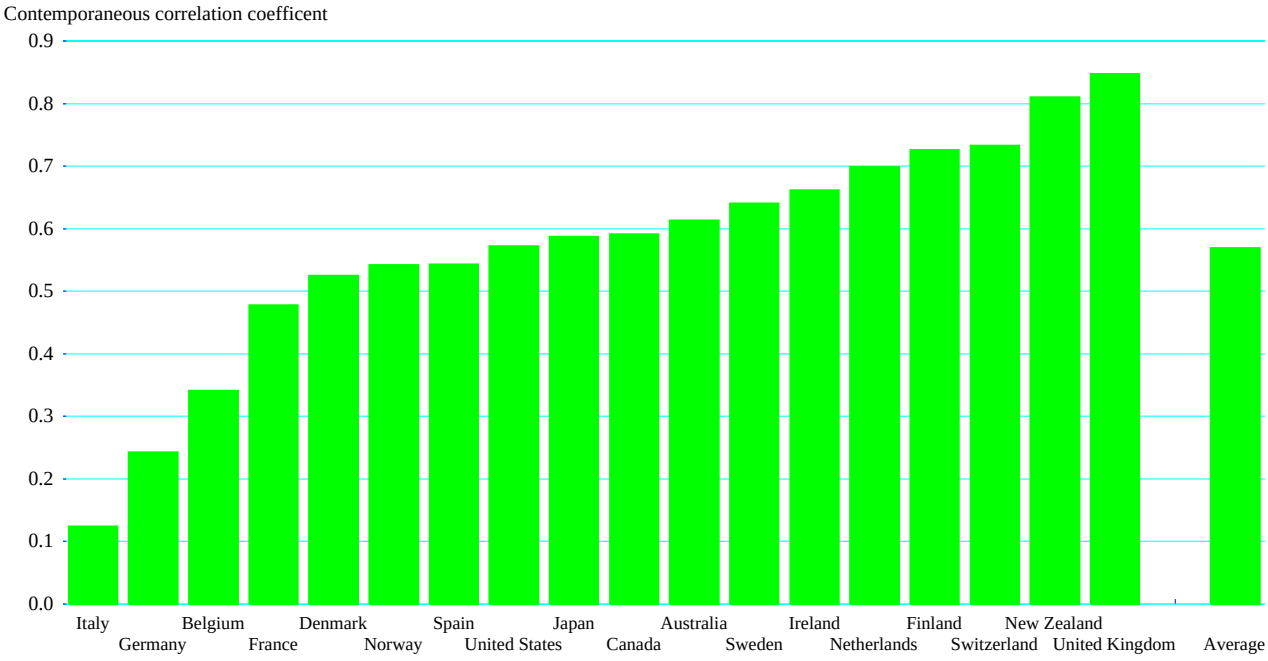
Note: The last cyclical trough is 2000Q4 for Australia, 2001Q3 for Canada, 2001Q4 for the United States and 2003Q2 for the European countries.
Source: OECD.

Links between house prices, household wealth and consumption

House prices affect consumption via wealth channels…

Changes in house prices and private consumption are correlated in most countries -- on average for all countries over the entire period the correlation of annual consumption growth with simultaneous changes in real house prices is 0.57 -- but to widely varying degrees (Figure IV.3). The channel by which house prices affect consumer behaviour would seem to run primarily via changes in the value of the household sector's housing wealth, which help determine movements in household saving ratios (Box IV.1). Indeed, OECD research confirms the existence of significant housing wealth effects on consumption in the United States, United Kingdom, Canada, the Netherlands and Australia.[6] In France, Germany and Italy, despite a rapid increase in the value of household assets since 1995, the results suggest that the consumption response to changes in wealth remains limited. The estimated long-run marginal propensity to consume out of housing wealth is in the range of between 0.05 and 0.08 for the first group of above-mentioned countries, while it is negligible in Japan and Italy and statistically insignificant in France and Germany (Table IV.2).

Figure IV.3. Correlation of private consumption growth with real house price changes



Notes: Contemporaneous correlation coefficients are calculated from annual data, 1971 to 2002. House prices are deflated using the private consumption deflator.
Source : Bank for International Settlements, Quotable Value New Zealand and OECD.

6 . A detailed description of the methodology and results of this research can be found in Catte *et al.* (2004).

Box IV.1. **Do house price increases add to net wealth?**

Households own housing assets but also consume the housing services deriving from them. Hence, for a given housing stock, when house prices rise, the resulting capital gain to the house-owner is partly or fully offset by the higher discounted value of future rents.[1] Unlike a rise in equity prices, which may reflect an increase in the economy's expected productive potential, and thus of future income, higher house prices may simply reflect increased scarcity owing to higher demand, with no net change in national wealth.

However, even if aggregate wealth is unchanged, house price increases usually affect the relative positions of specific groups of people – for example, of current home-owners *vis-à-vis* would-be home buyers. These wealth transfers can have macro-economic effects if these categories' propensities to spend differ, as they would be expected to. Furthermore, a change in the relative price of housing can induce consumers to substitute towards non-housing expenditure.

The value of housing property can also affect household expenditure by improving access to credit for liquidity-constrained households. Uncollateralized consumer credit is usually expensive, and may be simply not available to many households. Housing assets constitute the most important form of collateral available to them, also because they are less concentrated among certain segments of the population than financial assets. While an increase in house prices raises the value of collateral available to otherwise credit-constrained households, the strength of this effect on consumption will depend heavily on the extent to which mortgage markets allow households to borrow against such collateral.

1. The extent of the offset depends on the effective time horizon of the owners, that is, on whether they intend to sell their housing assets during their lifetime or pass it on to their offspring. If current wealth holders fully internalize the welfare of the future generations, so that their economic planning horizon is effectively infinite, the expected cost of future imputed rents fully offsets the value of housing assets (a conclusion that has some analogy with the Ricardian equivalence proposition on the effects of government debt).

Table IV.2. **Short-term and long-term impact of housing wealth on consumption**

Estimated short-term and long-term marginal propensities to consume out of housing wealth

	Short term	Long term
Australia	0.02	0.07
Canada	0.03	0.06
France	..	..
Germany	..	..
Italy	..	0.01
Japan	0.01	0.01
Netherlands	0.02	0.08
Spain	0.01	0.02
United Kingdom	0.08	0.07
United States	..	0.05

Note: See Catte *et al.* (2004) for the methodology.
Source: OECD.

… which differ in speed of adjustment

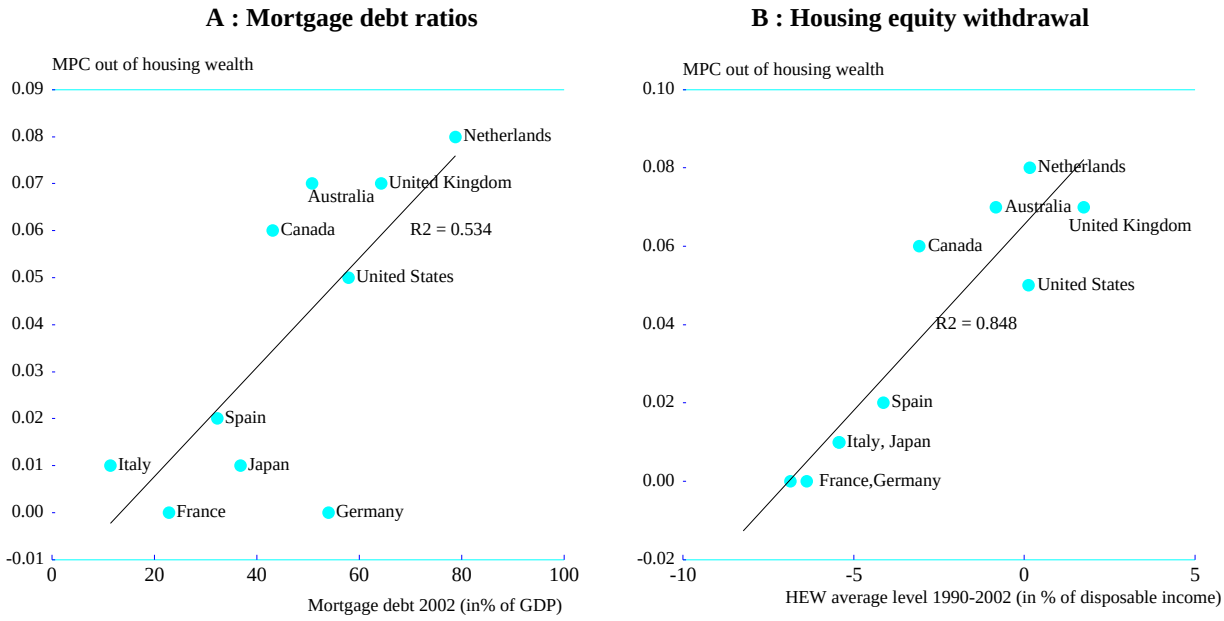
The speed of adjustment of consumption to the desired level appears to be relatively slow in general, suggesting that short-run price variations have a limited impact, but that sustained movements in housing wealth can be expected to have a noticeable effect on consumption for some time after the house-price-rise event. The United Kingdom appears to be an exception to slowness of response, insofar as changes in housing wealth have a large short-term effect on consumption behaviour which slightly "overshoots" the long-run effect.[7]

Mortgage debt and equity release have instrumental roles

The mortgage market appears to play a pivotal role…

The size of the long-run marginal propensity to consume out of housing wealth appears to be positively correlated with mortgage debt ratios across countries, suggesting that the mortgage market is pivotal in translating house price shocks into spending responses (Figure IV.4, panel A). The size of the household sector's residential mortgage debt shows large cross-country differences, with ratios to GDP currently above 60 per cent in Denmark, the

Figure IV.4. Marginal propensities to consume out of housing wealth and mortgage market indicators



Note : MPC is for marginal propensity to consume; HEW is for housing equity withdrawal.
Sources : European Mortgage Federation, United States Federal Reserve Board, Japan Statistics, United Kingdom Office for National Statistics, Bank of Canada, Bank of France, Statistics Canada, Bank of the Netherlands, Bank of Spain, European Central Bank, Reserve Bank of Australia and OECD.

7 . Econometric analysis by both the UK Treasury and the Bank of England, as well as similar work done in OECD (2004a), confirms that changes in housing wealth have a relatively large short-run impact on consumption behaviour which overshoots the longer-term effect.

Table IV.3. **Mortgage and housing market indicators**

	Residential mortgage debt in % of GDP		Loan-to-value ratios (%)		Typical loan term	Share of owner-occupied housing (%)		
	1992	2002	typical	maximum	(years)	1980[a]	1990[a]	2002[a]
Australia	24.2	50.8	65	..	25	71	72	70
Austria	..	..	60	80	20-30	52	55	56
Belgium	19.9	27.9	83	100	20	59	67	71
Canada	42.7	43.1	75	..	25	62	63	66
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	23.9[b]	17.5	..	80	20-25	60	64	70
Netherlands	40.0	78.8	90	115	30	42	45	53
New Zealand	32.6	56.2	..	..	..	..	73	65
Norway	47.9	50.2	..	80	15-20	74	78	77
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

a) Approximate dates.
b) 1994
Source: European Mortgage Federation, Mercer Oliver Wyman (2003), ECB (2003), Contact Group (2002), Noguchi and Poterba (1994) and Australian Bureau of Statistics, Reserve Bank of Australia, Bank of Canada, Canada Mortgage and Housing Corporation, Japan Statistics Bureau, Bank of Japan, Statistics New Zealand, Reserve Bank of New Zealand, UK Office for National Statistics, US Department of Housing and Urban Development, US Federal Reserve, US Mortgage Bankers Association.

Netherlands and the United Kingdom and below 25 per cent in France, Italy and Greece. These ratios have risen very substantially over the past decade, particularly where house prices have risen most (Table IV.3).

… housing equity withdrawal being the main mechanism

The influence of the housing market on consumption -- as well as the rapidity of this response -- depends on the extent to which housing wealth can be accessed and, in particular, the extent to which homeowners are able to borrow against housing wealth through mortgage equity withdrawal: *i.e.* the increment to their mortgage debt less the amount used for residential investment. Indeed, the size of housing equity withdrawal is closely correlated with the impact of housing wealth on consumption (Figure IV.4,

panel B), as well as with the level of mortgage debt across countries[8]. And if housing equity withdrawal is included as an additional explanatory variable in consumption/housing wealth equations it tends to be significantly positive, among the major economies, for the United Kingdom, Canada and the United States, which have large mortgage markets. No effect is observed for France, Italy, Germany and Japan, where mortgage markets are smaller. Where the housing equity withdrawal variable is significant, it seems to capture most of the impact of housing wealth on consumption, suggesting that such impact is channelled to a large extent through greater access to liquidity.[9] This is consistent with the fact that in the countries where housing equity withdrawal plays an important role (Australia, Canada, the Netherlands, the United Kingdom and the United States) it is also strongly correlated with house prices.[10].

Structural factors behind the differences in housing-market behaviour

Structural factors may explain differences in cyclical resilience

Two salient features emerge from the "stylized fact" analysis above. First, the relationship of house prices to the cycle appears to run not just via housing investment but through wealth and mortgage-debt channels affecting consumption. And there are important differences in the strength of these influences that may explain some of the international differences in respect of resilience to cyclical movements. Second, and on the other hand, house price movements are correlated with the output cycle, with lags that vary both from one cycle to another and between countries, and which determine the degree to which house price movements are pro- or counter-cyclical. This section examines the factors which help to determine these two phenomena and draws some policy implications from them.

The importance of mortgage institutions for the link between interest rates, house prices and consumption

Institutional factors may explain differences in wealth effects

Institutional or structural policy parameters can help explain observed cross-country differences in marginal propensities to consume out of housing wealth and the associated mortgage-market behaviour. In particular, consumption responses to changes in housing wealth, can be expected to be higher, *ceteris paribus*, in countries where:

8 . The cross-country correlation coefficient between the 1990-2002 average level of housing equity withdrawal (as a per cent of disposable income) and the average level of mortgage debt in the same period (in per cent of GDP) is 0.64.

9 . In fact, when housing equity withdrawal is included among the explanatory variables, the effect of housing wealth is no longer statistically significant (see Catte *et al.* (2004).

10 . See Catte *et al.* (2004) for more detailed cross-country analysis of housing equity withdrawal and real house prices.

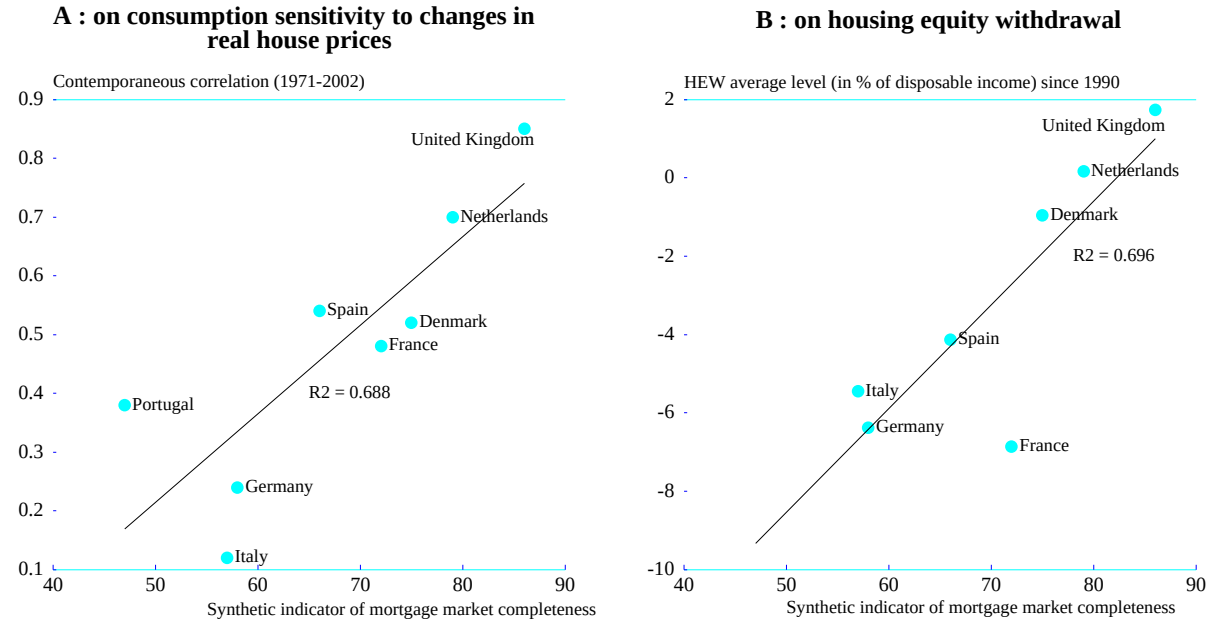
- Financial markets provide easy access to mortgage financing and to financial products that facilitate equity withdrawal.
- There are low housing transaction costs and housing wealth is exempted from capital gains taxes, both of which would encourage owners to perceive housing assets as more liquid.
- There is a high rate of owner-occupation, which implies a wider distribution of housing wealth.

Importance of mortgage market "completeness"

House price effects on consumption vary with mortgage market completeness…

The close relationship of mortgage market "completeness" with real house price/consumption correlations (Figure IV.5, panel A) and housing equity withdrawal (panel B) confirm the crucial role played by the provision of liquidity in connection with housing assets (see Table IV.4 for some of greater variety of mortgage products, to be able to serve a broader range of borrowers and to apply lower mortgage interest rate spreads. A systematic cross-country comparison along these dimensions is available only for a

Figure IV.5. Effects of mortgage market completeness



Note : HEW is for housing equity withdrawal.
The synthetic indicator of mortgage market completeness is presented in Annex Table 1 (for additional information see Mercer, Oliver, Wyman, 2003). For Portugal, the contemporaneous correlation between consumption and real house price change is calculated over the period 1989-2001, due to limited data availability.
Sources : Mercer, Oliver, Wyman (2003), United States Federal Reserve Board, Japan Statistics, United Kingdom Office for National Statistics, Bank of Canada, Bank of France, Statistics Canada, Bank of the Netherlands, Bank of Spain, European Central Bank, Reserve Bank of Australia, OECD.

Table IV.4. **Mortgage market completeness: range of mortgage products available and of borrowers served in eight European countries**

	Denmark	France	Germany	Italy	Netherlands	Portugal	Spain	United Kingdom
a) LTV ratios								
Typical	80	67	67	55	90	83	70	69
Maximum	80	100	80	80	115	90	100	110
b) Variety of mortgage products								
Rate structure								
Variable	**	**	**	**	**	**	**	**
Variable (referenced)	**	**	-	**	**	**	**	**
Discounted	-	**	-	*	-	-	**	**
Capped	**	**	*	*	**	-	*	**
Range of fixed terms								
2-5	**	**	**	**	**	*	*	**
5-10	**	**	**	**	**	*	*	*
10-20	**	**	**	*	**	-	*	*
20+	**	*	*	*	*	-	*	-
Repayment structures								
Amortising	**	**	**	**	**	**	**	**
Interest only	*	**	**	*	**	-	-	**
Flexible	*	**	-	*	**	-	*	**
Fee-free redemption [a]	**	-	-	-	-	-	-	*
Full yield maintenance fee	**	*	**	*	**	*	*	*
c) Range of borrower types and mortgage purposes								
Borrower type								
Young household (<30)	**	*	**	*	*	**	**	**
Older household (>50)	**	*	*	*	**	*	*	**
Low equity	-	**	*	-	*	*	*	**
Self-certify income	-	-	-	-	*	-	*	*
Previously bankrupt	*	-	-	-	-	-	-	*
Credit impaired	*	*	-	*	*	-	*	**
Self employed	**	*	**	**	*	**	**	**
Government sponsored	*	**	*	*	*	**	*	*
Purpose of loan								
Second mortgage	**	*	**	**	**	**	**	**
Overseas holiday homes	**	**	*	**	*	-	-	**
Rental	**	**	**	**	**	**	**	**
Equity release	**	-	*	**	**	-	*	**
Shared ownership	**	*	*	*	*	**	-	**
Mortgage market completeness index [b]	75	72	58	57	79	47	66	86

Note: Readily available means that products are actively marketed with high public awareness; Limited availability means that only a small subset of lenders provide this product, often with additional conditions; No availability means that no lenders surveyed offered the product. See Mercer Oliver Wyman (2003) for further details on the sample and criteria of the survey.

Key: ** Readily available * Limited availability - No availability

a) On fixed-rate products only.

b) See Mercer Oliver Wyman (2003) for details on the calculation of the index.

Source: Mercer Oliver Wyman (2003).

group of eight European countries.[11] Among these, Denmark, the Netherlands and the United Kingdom appear to have the most complete mortgage markets in terms of the range of products offered, such as second mortgages and equity release products, as well as a choice between alternative interest rate adjustment and repayment structures. They are also able to cover a broader range of potential borrowers, including for example younger or older households, and borrowers unable to certify their income. Some of these product or borrower coverage options exist also in the traditionally less sophisticated markets such as Italy and Germany, but they are less common, having been introduced more recently.

… while mortgage type and conditions matter

The composition of mortgages as between fixed-rate and variable-rate is potentially important here, since mortgage rates can react differently depending on what is happening to the yield curve.[12] The short-term interest rate has a stronger impact in countries where variable-rate mortgages prevail, while the long-term rate is relevant in those with mostly fixed-rate mortgages. In the latter case it may be costly to refinance. In France, for example, fixed rate mortgages have typically been available for a term of 15 years, but refinancing penalties amount to up to six months interest or 3 per cent of the balance that is being prepaid. That makes refinancing unattractive when interest rate declines are small. In Germany, rates on mortgages are typically fixed for ten years, and it is very difficult to refinance. The Italian market is a hybrid of fixed and floating rates. By contrast, in Denmark and the United States, where most loans are also fixed-rate, penalty-free prepayment options are common, as mortgage lending is largely funded through callable mortgage-backed securities. In the United Kingdom, mortgage rates are usually variable and interest rate changes feed through rapidly to changes in monthly service payments.

Differences in interest rate spreads have subsided…

On the other hand, cross-country differences in mortgage rate spreads over market rates for the relevant maturity, which are proximate indicators of efficiency, are not large, having narrowed significantly over the past ten years. Once fees are taken into account and adjustment is made for credit risk and for the value of prepayment options, spreads vary within a relatively narrow range (70-135 basis points) among the countries considered in Figure IV.5.[13] The remaining differences reflect mostly product structure and

11 . See Mercer Oliver Wyman (2003). The countries covered are: Denmark, France, Germany, Italy, the Netherlands, Portugal, Spain and the United Kingdom.

12 . Not surprisingly, in countries with mostly fixed-rate mortgages the pass-through to rates on new loans depends on whether the change in short rates is accompanied by a shift in long rates (de Bondt *et al.*, 2003).

13 . An earlier study by Diamond and Lea (1992) covering four of the eight countries considered in the Mercer Oliver Wyman (2003) study (Denmark, France, Germany and the United Kingdom) found adjusted spreads ranging between 120 and 276 basis points.

operating and funding costs, plus some distorting influences such as cross-subsidisation with other products and the presence in some countries of government-owned lenders with low cost of capital. Spreads are highest in Italy, which also has the highest operating costs. In Denmark and Germany, the existence of well-developed markets for mortgage-backed securities has contributed to contain funding costs for fixed-rate loans.

… but mortgage terms and innovation differ…

Two key indicators of mortgage market ability to provide access to financing are typical or maximum loan-to-value (LTV) ratios and mortgage terms (Table IV.3). Not surprisingly, across countries both are correlated with the size of mortgage debt.[14] In fact, 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. Even if housing loans are taken solely for house purchase, this adds to the household sector's liquidity. Maximum LTV ratios above 100 per cent exist in the Netherlands and the United Kingdom, although they are typically lower. Typical LTV ratios are particularly low in Italy. Equity withdrawal is further facilitated where mortgage products specifically designed for this purpose are widely marketed, as is the case particularly in Australia, the Netherlands, the United Kingdom and the United States, but also in several Nordic countries. By contrast, such products are either not offered or not widely marketed in France, Belgium and in Southern European countries.

… partly reflecting legal and regulatory systems

The above differences are likely to reflect the lender's perception of the risk connected to mortgage loans. An important element in this regard is the legal protection of collateral. The administrative costs and the time required to realise the collateral's value in the event of default differs considerably across countries (Table IV.5). In Belgium, France, Portugal and especially Italy the length of legal procedures is probably a key factor discouraging banks from making larger loans relative to the value of the property and from lending to higher-risk borrowers. In a number of OECD countries there are also regulatory ceilings to LTV ratios, and in most of them a loan's LTV ratio influences its weighting for the purpose of capital adequacy requirements, so that high-LTV loans are more costly to fund. Regulatory limits are particularly binding in Germany, being combined with a mandatory loan valuation method that implies an additional discount of 20 to 25 per cent relative to market prices.[15]

14 . Among the countries reported in Table IV.3, the correlation coefficient of mortgage ratios with typical LTV ratios is 0.48; with typical mortgage terms it is 0.74.

15 . See Contact Group on Asset Prices (2002). In Germany, loans with LTV ratios above the 60 per cent ceiling are also ineligible for inclusion in mortgage-backed securities (or can be included, up to an LTV of 80 per cent, but the portion of the loan above 60 per cent is not recognised for collateral purposes).

Table IV.5. **Time required and cost of mortgage enforcement procedures**

	Usual time required[a] (months)	Administrative costs[b] (in per cent)
Austria	6	..
Belgium	18	18.70
Denmark	6	..
Finland	2-3	2.5
France	15-25	7
Germany	12	4.2
Greece	3	16
Ireland	11-14	8.6-10.6
Italy	60-84	..
Netherlands	6	3
Portugal	18-30	8
Spain	7-9	17
Sweden	4-6	5
United Kingdom	8-12	2.6-7
United States	8.4	11.5

a) Total time from the writ of execution (in the countries where the mortgage must be given executory power by a court) to the distribution of the proceeds to creditors.

b) Costs usually include both fixed and variable components. Here they are calculated for a property value of € 100 000. They do not include lost interest during the procedure.

Sources: For EU countries: EMF (2002); for the United States: Department of Housing and Urban Development (1996).

Disparities in mortgage market efficiency are still significant

Though mortgage markets have been evolving rapidly in most OECD countries, including those where they were least developed, differences are still considerable as regards the range of potential borrowers reached and the variety of needs covered. If mortgage debt ratios can be taken as a summary indicator of market size, their dispersion has actually increased from 1992 to 2002. Thus, it seems possible to distinguish between a group of countries where mortgage markets provide ample access to liquidity (Australia, Canada, the Netherlands, the United Kingdom, the United States and Nordic countries) and others where this is still limited (particularly Italy and France). The picture is more mixed for Germany -- where basic mortgages with long repayment terms are very affordable but product range is limited and LTV ratios are low -- and for Spain, where the market seems to have been developing very rapidly.

Influence of owner-occupied housing

Owner-occupation rates reflect a variety of structural factors

Potentially amplifying the importance of mortgage-market structure is the extent of owner occupation. Housing tenancy structures differ considerably across OECD countries. Broadly speaking, the share of owner-occupied housing is very high in Southern European countries, relatively low in Austria, Germany, the Netherlands and in some Nordic countries and around two-thirds in most other countries (Table IV.3). In part, these differences reflect tax incentives (discussed below). They also reflect differences in access to mortgage financing. Access to mortgage markets seems to allow households to achieve home-ownership earlier: in the

Netherlands and in the United Kingdom households in the 25-29 age group are more likely to be homeowners, relative to the national average, than in France, Germany, Italy or Spain. In practice, however, some of the countries with the highest owner-occupation rates -- such as Italy and Spain -- are among those that have, or had until recently, the least developed mortgage markets. This suggests that other mechanisms for providing access to home-ownership are available in these countries, like for example inter-generational wealth transfers. Thus, while owner-occupation may be a necessary condition for a housing wealth channel to open up, it is not a sufficient one, and the cross-country correspondence between owner-occupation and the sensitivity of consumption to real house prices is weak.

Housing transaction costs and the taxation of housing capital gains

Transaction costs could affect house-price/ consumption links…

Housing transaction costs also differ considerably across countries. Taxes, such as stamp duties are one component.[16] In addition, the fees to be paid to intermediaries can be set directly by regulations or be influenced by regulations on entry into the market for real estate services. Estimates of housing transaction costs are available from several sources, but are often not comparable and cover only a limited number of countries. Data from the Danish Ministry of Business, shown in Figure IV.6, indicate that such costs are generally higher in continental European countries than in Nordic countries. Data from other sources indicate that transaction costs are among the lowest in the United Kingdom.[17] The connection between housing transaction costs and the strength of the house-price/consumption correlation is difficult to demonstrate from this small sample. But the presumption is that higher costs operate to impede the housing sector/consumption transmission mechanism by making housing assets less liquid.

… as may capital gains taxation

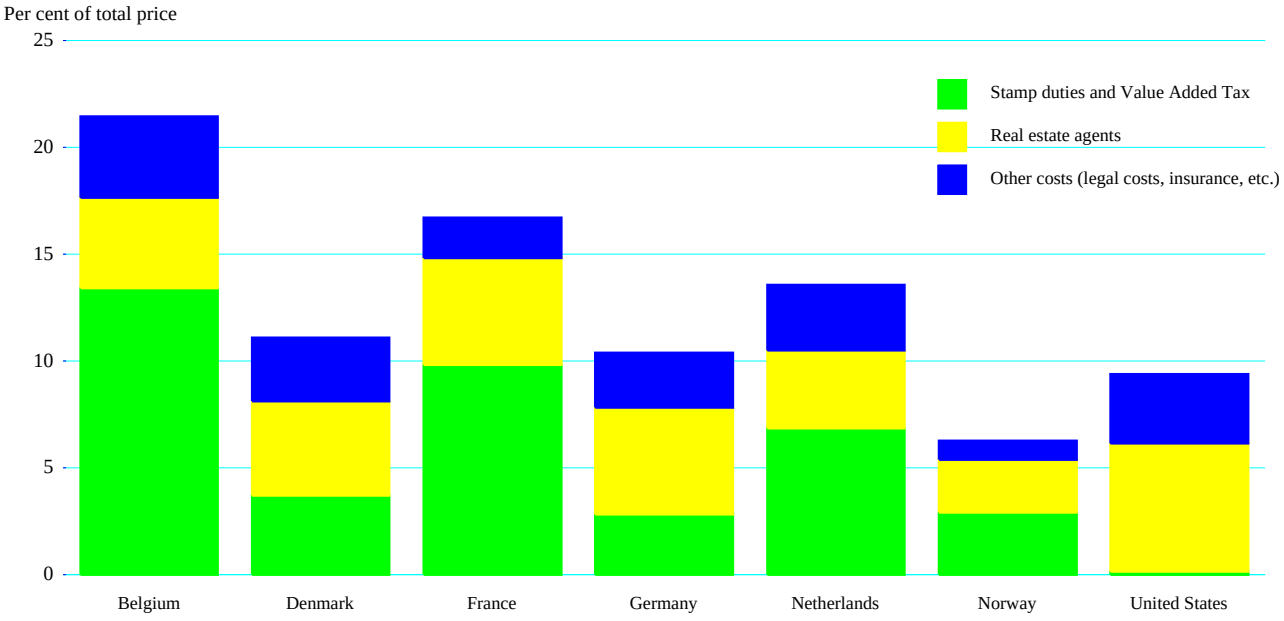
The taxation of capital gains on housing assets can be seen as having similar effects to transaction costs if the tax is levied when the gains are realised, as is usually the case. However, while most OECD countries apply capital gains taxes to residential property, a majority exempt owner-occupied dwellings that are the owner's main residence.[18] In the few countries where

16 . See Catte *et al.* (2004) for cross-country comparison of the taxation of residential property.

17 . For example, MacLennan *et al.* (1999) present 1993 data from Woolwich Building Society according to which transaction costs are very high in France and Spain; lower, but still substantial, in Germany, Italy and the United States; and much lower in the United Kingdom. However, they are not fully comparable with the data presented in Figure IV.6, both for the definitions used and the time to which they refer. Data published in *The Economist*, 3 September 1998 (referring to non-tax transaction costs only) yield a broadly similar ranking of countries.

18 . In some countries, such as Austria, Belgium, Finland and Germany, this exemption has been available only if the property is held for a minimum number of years (*e.g.* five to ten years), a provision that is intended to encourage long-term, non-speculative investment in housing.

Figure IV.6. Housing transaction costs
Transaction costs for sales of medium sized houses



Source : Denmark, Ministry of Business, 'Boligrapport' 1997.

gains are taxed but no exemption exists for principal owners, such as Norway, Sweden and Austria, this tax may be perceived as a significant additional transaction cost.[19]

The determinants of house price variability

The effects of monetary policy on house prices differ across countries

The implications of the above for the transmission of monetary policy are of particular interest. Changes in policy-determined interest rates can influence household expenditure both through "income effects" on borrowers, operating *via* changes in interest payments on outstanding housing loans, and through "wealth effects", which arise from associated movements in real house prices and hence from changes in housing equity. The "wealth channel" in this case would involve an initial link in which interest rates impact on real house prices, as changes in the relative cost of housing services lead to shifts in demand for housing. House prices do, indeed, appear to be affected by interest rate changes for individual countries.[20] However, the statistical relationship between interest rates and

19 . In Spain and Portugal, capital gains on housing are exempt from the tax if the proceeds are reinvested (see Catte *et al.*, 2004).

20 . Borio and McGuire (2004), find that interest rate movements can affect the relationship between house prices and the business cycle. The house price downturn in response to output cycles tends to be delayed

house price movements that is evident for individual countries is widely differing in speed and strength.[21] It is probable *a priori* that such differences operate through the same mortgage-market channels that determine the strength of housing wealth effects on spending, such as the costs of refinancing and the flexibility of the mortgage market in response to changes in housing demand. But cross-country variations in the link between monetary policy and house prices may also reflect such factors as differences in the elasticity of housing supply, inflation expectations and housing tax regimes.

House price variability may also reflect structural rigidities…

While the transmission of monetary policy impulses to aggregate demand via housing wealth and income effects may be a factor in economic resilience, in some cases the variability of house prices may also be a function of rigidities or distortions in the housing market. The variability of house prices is likely to be higher if the supply of housing is price inelastic (Figure IV.7, panel D) and if the demand for housing is subject to large shocks. The housing stock is given in the short run, while its long-run elasticity with respect to relative price changes is likely to depend mainly on the natural or policy-induced scarcity of urban land. For example, several studies have found that in the United Kingdom cumbersome local zoning regulations and a slow authorisation process are among the reasons for the rigidity of housing supply, and an important factor underlying both the trend rise of house prices in that country and their high variability.[22] Similar factors affect house price dynamics in Luxembourg, the Netherlands and Spain (OECD, 2003a, 2003b and 2004b).

… or inflation shocks, which may trigger speculative behaviour…

The literature on the factors affecting house prices has emphasised that one important determinant of house price variation is inflation expectations, changes in which affect the relative returns on alternative investments. Indeed, across countries house price variability appears to be correlated with inflation variability (Figure IV.7, panel A), although the relevance of this result is much reduced in a low-inflation environment.[23] However, the scope for speculative behaviour is increased by several features of housing and

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and the subsequent price decline to be smaller when interest rates rise less than usual or decline after an equity market peak.

21 . Tsatsaronis and Zhu (2004) find that the impact of interest rates on house prices is both stronger and more rapid in countries with more developed mortgage markets (Australia, Ireland, the Netherlands, the United Kingdom and the United States, as well as Nordic countries and Japan) as compared with most continental European countries. See also Sutton (2002).

22 . See OECD (2004a), Barker (2003) and Bramley (1993).

23 . These variabilities are calculated over a relatively long period (1970-2002) so that the results reflect to a large extent the past history of macroeconomic instability in a number of countries.

Figure IV.7. Real house price variability and selected explanatory variables

Note : In panel B, the tax wedge is defined as the difference between the after-tax and the pre-tax real interest rate on mortgage loans. It also incorporates the effect of property taxes. Thus, a low or negative tax wedge indicates a more favorable tax treatment of mortgage interest.
Sources : Bank for International Settlements, Quotable Value New Zealand, the Economist, Swank, Kakes and Tieman (2002), Van den Noord (2004) and OECD.

mortgage markets which have been characterised as favouring economic resilience above. For example, mortgage markets characterised by high loan-to-value ratios make it easier for investors to take leveraged positions, while low transaction costs and the exemption of housing assets from capital gains taxation could increase the expected net profits from speculative housing investments.

… and be exacerbated by tax wedges on mortgage interest

Among the structural factors that have been identified as a potential source of house price variability, negative tax wedges resulting from the tax deductibility of mortgage interest appear to be correlated with house price variability, at least among European Union countries (Figure IV.7, panel B).[24] This would seem to confirm that tax incentives can make some housing markets more prone to cycles by lowering the cost of leveraging the financing of housing investment. Some correlation exists also between house price variability and a low level of housing transaction costs, although reliable data on these are available for too few countries for the relationship to be regarded as robust (Figure IV.7, panel C).[25]

Housing market efficiency and resilience to shocks

Supply-side efficiency reinforces resilience…

In sum, the benefits to resilience from liberalising housing and mortgage markets and reducing housing transaction costs would appear to be enhanced where supply-side conditions are favourable. From the above evidence it would seem that policies which create a low and stable inflation environment, which enhance the efficiency of the housing market via a neutral tax structure, and which encourage housing supply responsiveness by avoiding unnecessarily restrictive zoning regulations can act to ensure that asset price movements in the housing market are based on solid fundamentals.

… but partial and ill-phased reforms can create instability…

While removing regulatory and tax-induced distortions to housing and mortgage markets can be expected to yield both long-run benefits in terms of efficient resource allocation and greater resilience to shocks, the sequencing of structural reforms is also important. Inappropriate sequencing can generate macroeconomic instability in the short run and lead to the accumulation of imbalances, whose subsequent re-absorption may require a lengthy and costly adjustment process. For example, during the 1980s in several Nordic countries financial market deregulation took place in a context still characterised by large tax subsidies to mortgage borrowing and inadequate prudential supervision. This gave rise to a pronounced house price cycle fuelled by over-lending, and eventually led to costly bank bailouts and a protracted period of balance sheet consolidation in both the

24 . The tax wedges shown on the figure also take into account property taxes on housing (van den Noord, 2004).

25 . Transaction costs have two effects of opposite sign: on the one hand they tend to make housing demand price inelastic, which tends to exacerbate house price movements; on the other hand, they also make demand less reactive to price expectations, thus reducing the scope for speculative bubbles.

household and the financial sector.

… and speculative behaviour needs to be guarded against

Even in the absence of ill-timed policy reforms, the possibility that speculative bubbles may emerge in the housing market cannot be ruled out and needs to be guarded against. Some of the special characteristics of the housing market that set it apart from other asset markets –– a prevalence of small investors; the absence of derivatives and short-selling; the heterogeneity and indivisibility of the traded asset, and low transaction frequency –- tend to create some degree of inertia in price movements and to exacerbate informational problems. They may also make it easier for prices to be driven by expectations that depart from fundamentals. Several studies have documented a tendency of house price expectations to be of the extrapolative kind.[26] For these reasons, supervisory authorities must continue to ensure that the prudential framework is also resilient, by discouraging excessive risk-taking on the part of lenders and monitoring the possible emergence of financial fragilities in balance sheets in situations where asset prices may be subject to large corrections.

26 . Most of the empirical literature on housing market efficiency (see Cho, 1996, for a survey) finds that both house prices and excess returns exhibit positive serial correlation in the short run. Consistent with this, Muellbauer and Murphy (1997) find that, for the United Kingdom, lagged house price changes are a significant explanatory variable for the current level of house prices. And Case and Shiller (2003) report the results of surveys conducted in 1988 and in 2003 among home buyers in four US cities, which seem to indicate that large expected long-term capital gains and low perceived risk play an important role in decisions to buy a house at times of rising prices.

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