A reconceptualisation of the housing cycle based on household upgrading desires

A Re-Conceptualisation of the Housing Cycle based on Household Upgrading Desires

Abstract

Purpose

The paper sets out a conceptualisation of the housing cycle centring on households' desire to upgrade their housing consumption.

Design/methodology/approach

The paper begins by studying house price trends and cycles in OECD countries since 2000 to identify housing cycle patterns. It then assesses existing theories partly in relation to these patterns. It then proposes a new conceptualisation of the housing cycle.

Findings

The paper finds the central role of supply lags in housing cycles is not warranted. Instead, a demand cycle generated by upgrading desires better explains an initial boom followed by a slow recovery.

Originality

The paper challenges existing orthodoxy on housing cycle dynamics and proposes an alternative perspective.

Key Words

Housing Cycles; House Prices; Supply Lags: Upgrading; Owner Occupation; OECD countries

Introduction

Cycles are a quintessential constituent of housing market dynamics. In many ways they dominate decision making in the market, influencing the timing of household and investor decisions to buy/sell and house builders' pace of construction. Housing/building cycles have been well documented through history including by Hoyt (1933) for the United States and Thomas (1972) in the UK/United States. Nevertheless, housing cycles are more than just construction cycles and there is no consensus on the explanation of the causes and patterns of the phenomena. A range of authors have sought explanations of them. They are linked to economic cycles but there are wider factors at work that influence them.

This paper seeks to deepen our understanding of why and how they occur. It is argued that a key explanatory factor is the shape of housing cycles and that it is crucial to the basis for the reappraisal. For this reason, the paper begins by looking at the international empirical evidence on national house price cycles, particularly the pattern of the 2000s boom, bust and subsequent recovery. In the light of this evidence the paper critically reviews types of existing models. It then sets out a new conceptualisation that centres on the desires of households to upgrade their housing consumption.

International Empirical Evidence on House Price Cycles

Statistics published by OECD on real house prices over time in different countries since the millennium have shown a degree of variation. For many countries the early part of the 2000s saw real house prices rise substantially with worldwide economic growth. These countries splinter into two groups. For one group the peak of real house prices in the 2000s was 2007/08 around the time of the global financial crisis (GFC) and associated recession. These countries include many of the largest economies such as the United States, UK, France, Italy and Spain as shown in Figure 1.

The recovery in real prices following this recession for these countries is slow and subdued. In France real prices recover briefly in 2011 but it is a false dawn and they are still below their 2007 level in 2019. This muted recovery is seen across all these countries: the UK has to wait until 2017 for real prices to recover, while for Denmark, the United States and Netherlands this point is not reached until 2020. By 2021 real house prices in Spain, Ireland and Italy had still not returned to their 2007 level.

The other group of countries that also saw real house price inflation accelerate in the first part of the 2000s experienced only a modest check following the GFC, then saw it

continue consistently through the next decade. Countries in this group include Australia (pause in 2011-12), Belgium (pause in 2009), Canada (pause in 2009), New Zealand (pause in 2009), Norway (pause in 2008), and South Africa (pause in 2009). Other than a brief pause in positive real house price inflation in these countries there is no noticeable cycle in trends over twenty years or more.

In addition, there are another set of countries comprising Austria (2004), Finland (pauses 2001, 2014-2015), Switzerland (pauses 1998-2000, 2002), Chile, S Korea (pauses 1999, 2013) that experience modest real increases through the decade after the millennium and the next.

There are outliers to the upward trends in the first decade of the millennium. In Germany and Israel real prices stayed more or less stable through the 2000s and began to rise at the beginning of the next decade, rising substantially through that decade. Japan experienced falling real house prices through the 2000s until 2012 after which there was a modest recovery for the rest of that decade. The reasons for these differences lie partly in the weak economic performance of Japan over this period (Moriizumi and Naoi, 2012), while for Germany major contributors were the reunification of the country and a declining population (Blaseio and Jones, 2019).

These patterns suggest that there are trans-national factors at play but also that there were individual national influences. Country factors influence the rate of real price growth and the amplitude of a cycle, notably via the national business cycle and interest rates. It seems for example that in countries where the banks suffered severely from the GFC and associated recession that the fall in house prices was more pronounced. On the other hand relatively shallow macroeconomic downturns in many countries had little impact on real house prices. The relatively slow general growth in real house prices in the decade or so since 2008 can also reflect slow global economic growth associated with fiscal austerity policies.

Of course, there is more to the pattern of real house prices than simply the business cycle. Adams and Fuss (2010) argue that a rise in real house prices can normally be partly attributed to a period of (initially) relatively low interest rates, and be associated with ease of mortgage finance, together with a growth in real incomes. The increasing availability of mortgage finance often coincides with deregulation of banking systems and increased competition between banks. The upswing in prices from the millennium was associated with the introduction of more flexible mortgage products across many countries, allowing more relaxed loan to value ratios and longer repayment terms

(Scanlon and Whitehead, 2004). It was also enabled by banks generating wholesale funding by issuing mortgage-backed bonds to international investors. This development created the platform for the expansion of mortgage finance (Jones, 2012).

National housing market trends can also be attributed to and be shaped by long term factors (eg Germany as noted above). House price levels over time are logically influenced by the supply response which in turn is a function of the land use planning constraints and the economics of the house building industry. Barker (2003, 2004) has highlighted the importance of restraints in the UK relative to other countries.

Ball et al (2010) also note that housing supply price elasticities are low in the UK compared to the USA and Australia but still weak in all three countries. It is widely accepted that the housing market is not efficient, not just in the UK. In a standard economic model a market shock that increases house prices would lead to a rise in construction output until excess profits are eliminated but this does not happen because supply elasticities are not large enough (Meen, 2000). In fact, Meen (2006) argues that elasticities have fallen since the early 1990s in England and contributed to rising house prices since then.

However, there is not an equivalent or consistent relationship between new housing supply flows and real house price changes. The house price boom in Spain of the 2000s was partnered with a record construction boom while in the UK and the US there was only a modest expansion of house building (Jones and Richardson, 2014; Taltavul, 2012). Yet in all three countries the GFC wrought a dramatic collapse in new private house building.

In fact, in the UK all recessions have been associated with a collapse in private house building. Private house building dipped in the 1991-92 recession (bottoms 1992-93 and takes to 2002-03 to recover the level) and in 2007-8 (bottoms in 2009-10) (ONS, 2023). Leamer (2007) notes a similar phenomenon in the United States. There are a number of potential reasons. Housing developers will have internal financial problems stemming from an overhang of new housing unsold with demand falling away. In turn this leads to cash flow problems accentuated by the high asset values of land bought in the boom that had to be written down in their financial accounts. In addition, banks are no longer able or willing in the short term to fund new development.

Models of Housing Market Cycles

This review of housing market time series has emphasised demand influences but also noted the impact of downturns on supply. The important role of demand has been accepted for decades, for example initially through the estimates of income elasticities as far back as the 1960s (eg Muth, 1960). However, models of housing cycles often centre on time lags in the development process having a key causal role on their existence. These lags are an essential core to the hugely influential four sector model developed by Di Pasquale and Wheaton (1994). In this model rises (falls) in housing demand associated say with economic growth/decline lead to an increase (decrease) in price because new supply cannot respond immediately. These time lags arise from simply the necessary construction periods. Speculative builders are seen as inherently conservative because it is a risky business, and so respond to demand rather than anticipate it. There may also be supply constraints on new development such as planning processes and land constraints.

This Di Pasquale and Wheaton (DPW) model is a comparative static model with no time and although the housing market is dominated by the existing housing stock the internal adjustment dynamic of the model focuses on new housing. There are many other implicit unrealistic assumptions about the nature of the housing market as identified in the studies of low supply elasticties noted above. Indeed, Meen et al (2016) find that increases in housebuilding in the UK would need to increase well beyond what has been achieved in history to have an impact on house prices.
Nevertheless, the role of time lags as the kernel of the model implies that as building houses have very short development periods on site then cycles are relatively short, less than a year. From this perspective housing cycles would seem to be less than 4 or 5 years, indeed potentially much less. This is especially true as house builders can speed up or slow down building on estates depending on demand (Adams and Leishman, 2009).

These outcomes do not chime with the trends in real house prices presented earlier or the empirical studies of elasticities. One reason is that the DPW model dynamics relate only to new housing and the new housing market is a very small proportion of the housing market that is dominated by second hand homes. A second reason is that falls in house building noted earlier in recessions did not bring a fast bounce back in house prices.

The important role of second-hand housing is embedded in the 'honeycomb' model of Janssen et al (1995). The model distinguishes between primary (new) and secondary

sectors of the housing market. It also sees the price of housing linked to the level of transactions. In this model the housing cycle, including prices and transactions, is framed by the business cycle shaping demand. Nevertheless, it is also a comparative static model in which the two sectors operate independently, and time lags apply to the primary new housing sector. House prices are calculated as the average for the whole market, but price changes are driven by the smaller new market sector including the influence of time lags.

The model can be seen as a development on the DPW model by introducing two sectors and the role of transactions, but it has a number of theoretical limitations. It assumes that the number of transactions in the secondary market does not influence prices because supply and demand balance each other out. The interaction between the primary and secondary market is ignored.

The empirical analysis of the paper by Janssen et al (1995) suggests a cycle of nine or ten years. It finds that it is more important to consider changes in transactions volume than it is to investigate changes in prices. The paper also concludes that the determinants of housing market volume are more important than time lags.

Marzano et al (2023) apply the 'honeycomb' model to explain patterns of house prices in Italy. The statistical analysis demonstrates that the framework is subject to considerable interpretation and judgement but there are clear links with the economic cycle. Although the paper is billed as an application of the 'honeycomb' model it does not incorporate the role of new housing and associated time lags. The authors identify three modern cycles, two of twelve years and one of twenty. The research identifies the central role of the business cycle in these patterns while ignoring the influence of supply constraints.

The authors also demonstrate how transactions and house price growth vary at different points in the cycles. In this respect the research also shows the limitations of the 'honeycomb' model with inconsistencies in the relationship between transactions and price changes between cycles. There is also no clear explanation of the links between price movements and transaction changes. There are a number of studies that have examined the statistical relationship between transactions and house prices. In general transactions activity is more volatile than that of house prices although there is not a consistent empirical finding on the relative timing within a cycle (see Tsai, 2014 and 2019, for example). Meen (2000) argues that transactions are a forward indicator of prices following American evidence.

There are established theories that offer explanations of the reasons for drops in transactions activity in a price downturn. First, Stein (1995) argues that a price drop in a downturn reduces the capacity to raise a deposit for existing owners to move. It thereby reduces transaction activity. Second, Genesove and Mayer (2001) argue that sellers have a risk aversion attitude during a downturn. Rather than selling at a low price relative to what was previously applicable they choose to wait for an upturn. The result again is decreased transactions volume.

While these models offer some insight their perspective on a housing cycle is incomplete, focusing on reasons for variations in transactions, and the downturn. Both theories presume that house prices fall in nominal terms rather just real terms. Neither explain the impact of such decisions through a complete cycle nor the internal price dynamics.

Discussion

This review finds that while real estate models based on supply lags have held considerable academic influence, including extensive references in textbooks (see Grover and Grover, 2013) the empirical evidence does not support them. On the other hand there is a clear relationship between business cycles, housing demand, price changes and transactions activity. What is not so clear is the internal dynamics between these components, and so far models examining these relationships are partial.

Furthermore, even the concept of a housing cycle is clouded. The evidence presented based on OECD data above shows at best the occurrence of cycles only in some countries over the period of study of more than twenty years. This data and the research of Marzano et al (2023) suggest that housing cycles are long term phenomena but with a blurred definition, subject to interpretation. `To emphasise this point Harrison (2005) using a 'chartist' approach, namely simply looking at price patterns, identified UK housing cycles of 18 years in length. His arguments were bolstered by the subsequent bust in 2008 just on cue, eighteen years after the last fall in absolute house prices.

If the lengths of housing cycles are of this order, or even ten years a number of questions arise. Over such a time period housing markets can be subject to structural change, perhaps initiated by policy interventions, that could have implications for the path of the housing cycle. In the UK, for example, there was a dramatic expansion of the private rented sector in the decade from the turn of the millennium supported by a

housing price boom. In this case the rise of private landlords supported the house price boom by increasing demand. In other countries policy changes, perhaps linked to taxes and subsidies, could dampen any cyclical tendency.

The causes of housing market upturns have commonalities in the form of rising demand associated with an upturn in the economy. Market downturns too are generally linked to recessions but the precise reasons for busts can be varied. Certainly, in the UK the nature of the downturns of 1990 and 2008 were very different. Both were associated with a recession but the anatomy of these two busts had significant contrasts. The downturn in the 1990s was driven by forced property sales due to extreme interest rates and high unemployment. Households that were in negative equity were unable to make their mortgage payments or remortgage (Jones and Watkins, 2009). In contrast, the recession of the late 2000s saw high unemployment, but low interest rates, which still generated a fall in prices. During this time, the market was negatively affected by banks' widespread withdrawal of mortgage finance in the wake of their financial collapse following the GFC. Reductions in loan to value ratios offered by banks from 95% to 75% significantly reduced buyers' purchasing power with consequences for house prices (Jones, 2012).

In addition, while a recession may be a prerequisite for falling prices not all recessions actually lead to nominal price falls. The UK recessions of the mid-1970s and early 1980s only caused **real** house prices to fall, that is a decline compared with inflation, not an actual fall (ONS, 2023). It leads to a question about whether the definition of a downturn should imply house prices fall in nominal or real terms? The evidence presented earlier in the paper that there were modest falls in real house prices in some countries following the GFC can also be interpreted as cyclical downturns.

Furthermore, not all housing market downturns are caused by recessions. In Figure 1 Denmark and the United States experience price downturns (or the beginning of) prior to the GFC. In the United States it was prompted by the subprime lending crisis that in itself led to the GFC (Jones and Richardson, 2014). However, the scale of the price downturns in both countries were undoubtedly impacted by the subsequent economic recession.

Finally, it is useful to note that house price trends/cycles are not dependent on tenure structure. This is illustrated by reference to the national house price patterns in Figure 1. While there are clear similarities in the cyclical patterns there are considerable differences in the tenure structure of these countries (Scanlon and Whitehead, 2004). It

implies that cyclical phenomenon linked to the economy are also only aligned to the internal dynamics of the house purchase market.

Overall, models of house price cycles to date are at best partial explanators. The cyclical tendency of house prices is strongly connected to the economy. There is also clear evidence of transactions varying within a housing cycle although its relationship with house prices is blurred. Supply constraints do not play a role but on the other hand the role of demand in generating cycles is not well specified. The next section presents a model focussing on demand dynamics.

Re-conceptualisation

It is useful to start with some observations on demand. At the heart of demand in the housing market is household decisions, with the core imperative a desire to upgrade housing circumstances. The traditional model in the UK sees households seeking to ultimately upgrade from tenants to become homeowners (Kemp, 2002). Government policy has over many decades embraced this desire, most notably through selling social housing with a discount through the 'Right to Buy' scheme (Jones and Murie, 2006) and most recently through the 'Help to Buy' flagship initiative that offers a subsidy to buy a newly built home (Comptroller and Auditor General, 2019).

The key dynamic is housing careers so the analysis here is therefore seen through a family life cycle stages model of household mobility that potentially begins with renting prior to home purchase (Clapham et al, 2014, Murie et al, 1976). It then proceeds through child bearing and child rearing stages that are associated with entry to home ownership although not everyone becomes an owner occupier.

House purchases and sales by households are primarily undertaken within a broad framework of the family life cycle unless linked to job-related longer distance moves, but the latter are of limited significance (Jones and Watkins, 2009). Household constraints can often lead to the postponement of house purchase or sale.

The focus in this section is primarily on the role of second-time rather than first-time buyers as they are the dominant force in the owner occupied housing market. It is presumed that households seek to undertake a process of upgrading their housing consumption through moving home, adjusting to demographic change once in the owner-occupied sector (Ortalo-Magné and Rady, 2006). This can be over-simply described as

trading up in the market (we ignore downsizing in the elderly as a minor influence) and assumes rising or at least stationary real incomes. In some case people trade down but this is normally also a part of a process of upgrading through refurbishment.

This desire to upgrade through the family life cycle interfaces with the economic cycle. Rising incomes support this upgrading process while falling (real) incomes and unemployment have negative consequences. Households are presumed to require a mortgage to purchase during early stages of the family life cycle, and so face potential housing cycle constraints through the availability of mortgage finance and the level of interest rates (Ortalo-Magné and Rady, 2006; Meen, 2013; Haurin et al, 1997). Severe rationing of finance and high interest rates dampen demand (and vice versa). Rises in house prices are therefore associated with strong economic growth, low interest rates and readily available finance. If one of these ingredients is missing then the financial picture becomes more complex but prices are still likely to experience an increase.

The precise shape of the housing cycle in terms of transactions and the rate of house price growth/decline can be linked to this household upgrading process. There is a mutually reinforcing relationship between house price change and realised demand, which in turn is related to the comparative prices of current and desired homes. Modest house price inflation is likely with the beginnings of an economic upturn and modest rising real incomes. It generates capital gains for existing owner occupiers and provides the opportunity for upgrading through an accelerator effect (Iacoviello, 2005). This initial house price inflation offers the basis for some households to move and fuels further price rises and greater transaction activity (Meen, 2013).

The resultant housing market activity can lead on to a period of rapid house price growth as households generate the additional capital for a deposit to permit a re-mortgaged move to a higher price house. The process is supported by rising real incomes, relatively low interest rates or ease of obtaining a mortgage during the economic upturn. Collectively these represent the ingredients for a market boom as more and more households act to upgrade with house prices being rapidly bid up and transactions activity at a high.

This upward spiral is ultimately thwarted by macroeconomic forces that stem economic growth and bring a downturn. The downturn inevitably brings a reduction in demand and at best static real house prices but it also brings consequences for the upgrading process of households. If there is house price stagnation it could mean the reverse effect

to that in the boom by extending the capital accumulation period before a household could be in a position to move without external support or the injection of additional capital.

The empirical evidence for this stylised model of a housing cycle is now reviewed for the UK regions based on research by Jones and Mostafa (2022). It involves a simulation of how many years it would take to upgrade for an average first-time buyer (FTB) each year through the UK housing cycles from 1983 through to 2011. This research period is longer than the transnational house price data at the beginning of the paper and so has the advantage of covering more booms and busts. It enables the study of the upgrading process through a range of cycles. While the period following the GFC is truncated the results presented below are consistent with the subsequent market pattern identified earlier.

The research method is based on actual housing market conditions over time, in terms of prevailing house price inflation, interest rates, mortgage loan to value ratios, etc, and the difference between the prices of flats or terraced dwelling generally owned by FTBs and semi-detached properties. The research evaluates how long it takes FTBs **on average** to accumulate enough equity and capital gains (net of transactions' costs) from their existing properties to upgrade to a semi-detached property. The simulation analysis presumes that movers use the entire proceeds from the sale of FTB houses (accumulated equity and capital gains) and the maximum loan terms generally available. The research distinguishes between the market conditions in different regions of Britain. Their data is derived from a range of government and mortgage lender sources. It is assumed that a FTB can move when the "net proceeds" from the sale of its first house is equal to 80% of the "required capital" for upgrading to a semi-detached house.

The results by cycle can be summarised as follows:

1980s Boom

Average FTBs can upgrade within 2-3 years in most regions

1990s Downturn (1991-95)

Declining prices increase median time periods required to upgrade for average FTB in 1991-1993 to 5 or 6 years

1996-2007 Long Upswing

FTBs purchased until 2003 in all regions – except London – able to upgrade within 1-3 years

Due to high absolute required deposits and high price difference between terraced/flats and semi-detached house prices in London FTBs required 4-9 years to upgrade with median viability point of 6 years

Post GFC 2008-2012

There was an unprecedented fall in interest rates counterbalanced by a dramatic rise in the required deposit as noted above.

The initial fall in house prices was 21% over five quarters to the first quarter of 2009.

The vast majority of FTBs who purchased from 2006 were not financially able to upgrade by the end of 2012. The exceptions were a very few cases mainly in East Anglia.

These findings highlight the important role of the housing cycle in household mobility and how the capacity to move varies with the upswing and downturns. It therefore explains the role of transactions through a cycle. In an upswing it is easier to move to upgrade and there are a high number of transactions. During the downturn housing market constraints dampen capital accumulation and the ability to move, leading to low transactions. While this research is based on second moves within the owner occupied market it is fairly easy to see that the opportunities/transactions for FTBs necessarily follow parallel trends given the small percentage of the market accounted by new housing.

This reconceptualization has households upgrading of their housing at its kernel. Not only is such upgrading the central dynamic of the housing market it is also the key to the shape of the housing cycle. In upswings it is relatively easy and quick to acquire funds to regear and upgrade to a better house. In doing so households supercharge the rise in house prices. In a downturn when prices fall or there are very modest rises it takes a large number of years to upgrade. This 'ease' of moving is reflected in transaction activity that closely mirrors the house price cycle, exaggerating the upturn and dampening the recovery stage in the economic cycle.

Conclusions

The evidence on house price patterns over time in OECD countries emphasises the influence of the national business cycle through demand on the rate of real price growth and the amplitude of any cycle. The statistical analysis also demonstrates that not all countries experience a clear cycle, and that where they do occur they are more than a decade in length.

The temporal patterns of real house prices are not simply linked to the economic cycle and real incomes but also to interest rates, and the availability of mortgage finance. There is not an equivalent or causal relationship between new housing supply flows and the scale of real house price changes for the reasons set out below. However, economic downturns invariably result in a significant fall in new private house building.

These declines in building and subsequent development time lags are seen by the DPW model of housing cycles as the ultimate catalyst for price upturns. New supply is presumed to lag demand so shortages eventually providing an amplified push in prices. There are a number of reasons why this causal relationship is not significant. While house builders are conservative entities building houses has a very short development period, and construction can be accelerated or slowed on new estates depending on demand. In any case new housing provides a small contribution to the housing market that is dominated by second hand homes. And perhaps most important of all empirically falls in house building are not seen to generate or support a fast bounce back in house prices.

The segmented two sector 'honeycomb' model is more complex but still emphasises the role of time lags. Its major contribution is to draw attention to the variation in transactions with the housing cycle. Overall, it has a number of theoretical limitations, notably that house prices as a whole are simply determined by the supply and demand for new housing. This one-way causal price relationship from new to second hand housing is difficult to justify theoretically or empirically.

Empirical analyses based on the 'honeycomb' model are only partial and dependent on extensive academic interpretation. These studies suggest cycles around ten years or more, even twenty, linked to business cycles. Beyond these empirical analyses centring on these theoretical frameworks statistical studies have found transactions activity is more volatile than that of house prices. Precise explanations of this relationship is incomplete and they have centred only on the dynamics of the housing market in downturns.

The key takeaways from these conclusions are that the **e**xplanation of a housing cycle is not linked to supply lags, and that the shape of a cycle is a function of demand pressures. The level of transactions also varies within a cycle but established theories do not provide a sufficient theoretical basis for a full understanding of the dynamics of a housing cycle.

This paper proposes an alternative that addresses these features of cycles. The essential core dominant dynamic is that households seek to upgrade their housing set within the opportunities and constraints of economic cycles. Upgrading translates into trading up in the market supported by mortgage finance. Upgrading demand is therefore influenced by economic growth (rising incomes), the availability of mortgage finance and the level of interest rates.

The interaction of upgrading and these variables generates the form of the housing cycle encompassing transactions activity and the rate of house price growth/decline. The crucial determinant of transactions activity is whether capital gain generated from cumulative price inflation is sufficient to permit households to re-mortgage, and enable them to bridge the difference between the prices of current and desired homes.

Typically, a resultant housing cycle starts with a gentle rise in prices but as an economic upturn takes root it leads to a boom in house prices and transaction activity, and it becomes relatively possible to re-mortgage/regear and upgrade to a better house. This re--leveraging exaggerates the upturn in the housing market (in terms of prices and transactions) compared to the economic cycle. In the subsequent downturn when incomes stagnate/fall prices stagnate and with little capital gain it takes a large number of years to upgrade. As a result transactions fall away.

The model is predicated on demand varying with the economic cycle and the dominant role in the housing market of households upgrading. The evidence presented above shows that the standard underlying demand variables – incomes, interest rates and mortgage availability of mortgage funds - are insufficient alone to explain the shape of house price cycles. Household upgrading is a necessary driver. The result is a differential experience of household demand, either side of a price peak that explains the shape of housing market cycles. Very often boom is the result of demand fuelled by ready finance and easy re-gearing. Recovery from a downturn is constrained by stricter loan to value mortgage ratios dampening demand, slowing the viability to upgrade. In this way a rapid boom is followed by a long muted recovery.

This stylised model does not fit all circumstances. The key aim in this paper is to explain reasons for a housing market boom followed by a slow recovery. However, the discussion of the housing and economic trends at the beginning of the paper demonstrates that this is not ubiquitous. There are a number of reasons. First, the form of a business cycle is not standardised, varying partly because of the individualities of national economies. Second, upgrading is not necessarily a dominant force in all countries. For example, in southern European countries households rarely move from their home which is often purchased with the help of their family with a few to staying for life. The operation of the owner-occupied sector varies in different cultures with implications for how housing markets work, cycles and trends in house prices.

References

Adams, D. and Leishman, C. (2008) *Factors Affecting Housing Build-out Rates,* University of Glasgow, Glasgow.

Adams, Z. and Fuss, R. (2010), "Macroeconomic determinants of international housing markets", *Journal of Housing Economics*, Vol. 19, No. 1, pp. 38-50.

Ball, M., Meen, G. and Nygaard, C. (2010), Housing Supply Price Elasticities Revisited: Evidence from International, National, Local and Company Data, *Journal of Housing Economics*, Vol. 19, pp. 255-268.

Barker, K. (2003), *Review of Housing supply – Interim report: Analysis*. HMSO, London.

http://www.barkerreview.org.uk/. Accessed June 2008.

Barker, K. (2004), *Review of Housing supply: Delivering Stability – Securing Our Future Needs, final report – recommendations,*. HMSO, London.

Berkovec, J.A. and Goodman, J.L. (1996), "Turnover as a measure of demand of existing homes", *Real Estate Economics*, Vol. 24, No. 4, pp. 421-440.

Blaseio, B. and Jones, C. (2019) Regional economic divergence and house prices: Insights from a comparison of Germany and the UK, *International Journal of Housing Markets and Analysis*, Vol. 12 No. 4, pp. 722-735.

Clapham, D., Mackie P., Orford, S., Thomas I, and Buckley, K. (2014) The Housing Pathways of Young People in the UK, *Environment and Planning A.* Vol. 46, No. 8, pp 2016–2031.

Comptroller and Auditor General (2019) *Help to Buy: Equity Loan scheme – Progress Review*, Ministry of Communities, Housing and Local Government, London.

Di Pasquale, D. and Wheaton, W. (1994), "Housing dynamics and the future of housing prices", *Journal of Urban Economics*, Vol. 35 No. 1, pp. 1-27.

Genesove, D. and Mayer, C. (2001), “Loss aversion and seller behavior: evidence from the housing market”, *Quarterly Journal of Economics*, Vol. 116, No. 4, pp. 1233-1260.

Grover, R. and Grover, C. (2013), "Property cycles", *Journal of Property Investment & Finance*, Vol. 31 No. 5, pp. 502-516.

Iacoviello, M. (2005) House prices, borrowing constraints and monetary policy in the business cycle, *American Economic Review*, Vol. 95, No, 3, pp. 739–764.

Haurin, D., Hendershott, P. and Wachter, S. (1997) Borrowing constraints and the tenure choice of young households, *Journal of Housing Research*, Vol. 8, No. 2, pp. 137–154.

Hoyt, H. (1933), One Hundred Years of Land Values in Chicago, University of Chicago Press, Chicago.

Janssen, J., Kruijt, B. and Needham, B. (1994), “The honeycomb cycle in real estate”, *Journal of Real Estate Research*, Vol. 9, No. 2, pp. 237-252.

Jones, C. (2012), Introduction: The housing economy and the credit crunch**,** chapter in C. Jones, C., White, M. and Dunse, N. (eds), *Challenges of the Housing Economy: An International Perspective*, Wiley-Blackwell, Oxford, pp. 1-24.

Jones, C. and Mostafa, A. (2022) Mobility constraints and cycles in the owner occupied housing market, *Housing, Theory and Society*, Vol 39, No. 3, pp. 296-316

Jones, C. and Richardson, H. (2014), Housing markets and policy in the UK and the

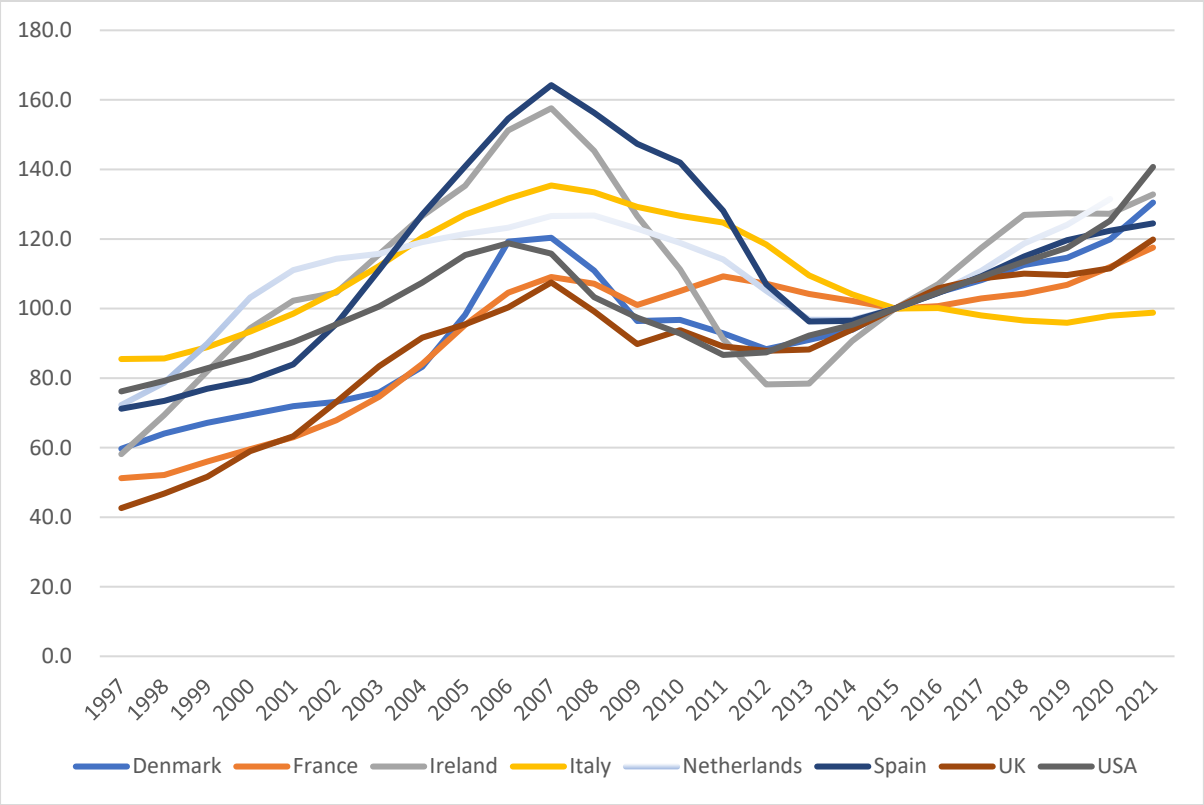

Figure 1 Real House Price Patterns of Countries that saw a Peak around the Global Financial Crisis

USA: A review of the differential impact of the global housing crisis, *International Journal of Housing Markets and Analysis*, Vol. 7, No. 1, pp. 129-144.

Jones, C. and Murie, A. (2006) The Right to Buy, Blackwell, Oxford.

Jones, C. and Watkins, C. (2009), *Housing Markets and Planning Policy*, Wiley-Blackwell, Oxford.

Kemp, P. (2002) *Private Renting in Transition*. Chartered Institute of Housing, Coventry.

Leamer, E. E. (2007), *Housing is the Business Cycle,* Paper presented at "Housing, Housing Finance, and Monetary Policy," a Symposium sponsored by the Federal Reserve Bank of Kansas City, at Jackson Hole, Wyoming, August 30-September 1, 2007.

http://www.kansascityfed.org/publicat/sympos/2007/PDF/Leamer_0415.pdf Accessed July 2011.

Marzano, E., Piselli, P. and Rubinacci, R. (2023) The housing cycle as shaped by prices and transactions: a tentative application of the honeycomb approach for Italy (1927–2019), *European Journal of Real Estate Research*, 16, 1, 1-21.

Meen, G. (2000) Housing cycles and efficiency, *Scottish Journal of Political Economy*, Vol. 47, No. 2, pp. 114-140.

Meen, G. (2006) On the economics of the Barker Review of housing supply, *Housing Studies*, Vol. 20, No. 6, pp. 949-971.

Meen, G. (2013) Homeownership for future generations in the UK, *Urban Studies*, Vol. 50, No. 4, pp.637–656.

Meen, G., Mihailov, A. and Wang, Y. (2016) *Endogenous UK Housing Cycles and the Risk Premium: Understanding the Next Housing Crisis, Discussion Paper 2016-119*, Department of Economics, University of Reading, Reading.

Moriizumi, Y. and Naoi, M. (2012) Unemployment risk, homeownership and housing wealth: Lessons from the bubble aftermath in Japan, chapter in Jones, C., White, M. and Dunse, N. (eds), *Challenges of the Housing Economy: An International Perspective*, Wiley-Blackwell, Oxford, pp. 58-89.

Murie, A., Niner, P. and Watson, C. (1976) *Housing Policy and the Housing System*, George Allen & Unwin, London.

Muth, R. F (1960) The demand for nonfarm housing. chapter in A. C. Harberger (ed) The Demand for Durable Goods, University of Chicago Press, Chicago.

ONS, Office of National Statistics (2023) *House Building, UK: Permanent Dwellings started and completed by Country*, ONS, London. https://www.ons.gov.uk/peoplepopulationandcommunity/housing/datasets/ukhousebuildingpermanentdwellingsstartedandcompleted (accessed April 2023)

Ortalo-Magné, F. and Rady, S. (2006) Housing Market Dynamics: On the Contribution of Income Shocks and Credit Constraints, *American Economic Review*, Vol. 73, No. 2, pp. 459-485.

Scanlon, K. and Whitehead, C. (2004), *International Trends in Housing Tenure and Mortgage Finance*, Council of Mortgage Lenders, London.

http://www.cml.org.uk/cml/publications/research?keyword=&key_area=0&date=0&page=8 Accessed April 2011.

Stein, J.C. (1995), Prices and trading volume in the housing market: a model with down-payment effects, *Quarterly Journal of Economics*, Vol. 110, No. 2, pp. 379-406.

Taltavull de La Paz P, (2012), The responsiveness of new supply to house prices: A perspective from the Spanish housing market, chapter in Jones, C., White, Dunse, N. (eds), *Challenges of the Housing Economy: An International Perspective*, Wiley-Blackwell, Oxford, pp. 170-194.

Thomas, B. (1972), *Migration and Urban Development: A Reappraisal of British and American Long Cycles*, Methuen, London.

Tsai, I-C. (2014), Ripple effect in house prices and trading volume in the UK housing market: new viewpoint and evidence, *Economic Modelling*, Vol. 40, pp. 68-75.

Tsai, I-C. (2019), Dynamic price–volume causality in the American housing market: a signal of market conditions, *North American Journal of Economics and Finance*, Vol. 48, pp. 385-400.

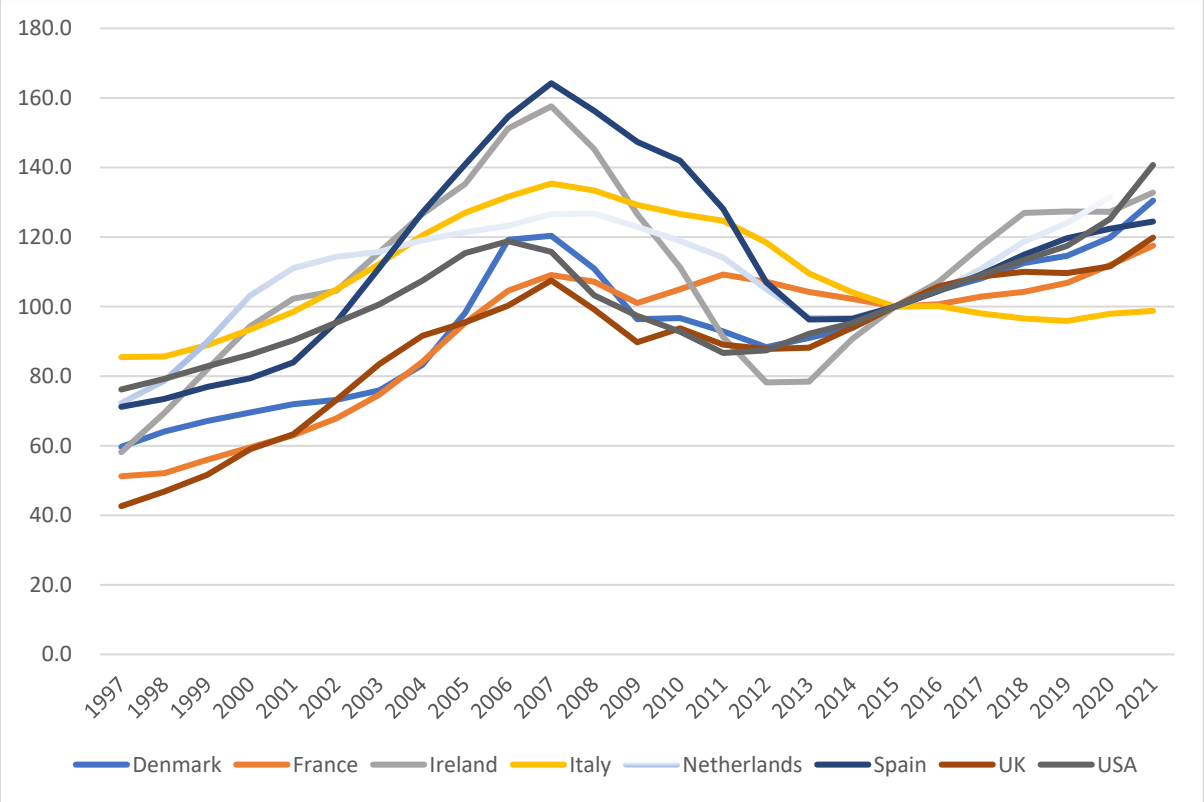

Figure 1 Real House Price Patterns of Countries that saw a Peak around the Global Financial Crisis