Understanding Housing Markets: Real Progress or Stalled Agendas?

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HOUSING MARKETS: WIDE INTERESTS, NARROW THEORIES?

Discussions about housing markets appear daily in the media and press of most countries and they underpin, along with individuals' experiences, frequent conversations around dinner tables, on aeroplanes, elevators and staff common rooms. Everybody, now, has a model of the housing market. Different, more technical and more evidence-rich debates about housing market outcomes are commonplace in municipalities, planning departments and the law courts. Diverse analytical perspectives, with equally varied empirical content and approaches, on housing markets are recurrently unfolded in the academic journals of core disciplines and, more commonly, specialist housing and urban journals.

The currency of 'housing markets' as an area of interest is hardly surprising given both the causes and consequences of the recent Great Financial Crash (GFC); see Smith and Searle (2010). However, public debate and published literature contains not one understanding of the notion of housing market but many. Again, that variety is unsurprising as there are commonly simplifications between the academy and the polity. But in the context of housing market analysis and debate there is a reasonable concern that while there are different conceptions of housing market that are valid and useful, they lack any intellectual coherence. The burden on analysts and commentators is to be clear on what conception of housing market they are using and why. In reality, even within academia there is a lack of clarity about the meanings of 'housing markets', why they are important and why they need to be researched and rethought (see Chapters 6 and 7).

Some writing within academia aims to push forward theoretical understandings and to develop new conceptual models. Although theoretically informed, the vast bulk of published research on housing and cities is potentially valuable because it provides

'applied' evidence on patterns and processes. But applied to what, and for whom? This chapter argues that there remain unsettling gaps between how academia conceptualises and analyses housing markets and how serious commercial sector interests such as banks, major builders, real estate investment companies and governments, both local and national, grapple with the most basic questions of market structure and functioning let alone more nuanced estimates of housing demand and supply. It is argued below that economists and others have fashioned more elaborate models and developed better datasets for housing market analysis over the last two decades. However, there remains a valid question whether economics research on housing has accepted too readily the restrictions and reductionisms of conventional theoretical frameworks and paid too little attention to the insights of cognate disciplines and indeed new evolving ideas at the edge of core economics.

More worryingly, a concern remains that conventional economic reductionisms in housing market analysis throw out key babies along with the bathwater. Our assumptions can define away important research questions and issues and there can often be prolonged debate about the efficacy of econometric techniques rather than whether we have garnered the most important data in the first place. Housing economics research may be interesting, but is it ever useful? The beginnings of wisdom, according to Burns and Mitchell (1946), lie in asking the right questions. This chapter tries to identify key questions asked and omitted in housing market identification and analysis.

The purpose of this chapter is to consider how what has been 'learned' about housing markets over recent decades can be used to provide an economically based notion of housing market. That notion has to be: first, conceptually well based; secondly, provide hooks to connect model assumptions and processes to emerging insights in related disciplines: and, thirdly, credibly connect to and inform real housing policy and planning decisions. Clearly, the reductionisms tolerated in developing a framework with such aims will be rather different from an intendedly, high-level and abstract view of housing markets that nests neatly within core equilibrium economic models. The perspective here is still economic in nature but emphasises real systems, policy connections and interdisciplinary connections. It is an outward-looking and policy-relevant synthesis that is sought.

The chapter proceeds, in the next (second) section, to consider how to link housing markets to core economic theories and why such linkage is often likely to be too reductionist to achieve the three goals espoused above. The economic significance of the nature of housing as a commodity is explored in some detail to emphasise how what we often regard as important about housing and housing markets is assumed away in high-level theorising. It aims to set out key questions as to what a housing market is and the different ways in which the likely features of markets can be conceptualised. The subsequent sections then briefly review the main, different ways in which housing markets are subjected to empirical analysis and how these approaches might be improved. The third section considers how housing market to economy connections may be thought of at the aggregative national or multi-regional scale (How does the 'housing market' matter in the national economy?) and the fourth section moves to the local or metropolitan scale of analysis and policy. The fifth section is a brief conclusion.

FROM CORE THEORY TO SORRY REALITIES: MARKETS AS REAL PROCESSES

Core meanings of market

The vast majority of economists, in academia or government, carry with them an intellectual framework that is firmly rooted in the

neoclassical synthesis. Somewhat greater varieties of approach prevail in relation to macroeconomic issues. When confronted with a question about changing drivers for housing demand, such as rising incomes or growing household numbers, or the shifting costs of housing supply, such as rising borrowing rates for the construction sector or rising land costs, there is a stripped down, *ex ante* model that can be applied to suggest likely housing market outcomes. Such unqualified discussion is somewhat rarer now than 20 years ago within academia but is still prevalent in government and financial sectors.

In essence this high-level approach applies neoclassical choice, and equilibrium-oriented models to an 'in principle' market called housing. The systematic peculiarities of the commodity involved and the particularities of the markets that are inevitable consequences of these characteristics are not allowed to destroy the logic of the story. That is, a very high-level and *ex ante* position on the connection between economic change and housing market outcomes can be drawn. Although it may be logically sound and usually directionally correct it will often be generally devoid of any practical use and can, in some settings, lead to the wrong measures for policy being adopted.

In 2007 as the long housing boom was manifesting worrying symptoms of excess household debt, housing equity withdrawal and accelerated consumption, the Federal Reserve convened, at Jacksons' Hole, a major colloquium on housing macroeconomics, to assess how policies needed to be reset to shape more effective market outcomes. The seminar had a stellar cast of analysts and officials. The papers for the seminar were about housing and the economy but in only a few of them – for instance, Muellbauer's contribution (Muellbauer, 2005) – was there any real attempt to incorporate key, basic features of housing markets: most did not, and in consequence the emerging policy debate was not at all about how to reshape housing markets or housing market policies but rather about the more familiar terrain

of monetary policy and macro policy. For instance, it has had no impact on the reshaping of national housing policies in the advanced economies post the GFC. Similarly, the IMF's World Economy Report for 2008 raised housing economy issues to an unprecedented status in global policy discussion, but did so without any firm foundation in informed housing market analysis (IMF, 2008). Good real estate analysis needs a basis in good real estate economics.

In high theory the notion of market employed is, in many ways, a relatively unimportant part of the economic story and it operates not as a real or stylised system but simply as a logical construct. The market in standard Walrasian theory, for instance, is a frictionless device that smoothly and predictably transmits logical cause into precise maximising effect. This emphasis is, of course, rather different from the 'market' focus of Adam Smith where the great significance of the 'invisible hand' was that it served as a signalling mechanism and there is much of real markets in the Wealth of Nations. Lachmann (1986) stresses the contrast of neoclassical and Austrian perspectives on markets. The economics of Hayek, Von Mises and others emphasised the subjectivity of decisions, the complexity of processes and the multitude of networks or connections within a (single) market. That more micro, even messy, view of markets forms a useful contrasting intellectual standpoint to the Walrasian synthesis. Modern economic psychology and political economy would not necessarily finish with the same subjectivist assumptions and free-market conclusions as the Austrians (Anderson, 1996). But their emphasis on real market processes remain valid. After the Walrasians it was only the relatively disregarded Austrians who stressed the nature of markets as real discovery processes (Langlois, 1986).

But what is it that makes a market? In the most general terms, a market is the term used to connote a system, or institutional device, for exchange. It is a set of mechanisms or arrangements that facilitates flows

of information between buyers and sellers. In consequence, it allows trades to be agreed and goods or services to flow from sellers to buyers and payments to move in the reverse direction. Traditionally, there was an assumption that a market was a venue, a well-defined place. It was the market of the medieval town, the cheese or fish or meat market of the Victorian city, or the stock or futures exchanges of Wall Street and Chicago. The term implied presence in place of buyers and sellers, as well as their goods and their means of payment. In due course, for instance the development of ideas about central place theory, it was recognised that markets could spread or connect over extensive areas, but usually with consumers moving to sales points (Maclennan, 1982).

Early neoclassical synthesis did little to reformalise or expand this notion of market. For instance, in Walras the forms of information gathering and bidding (the *cries au hasard*) presumed sellers and buyers in proximity. Recent developments on the internet provide a sharp contrast, where transactions do not require sellers and buyers to be in spatial proximity to exchange information, but rather to connect via cyberspace (although there may be proximity effects in the physical delivery of goods exchanged). There is an extensive literature emerging on transactions in cyberspace but it has had little application in real estate markets to date.

Where goods are costly, or even impossible, to move to a single market point then two obvious options arise. If the immobile good is relatively simple and can be described by a few key verifiable features, then centralised information will still allow centralised exchanges (the price of oil reserves, for instance). However, if the locationally fixed good is complex and has key attributes that are difficult to measure or describe, then trade is likely to require dispersed exchange involving search behaviour at the different points of single exchange across the market.

Thus, markets are not necessarily single points or places but rather connected information networks. Even where networks are well established, information flow is not always full or costless so that for trade to take place the market may require specialised information intermediaries who not only spread key messages but also verify the content and quality of proposed exchanges. These information services are important because these networks and places are not necessarily populated by fully informed consumers with firmly fixed preferences. Where individuals trade infrequently or do not enter a market with a well-defined list of what they might buy the market becomes, in Hayek's terms, not just an exchange process but a discovery process. And discovery can apply to sellers too, who may find new ways to position, present and sell their goods (Lachmann, 1986).

Within the market there are not only institutions that shape information flows and structures that separate potentially interactive trades but also there are rules and conventions that influence the ways in which offers are made. Multiple sites may coexist, offering identical products at advertised prices, such as the typical 'supermarket'. Within these systems, bargaining around advertised prices may or may not be culturally accepted (shopping in Scotland and Canada is a very different experience – in the former, a price tends to be a price; in the latter, it is often a starting suggestion for a negotiation). Or there may be auctions, and auctions have a multiplicity of rules, such as the English versus the Dutch auction. And for major assets, such as homes, there are likely to be even greater varieties, such as sealed bidding systems. The implications of these differences for price formation in housing markets are considered, for example, in Gibb (1992) and Antonides (1990).

When we move beyond the notion of market as a logical construct, then it has to be recognised that markets have different spatial and non-place forms and dimensions, and that participants learn in the market process. Furthermore, information flows and bidding systems can create a system that not only has frictional exchange costs but also may,

as a result of them, fashion quite separate exchange sub-sets within apparently the same system. There may be market institutions and devices that encourage such separations and, in consequence, no longer act as a single market fashioning an equilibrium price, but as a partly partitioned system with some price diversity.

It would be unfair to leap from the abstract microeconomics of Walras, for instance, to a conclusion that core economic theory misses the point of housing markets. Developments in microeconomic theory, for instance game theory, have added some notes of reality to the core mechanisms of general equilibrium theory. However, it is clear then that any real housing economics has to be based not in a notion of market that is merely a logical construct, but rather one that recognises fundamental features of housing as a commodity, and that trader effort will unfold in a potentially complex device in which information agents and institutions have significant roles. In moving beyond a 'black box' approach to the housing market it is important to consider how the economic nature of housing as a commodity is likely to shape particular kinds of market process and structure that lead us some way from the frictionless *deus ex machina* of high theory.

Such de-reductionism in applied sub-specialisms in economics is by no means rare. Much progress in understanding labour markets, capital markets and financial systems has been made. And insights and approaches developed within these specialisms have fed back into new core modelling, or more commonly respecified macroeconomic models. However, feedback from the insights of applied housing economics are less apparent in economic discussion of the housing system. The encouraging development for housing analysis is that there has been a growing volume of informed housing economics in the last two decades.

The worry for the interest area is that there is little sign of core respecifications to reflect the lessons of intersectoral research. For instance, it was noted above that in the World Economy Report for 2008 (IMF, 2008), housing issues were a top policy concern but the analytical models used in the report, for instance those developed to report on the over- and undervaluation of national housing stocks, reflected more or less none of the research learnings from housing economics in prior decades and, in consequence, the estimates were probably misspecified and inaccurate. As housing looms so large in the budgets and wealth portfolios of households and touches significant components of employment, production and the financial sector, there is really now no excuse for national governments and international agencies to have a modelling approach for housing that is not rooted in realistic reductions in abstraction. We can learn much from high-level theoretical thinking on housing but applying such ideas to real markets, without qualification, is analytically misplaced concreteness. Market analysis, for housing or anything else, deserves more than a logical construct as the centre-piece but rather a well-constructed model of the key transmission mechanism that is the housing market. How can we define and identify housing markets? What is there systematic about the nature of housing? What stylised facts are there than can be used to construct definitions and models of housing markets that are operable? Are such models and definitions more or less likely to leave us comfortable with an equilibrium perspective on the markets we model?

Housing and housing markets

At first sight it may seem somewhat pedantic to take time to define and give meaning to the terms 'housing' and 'house'. The *Oxford Dictionary* defines the word simply as 'building for human habitation'. 'Housing' is both a noun and a verb. The term is applied both to dwellings (my house, town house, council house, etc.) and the set of actions which (*inter alia*) plans, produces, finances, allocates and maintains dwellings. Both of these

notions, 'housing' as noun and verb, need to be explored if housing economics is to provide some useful insights about the notion of housing market. This arises because the nature of housing as a commodity has direct, unavoidable, implications for the ways in which effective market exchange arrangements may operate. Making these systems work involves process.

How we define housing will have implications for how we define and identify housing markets. Sociologists, anthropologists and economists have all explored the meaning of the words 'home', 'dwelling' and 'house' (Saunders 1989; Mallett, 2004). Within more economically oriented literature there has been long emphasis on the product variety, spatial fixity, neighbourhood and asset aspects of housing: for instance, see Maclennan (1982), Quigley (2002), Galster (1987) and Smith and Searle (2008), respectively. It is useful, from time to time, to look at the variety of these approaches across disciplines, as it is a reminder of how reductionist we are within each discipline. If we wish to connect housing market analyses to broader concerns about well-being, psychological and material, or to consider how housing is embedded in complex social relationships, then a regular revisit to where we start as disciplinary reductionists is useful. The focus below is more narrowly on economic notions of the market.

From an economic perspective, a house (or 'housing') consists of a designed physical structure of connected and sheltered spaces and systems, constructed of materials and components (pipes, wires, etc.) through the use of capital (e.g. developers' ingenuity and equipment), labour (from designers to bricklayers) and land or existing property. That is, houses are complex, durable, locationally fixed structures with multiple attributes that are invariably purchased and consumed jointly with the neighbourhood characteristics that surround them. This concept, broadly speaking, has been at the heart of housing economics for four decades or more and they are important features that make housing different from simple goods, such as the apples and widgets beloved of mainstream economic models.

Complexity

Economics research has been good at establishing the existence of the complexity of housing as a good. For almost four decades hedonic house price studies have been used to identify the economic significance of different, distinctive attributes of housing (Rosen, 1974; Brown and Rosen, 1982; Malpezzi, 2002). These studies, that almost invariably have high levels of explanatory power, confirm that housing prices are influenced by attributes or characteristics such as:

- Size, style, layout and internal amenity (variety).
- The location of the dwelling: households pay not just for size, type, quality but for the characteristics of the location; these (place and space) influences include:
  - the costs of accessibility to the wider spread of locations used by household such as employment, shopping and leisure locations
  - the quality and availability of neighbourhood amenity, including neighbours
  - access to local retail and service facilities (both public and private)
- The asset importance of their home and possibilities for (relative) gain and loss as well as quality and maintenance obligations (fixity and durability)

The range of attributes involved can be grouped under the three broad headings of *product variety*, *place and space*, and *fixity and durability*. The pros and cons of hedonic studies are considered further in the fourth section, below, but it can be argued that they have been widely, and often productively, used in research but without housing economics paying much regard to the consequences of that complexity for market processes and choices: or indeed, how that complexity may complicate the implementation of hedonic studies in the first instance.

How do product variety, place and space and fixity and durability (the real features of housing) impact the structure and process of the market? With these fundamental features of housing, how can the exchange system work to ensure that efficient and well-informed prices emerge (and that revealed hedonic prices are based on such processes)?

Product variety

The real and diverse characteristics of housing have a number of implications for market structures and processes. The first characteristic is that the range of significant elements of household well-being, or utility, influenced by housing characteristics, is such that the costs associated with the house will always be a significant element of households' budgets, so that mistakes matter. The second characteristic is that the costs of search and exchange (where dwellings are bought and sold rather than rented), allied to their budget significance, means that residential moves, and therefore well-informed trading by individual consumers, are relatively infrequent. With so many complex characteristics, this means that households, to avoid difficulties of adverse selection and moral hazard, are likely to deploy market experts to inform price bids (Quigley, 2002). This is likely to mean that not only do mistakes matters but also that with positive transaction costs they may be expensive to reverse.

Sellers will have an interest to conceal information in some instances and there may be significant information asymmetries about issues such as true dwelling condition (the central heating defects that you only know when you live in a house) and the nature of some externalities (the atmosphere of a neighbourhood, the propensity to form or avoid informal contacts, etc.). In some jurisdictions there are regulations requiring sellers to disclose relevant property information but even where they do exist there are potential neighbourhood effects that will be customer- as well as property-dependent.

Attribute complexity, in the case of housing, invariably leads to the need for agents and institutions. Their views can matter in shaping the choice sets that households can make effective. The question then arises as to whether the information and agent structure operating within the market is competitive or influences choices made and prices set in particular times and places.

Consumer assessment of the quality and implicit price of a diverse set of housing attributes is clearly a demanding information-processing exercise if strict neoclassical behaviours are assumed. This remains the case even where consumers have assessment procedures that are hierarchical or that eliminate by aspects (for more detailed consideration, see Chapter 3). More recent interest in new behavioural economics implies that different approaches to understanding the information processing involved in housing choices may be required, and this is considered in the final section (see Hogarth and Reder, 1987; Egidi and Marris, 1992; Rabin, 2001; Camerer et al., 2003).

The nature of housing attributes, given the complexity of design and attribute interactions, is such that they often have to be physically seen by buyers to be truly valued. There are important exceptions to this. For example, in some larger nations such as the USA, Canada and Australia, where interregional distances are on a grand scale, some households are prepared to rent and buy homes without visits but on the basis of an expert assessment associated with an electronic virtual tour. And in the UK there have been significant instances in the last decade of London-based buy-to-let investors purchasing properties in northern British cities without visiting them. In the first of these instances, the significant housing search costs involved explain unseen choice, and in the second case the detailed arrangement of the attributes were unimportant as the purchase had no consumption dimensions for the purchaser. More complex households,

with multiple consumption uses of the dwelling, will usually be anxious to search homes and neighbourhoods prior to purchase. Search costs are likely to be significant, especially in 'hotter' housing markets, and they are also likely to be significant because of the spatial nature of housing markets (Novy-Marx, 2009; Piazzesi and Schneider, 2009).

Place and space, fixity and durability

Space effects interact with variety and durability in shaping the functioning of housing markets. First, space and place (geography) matters because households are choosing places, neighbourhoods and locations when they choose their home. Home and neighbourhood is an ineluctably conjoined choice. This jointness not only adds to the variety of attributes that have to be considered but also adds other distinctive aspects to housing choice that are considered below.

Secondly, unless we are living in a world of tents and mobile homes, space matters in market functioning because properties cannot be brought feasibly to some central market place. Purchasers have to search the spatially dispersed sales sites and know which sites to search (Clark, 1982). Aside from the search costs involved, there is a further, important market functioning consequence. Searchers, agents and institutions will not in reality be selecting or selling across a fully connected or centralised set of possibilities. Rather, searchers for immobile sales offers will have to choose within a (probably) localised set of a limited number of options. Preferences and information flows, and expert advice, will mean that the housing market in, say, a city at some point in time is not a single market but rather a collection of relatively localised exchanges. To assume that searchers, sellers or agents can equilibrate the price/quality relationships for the whole set of properties traded at any immediate time is an onerous demand to place on the market mechanism.

A metropolitan housing system may have multiple localised simultaneous trades but this does not necessarily mean that the market will be singular in its price outcomes and perfectly competitive in its structures.

Spatial search and informed choice, and the potential roles of market experts and institutions, are likely to be given even greater salience by the interaction of locational and fixity characteristics of dwellings. A further crucial consideration is that a house, when built, also has an absolutely fixed location. Although houses are spatially fixed, the geographies of employment, social composition, crime, etc., around about them might change (homes are absolutely fixed but their relative location might change over time).

This absolute fixity of a dwelling, combined with its durability in a potential matrix of changing locational attributes, means that owners face risks of price depreciation (appreciation) and asset losses (gains) that lie beyond their own control. Purchasers require information about options and risks, and this reinforces the roles that 'expert views' (surveyors, estate agents, lawyers and lenders) may have in choices. Geography and time interact to make consumer and expert expectations about prices and areas an important feature of how housing systems operate.

A further problem for smooth equilibrating tendencies in housing markets is that an important attribute of housing choices, often associated with neighbourhood attributes, is that they are often a 'social situational good'. Choice of housing makes statements about chosen lifestyles, relative status and social standing (see Chapter 3). There is clear evidence that for many, though not all, households that individuals choose houses where they wish to live amongst people like themselves. That is, neighbours are an important determinant of neighbourhood quality so that households are extensively interdependent in their decisions. This observation, allied to the conclusion of the previous paragraph that expectational effects are also important, means that the prices, vacancy rates and

resident composition of neighbourhoods can change sharply and quickly (see Chapters 4 and 5).

In brief, the key features of housing are likely to mean that in some neighbourhoods, and particularly those regarded as problematic for policy, change patterns may be complex/chaotic rather than smoothly adjusting. Fast, non-linear demand responses may play out in a context of rather slow supply-side responses and where non-price adjustments have key roles in shaping final equilibria.

This last point brings us to issues of change rather than choice (given some fixed set of housing opportunities) and moves into the medium and long term.

It is important to ask why supply-side responses are typically sluggish, not least because in the absence of that reflection too many polemicists and more than a few economists lay supply inelasticity at the door of planning system constraints.

There are surprisingly few contemporary estimates of the price elasticity of housing supply for given markets over different periods. We have been happier to pontificate about supply elasticity than to measure it. Some neoclassical-based analyses of planning and supply issues, for instance Glaeser et al. (2008), have used well-defined models and good data to test plausible hypotheses about supply-side limits and there has been equally diligent work in other contexts: for instance, Grimes and Aitken (2010).

Analyses of the construction sector, and the labour, money and materials markets it relies upon, also suggest a range of characteristics of housing production systems and land markets that are likely to lead to sticky supply. Michael Ball has long argued that the real economics of the housing construction sector is oversimplified in competitive economic theorising about the housing market (Ball, 1996) (see Chapter 2). In some ways confirming this, policymakers from Lyndon Johnston in the 1960s (who lamented that the USA could send people to the moon but could not build enough homes fast enough, to house a growing population) through the UK Barker Reviews (Barker, 2004) to the current Donald Reviews (National Housing Supply Council, 2009) in Australia all express concern and some surprise at the sluggishness of housing supply.

It is more than unbalanced analysis to assume that slow supply-side responses always and everywhere stem from the planning system stilling the responsive hand of an otherwise competitive, informed housing provision system. However, when emphasis shifts from cross-section, consumers and space to supply, the emphasis is on adjustment over time and on production. Firms face real uncertainties, on cost and demands. Firms face incomplete information about preferences, as well as uncertainties about where and how the market will develop, planning systems and market instabilities. The construction industry is fragmented, often, productivity gains are slow and much of the return to construction (in some countries) is made from landholding. There may be localised monopolies of land hoarding. Lagged information and incomplete adjustments prevail. The market may be far from perfection, but still in some ways competitive. And in that context the challenge for applied analysis is to identify the balance of 'market' failures versus planning restrictions.

Housing fundamentals: so what?

So how will the invisible hand work in markets that have characteristics of the kind discussed above: namely, the potential for short-term submarkets and the near certainty of supply inelasticity? In the short and long term it requires information flows to emerge from market action and to be available to traders across the system as a whole. In essence, if searchers searched intensively over quite short periods of time until they make a successful bid, then this requires price and bid information to be available more or less immediately to potential buyers (and sellers), or at least their market agents.

Fast revelation of exchange price and bid information is not a characteristic of most housing markets in the advanced economies. In the UK, open auction prices only tend to be available in periods of sharp market downturn and home repossession when financial institutions auction off repossessed stock. Price statistics emerge to inform decision taking either through indices developed in a variety of ways by large lenders or market agents, or they are official statistics that emerge with a lag (and influence planners but less so the public). Sold dwelling prices in the UK are public information, but there is usually a minimum lag of a month in identifying sales prices.

In Victoria, Australia, half of homes are still sold in street auctions. Consumers, potential sellers (and aghast housing researchers) can stand in the street and watch prices being formed in the raw. And the results of these sales are listed, street by street, in the general press the following week. In Ontario, Canada, it is almost impossible for consumers to independently establish market-relevant housing prices. Realtors have a near monopoly on local market information and few make standardised information available to consumers at the scales at which they might search. Banks do publish lagged, usually quarterly prices but official price series are poor.

Price information in many systems of urban housing markets is only available on a lagged, incomplete basis and through market agents. Research makes too little allowance for the paucity of adequate price signals for consumers, especially in cross-country studies but also in modelling particular markets. The 'invisible hand' will fumble in such circumstances. More to the point, this incomplete information system is likely to localise searches into particular market locations or niches, so that locally noisy price signals may be prolonged and non-price signals given relevance. It is not being asserted that the market becomes a permanently disconnected catallaxy but that inter-area price adjustments and short-term market equilibration may take some time. The market as a self-organising system may involve more than fast adjustments driven by clear price signals (see Tabuchi, 2009).

Of course, supply-side fixity may mean that longer-term price equilibrium may also be, at best, a prolonged process. But clearly these features of supply (allied to consumer choice realities) can further complicate the mechanisms of the market in the longer term. Do we see the system of land and real estate as a random walk, efficiently valued and priced by the capital market? The efficacy of efficient market models is, post GFC, open to renewed debate. Do we see the market as a more chaotic mechanism? Arguably, we can, especially over short periods. Small, local and complex systems are quite likely to be open to complex and chaotic change with endogenous reinforcing mechanisms. There may also be periods of such change in wider housing markets, when at the peak or bottom of the cycle behaviours have interactive crowd features, when uncertainties are at their greatest and have their greatest impacts. Perhaps a system of punctuated equilibria may prevail, where periods of well-functioning, steady market behaviour become disrupted by chaotic bursts of change before a new period of order emerges?

These different forms of market behaviour may all have some relevance for housing markets in some places at some times. But there is also enough evidence to suggest that many markets have some equilibrating propensities. They may not be in equilibrium, but moving in that direction. This then poses a difficult choice for market analysts. Not only do they now have to identify the spatial extent of the market and its product features but also which conceptual notion of market meshes with the problem they are addressing. Faced with a real housing market question, analysts cannot, *ex ante*, resort to pervasive in-equilibrium assumptions. The skill in applied economics is to identify what the problem is and to choose the most useful framework for the issues on hand: *ex cathedra* and *ex ante* don't count. If the analytical

interest is in the economic processes of housing markets, it is dangerous to throw out any real consideration of how adjustment mechanisms in the market are influenced by the inherent nature of the commodity.

If any or all of the above reservations about the functioning of housing markets have salience, then there are significant implications for core work in housing economics. Market structures and processes used in analysis need to be justified rather than simply assumed. Hedonic studies will need to be carefully constructed. If consumers are localised into a set of areas and products, and this may be because there is not a complete range of housing type-area substitutes as well as because of search cost and agent effects, then the set of choices may have some distinctiveness for consumers. In these circumstances it would be technically imprecise to consider that market as perfectly competitive (and that implicit assumption underpins most studies of housing choices and markets). Rather, each set of products, the area-type combinations, has some degree of lasting distinctiveness. Market structures will be more akin to monopolistic competition and this may mean that there is incomplete attribute price equalisation over the market as whole in the short and medium period.

In summary, then, the key real features of housing mean that it is:

- a multiple-attribute or composite commodity and its value reflects internal/structure attributes as well as neighbourhood and locational characteristics – standardisation of price and quality data is imperative, therefore, even for the most basic description of the market
- the set of attributes in dwellings varies from type to type and place to place within a market so that consumers are confronted with product variety, and of course consumers differ also in age, income, preferences, etc; the key issue is what product group choices are best for different household groups
- the fixity and durability of housing means that choices made are inherently risky
- social and neighbourhood interconnections between households, allied to economic

expectations behaviour, are likely to mean that market trends in small area are likely to be non-linear when change ensues
- infrequent search behaviour and the risks and returns involved mean that households, especially, in buying homes are likely to use agents and experts in the housing choice process
- the fundamental features of housing and the range of markets that home construction has to interface with means that the housing supply process is likely to be sticky and encounter market failures and imperfections despite a deconcentrated structure of ownership.

Rejecting these considerations denies the real nature of commodity complexity. If economists are going to stick with their recognition of commodity complexity in housing, and that would be wise, they need to get to grips with how that complexity actually influences market outcomes and processes. How is this reflected in market analyses at national and local scales? In the sections that follow the argument is presented by moving from the micro and the metropolitan (next section) to the macro (fourth section) scales.

METROPOLITAN MARKETS AND LOCAL MARKET ANALYSIS

Access-space: old foundations

Whereas macro models of 'the market', as discussed in the next section, have been concerned with cycles and medium-term change, local housing market analysis, including both markets specified at metropolitan scales and more localised segments or submarkets within them, has primarily focussed on cross-section or short-term analysis. For the last half century, the dominant paradigm for urban economic analysis of the housing market has been the access-space model rooted in the work of Alonso (1964), Muth (1969) and Evans (1973). It is a framework that implies highly ordered spatial (ring and gradient) patterns and it is based on competitive equilibrium assumptions processes. However, the

model has very limited usefulness for most of the important contemporary questions about the aggregative structure and functioning or metropolitan housing markets. Over the last 25 years a number of contributors, for example Maclennan (1982) and Rothenberg et al. (1992), have argued for a shift to understanding real market processes and real structures as a better basis for applied economic analysis of housing markets. Decentralisation of homes and jobs, growing incomes, diversification of preferences and lifestyles have all contributed to the emergence of the metropolitan market as a complex choice mosaic of housing and neighbourhood 'products' for 'consumer' groups. The core employment location and ring structures of the old model now mask so many important aspects of cities that they need to be pushed to the background of research and teaching. Access is required to a multiplicity of non-CBD (central business district) household activity points and households of the same incomes make quite different choices of what to do and where to do it.

That emergent diversity of structure and preferences, paradoxically, make it more important for researchers and planners to know the actual structures of housing market and behaviours within them. It is not that access and space tradeoffs are unimportant; indeed we are moving to a time when rising fuel costs and carbon charging will put a new premium on accessibility. But we need to establish clearly, as a matter of fact, what and where our metropolitan housing markets are?

Housing market analysis clearly needs to be less reductionist if it is to answer the real questions of participants, planners and policymakers dealing with these systems. Housing market analysis for markets with real dimensions is required. Should we proceed with an equilibrium neoclassical analysis, with simply more localised labour markets and household activity points? This approach has produced useful results from Straszheim (1987) onwards and is now the most common approach used in North America. But does such a starting point

implicitly restrict our techniques and our range of conclusions? The answer depends on at least two considerations. First, either nationally or locally, is there reason to believe that the local housing system is in a period of particularly rapid change (unduly hot or cold; see Novy-Marx, 2009), or does it appear to be closer to some more balanced or equilibrium position. If rapid change is driving the interest, then a short-term equilibrium framework may not address key issues of concern. Secondly, the approach selected will have to reflect the questions asked: for instance, a model of perfectly informed households with competitive mortgage and housing markets may not be too helpful in getting to evident problems of limited consumer information and non-price rationing of housing finance. Without abandoning a long-term equilibrium framework as a pointer for the direction of change it may be important to look for non-equilibrium signs to indicate how markets are operating and with what consequences. In the UK, at least, it is often safer to assume that local housing systems are not in equilibrium and to proceed accordingly. Arguably, given the rather different intensities and forms of government intervention, US researchers might make the different call – that the equilibrium framework will do for most important questions.

Regardless of the choice made, how can local housing market analysis proceed? In what follows we examine how markets are defined and internal structures identified, how observed *ex post* choices and prices can be interpreted and the revelation and role of underlying behaviours and adjustments for the longer term. In all these areas of analysis there has been significant progress over the last two decades, but yet there remain significant new approaches and areas to address.

The market: boundaries and structures

Analysis invariably proceeds with the assumption that housing markets will have

a strong spatial element. For much of the last century housing market analysts had to work with poor-quality house price information that was rarely available in geo-coded form at disaggregated levels. Markets, more often than not, were defined by administrative, often municipal, boundaries. The advent of geographic information systems (GIS) has, in most countries, revolutionised the quality of housing market information and access to it.

Detailed geographies of housing market outcomes can be used to define market limits band structures. For instance, in Scotland the Land Registry lists, *inter alia*, sales prices and the locational origins of purchasers. Broad housing market boundaries can then be constructed by identifying flows of moves between neighbourhoods and suburbs. If moves take place within some defined set of areas, then the degree of 'closure' of that local system can be proxied by the proportion of intra-group moves. A bounded housing market area can then be defined when some degree of local closure is accepted for analysis purposes (often 70–80% of moves).

An alternative approach to identifying market boundaries, as well as submarket structures within some wider bounded area, is to examine price structures. In essence this approach revolves around the notion that in a single, well-connected market there will be a single equilibrium price for identical commodities. In housing market analysis the term 'submarket' is often used rather casually to mean just some disaggregated part of the overall system. But it has a precise technical meaning: namely, an area where there are statistically significant and enduring price differences for some commodity or housing characteristic in relation to the overall market or other similarly defined areas within it (Maclennan and Tu, 1996). In housing markets this means either identifying, via hedonic price analysis, persistence in attribute price differences within the overall bounded area or, less precisely, identifying the relative price change of small areas over time. A recent review and development of the basic ideas involved can be found in Pryce (2009).

There is a significant literature on housing submarkets that confirms that they can exist and persist: see, for example, Schnare and Struyk (1976), Goodman and Thibodeau (1998), Watkins (2001), Bourassa et al (2003, 2007), Jones et al. (2003) and Tu et al (2007). This means that aggregative cross-section estimates of consumer choice parameters that ignore them may be biased (see further below).

A considerable intellectual effort has been made to understand and identify housing submarkets and, arguably, it has qualified rather than radically changed the broad insights of equilibrium analysis. Much less effort has been paid in structuring market analysis to identify consumer groups (with choice analysis usually entering data on incomes, household sizes, etc.) or to combine spatial opportunity data with other characteristics of dwellings to identify what might be called product groups (i.e. groups of properties defined by key bundles of characteristics): that is, in housing market analysis, issues are often being addressed that lie at a scale somewhere between the individual and the metropolitan area as a whole. The 'meso' level needs to be understood as submarket outcomes driven by the interaction of 'consumer groups' and 'product groups' but market analysis tends to stick resolutely to the overall market of the individual chooser and property.

This 'group' notion needs more thought in housing market analysis. The analysis above has already discussed housing submarkets and product groups. The case for having some notion of consumer groups becomes clearer when present approaches to explaining market choice outcomes are considered (see also Chapter 3).

Choices, choice outcomes and hedonics

In analysing household choices within housing markets analysts have tended to either develop specific tenure, size or location

choice models (see Chapter 3) or to consider conventional economic parameterisation of household choices – that is, income and price elasticities of demand. Over a long period of time and in different contexts academic research has estimated that the income elasticity of demand for housing lies above 0.5 and below 1; households spend more on housing as incomes increase but they do so at a rate less than their growth in income. There are remarkably few estimates of price elasticities of demand.

Although the income elasticity of demand estimates comes close to a stylised fact, the question arises as to whether it is a useful parameter for many local housing planning and policy purposes. The latter usually require some sense of which housing attributes – such as size, quality or locational accessibility – will be sought as incomes rise. There are relatively few studies of how the demand for different attributes of housing respond to income change, and this is a surprising omission given the interests both of developers and planners. Those that have been completed – and Cheshire and Sheppard (1998) provide an excellent recent example – suggest that the demand for both structure quality and neighbourhood quality is more income elastic than the demand for size of units.

Economists, in making attribute specific estimates, deal with the fundamental complexity of housing by using hedonic methods for house price analysis. Hedonic analysis, well reviewed by Malpezzi (2005), has to be careful and not cavalier in its construction and interpretation. There are few market studies in which some list of characteristics fails to explain 60–70% of price variation. But which specification should be deployed and how should the interaction between different attributes be interpreted, always assuming that the estimates can be assumed to have been generated within an equilibrium system?

Hedonic price approaches are at the core of consumer research in housing economics and their apparent robust appearance can be misleading. Even assuming that the market is in equilibrium, caution is still needed. How can households logically value some of the attributes that can only be known by *ex post* experience? How do households process implicit values when up to 30 characteristics in hedonic regressions show significant effects? What is the information-processing skill that allows households to make these weightings? Or do they? Is there some other information and price formation process at work, ranging from the complex economics of the subconscious to the convergent influence of market experts?

Recent work on the general use of hedonic indices demonstrates how housing sector applications of the technique can be more refined than has been commonplace in the past. However, housing economics have invested significantly more effort in improving the econometric specification of models and housing price/quality databases than in probing the preferences and beliefs that underpin choices. The variety of attributes in dwellings raises important possibilities for households to display non-standard preferences and to confront information-processing issues in making housing choices, and indeed for households within a given area to exhibit strongly different *ex ant*e preference sets. Until recently, in the development of new behavioural economics, the identification of preferences was not regarded as an important part of housing market analysis. Rather, only revealed preferences, i.e. well-behaved and group-wide rankings, mattered: in essence, they are derived by econometric interpretation rather than asking or observing individuals.

In reality, multiplicity of attributes and household services involved means that households – even of a similar age and with similar incomes – may have quite different preferences about lifestyles and, consequently, desired housing attributes and locations. Somewhat surprisingly, as economics sees itself as at least partly about the exploration of preferences in choices, conventional economic analysis of housing markets has

been very limited in its methodology for preference assessments.

The changing balance of income and demographic drivers in housing markets has challenged forecasting approaches. However, within the economics-choice framework there is also growing concern about the relevance of aggregate market measures such as elasticities. The growth in household incomes and the growing diversity of household types has meant that housing choices are now more diverse. Quite different housing choices are now associated with different households on similar incomes or even similar-aged households with similar incomes: that is, aggregate measures are becoming increasingly imprecise and no longer convey the nuanced market information required by individuals, agents and policymakers.

Matching processes and behaviours

With this conception of unfolding and disaggregated markets, separate but connected, how does the price formation process unfold and market adjustment occur? In the short term, markets produce search and quantity signals as well as price signals so that market adjustment processes within as well as between markets may be important. Housing economics has historically emphasised the *ex post* analysis of actual housing choices and relatively little emphasis on the processes by which choices are made. For instance, the volume of research on housing market search pales into insignificance with respect to labour market search (and this has been true for three decades; see Clark and Moore, 1982). But a convincing housing economics has to understand market processes and not merely outcomes.

It is important to think of markets as complex processes that generate system signals. The way in which signals are generated, as searchers from different housing consumer groups strive to mesh with vacancies spread across product groups, is complex. And the

signals generated are not just out-turn prices but failed bids, search activity and migration behaviour. These interrelated signals are what appear to shape housing market adjustment. Over the last 20 years a number of academic research studies – see for instance Wheaton (see DiPasquale and Wheaton, 1996) – have demonstrated the feasibility and relevance of housing search analysis and they have been, fruitfully, used by a number of housing and planning authorities.

Research reveals that, in most instances, the early stages of a search process involve a degree of orientation, usually by non-intensive search methods such as reading newspaper adverts or drive-through visits, which eliminate broad locations that are either beyond the resources of the household or are less preferred. After area/sector orientation, households become involved in the more detailed assessment of particular vacancies. Assessing some of these attributes requires expert opinions, for which potential customers must pay. Yet more attributes may require subjective assessment (the view from the room) or may only be capable of assessment after taking up residence (for instance, the friendliness of neighbours). Unless potential purchasers are risk lovers, intensive assessment of uncertain characteristics will be required prior to purchase. Even with the development of videos of houses for sale, and their extension into virtual reality techniques of information spread, potential purchasers will generally want to see and assess units.

This need to search and see specific units has at least two important implications for the way the market operates. First, the search area or areas in which more detailed assessments are made constitute the market area in which the individual is operating. They are also likely to be well-defined product groups. The extent to which there is a local market will then depend on (1) how other households – say for similar or the same consumer group – have a similar set of search areas and on (2) the extent to which such areas are geographically localised. Secondly, spatially

(or sectorally) structured search behaviour will separate, at any point in time, the population of buyers and sellers into a number of dispersed trades and auctions. There is, as noted above, no single market clearing auction shaping the price of houses in a metropolitan area. Different prices for similar or standardised housing units could potentially prevail, though price differences between places may divert search behaviour, over time, from higher- to lower-priced areas and, in the longer term, supply additions may occur.

The pricing and search procedures for new housing developments usually differ from the second-hand market. Quality may be more readily ascertained and the sales transaction does not usually involve a bidding process. In the short term, developer prices are likely to be fixed and advertised with properties restricted on a queue or 'first come first served' basis. Developers may then adjust prices for subsequent tranches of homes, or stock unsold from previous periods, in relation to past observed levels of search. Specific dwelling searches in the new sector are generally likely to be more rapid and less costly than in the second-hand market.

The brief review of the information problems of housing markets hints at the importance of signals in the consumer search process. A two- or even three-stage 'matching' process is likely to emerge. First, as noted above, consumers may undertake an 'orientation' search in which the locational/ house-type characteristics desired may lead to a low-cost first scan of suitable product groups. Secondly, once broad product groups have been selected, more intensive search of specific vacancies takes place prior to bidding. Thirdly, after purchase bids are made, some, indeed the majority in all but the slackest housing markets, fail. Consumers, either learning new preferences or confronting real constraints, may then adjust the product groups in which they regard, on the basis of past bidding, purchase as feasible. The alternative is to remain in the same product groups and raise price bids. The expected costs of failed future searches are likely to influence the extent to which price bids are revised upwards.

The way in which households adapt product group search and price bids – i.e. the search adjustment process – contains important information for developers and planners. If consumers only adjust price bids for the same product groups, and do not adjust locations, etc,, the planner/developer implication is to increase output in such localities or in as close substitutes as possible. In short, sustained relative price appreciation signals shortages in specific places or product groups. On the other hand, if households switch search patterns, this shift sequentially reveals what consumers regard as close substitutes.

Analysis of household search processes can reveal key pressures and linkages within local markets and suggest where latent demands really exist. More work needs to be done in this area, not least in identifying the search patterns of different consumer groups and the extent to which consumers use hierarchical search processes: that is, establishing whether households focus on area, or type or some other attribute in selecting possible dwellings and then refocus on a second attribute and so on. Evidence already suggests that households have different and hierarchic search processes. For instance, whereas many Scottish households first select housing tenure, there is evidence that some younger households have strong area/ house-type preferences that dominate the tenure attribute. Some households may place house type and size ahead of area.

If, for a particular group, we are seeking to define the limits of a housing market, then the areas/types actually searched, the search field, may constitute a suitable interaction basis for defining the extent and structure of the market. Yet this approach has had more or less no significant purchase in applied housing research in the last three decades. But search costs, information asymmetries and market agents are inevitable in housing

markets, given the nature of the commodity, even if they disappear in typical pricing and exchange models. Search is likely to matter not just because commodities are complex, but because they are spatially based and fixed.

Housing economics has become a diverse and interesting field of research over the last three decades. But despite the interest in economists in individual preferences, and mechanisms by which they might be most effectively expressed, the field remains paradoxically weak on research revelations about household preferences. Most empirical studies explore how variation in constraints shifts choices, and not in how preferences differ, change and form. Housing research, in the main, has been unwilling to get to grips with market processes of search and matching. Three decades of the application of information economics has moved much applied economics well beyond simple supply and demand analysis; yet it would be hard to argue that housing economics has kept pace over that period. In the majority of applied economics research on housing it seems that there remains an unwillingness to get to grips with market matching mechanisms and the behaviours of agents. Housing economists have either chosen or been forced by research funders to seek new datasets on outcomes and to presume the processes and the psychologies that shape housing choices. This has limited the range of change situations economists can understand and model. In many ways housing economics still has to confront the revolution in paradigms that occurred in labour economics over the last 30 years. At the same time, as noted above, housing economics research has to connect quickly to the new behavioural economics. In overviews of the latter, mainstream economists often cite home purchase as the kind of process that new economic psychology can help explain (Viale, 1992) Rabin, 2002; Friedman and Cassar, 2004; Guala, 2005; Della Vigna, 2009). Yet the housing research literature using new behavioural economics remains sparse.

Supply in the long term: an apologetic note

The sections above have emphasised the consumer, demand and choice aspects of housing markets. Housing investment and supply behaviour deserves at least similar attention but space constrains other than a few general remarks here.

It was noted in the second section that supply-side analyses in reality seldom produces robust estimates of housing supply elasticities. Planning and policy bodies should remedy that omission because the future pattern of metropolitan growth may face expansion constraints, and supply elasticities that differ from the present. However, they also need to give attention to broader conceptions of the supply side of the housing market for the long term. Some market systems, whether chaotic or homeostatic, may also have what are called 'emergent' properties: that is to say that change at more local levels, even if it is chaotic, can induce coherent and obvious patterns at larger levels of aggregation. For example, in the housing sector, there may be rapid and chaotic change processes, which take a neighbourhood from a stable middle-income standing to one of rapidly deteriorating quality and low- income occupation. Although the change process of that neighbourhood may be individually disorderly, it may help shape a more obvious aggregative pattern of income separation across different neighbourhoods. As future fuel costs change, it is important to ask what the likely 'emergent' properties of metropolitan housing markets might be.

Finally, it is important to recognise that some systems are evolutionary Connectivity and feedback: for example, do not simply lead to new equilibrium flows but may alter the nature of individuals and their behaviour, so that the qualities of the nodes change. Housing markets may display some or even all of these features and it is important that implicit assumptions as well as major change patterns are identified. There should be no a

priori value judgement that self-balancing or emergent or evolutionary systems are per se superior to others in shaping housing and human well-being. But we need to understand better how housing markets will evolve in the longer term. In the UK, at least, there are currently no serious funded academic efforts to address that issue. Across the advanced economies more generally there does not seem to be an up-welling of applied microeconomic analysis to help us understand the individual and local market behaviours that have both underpinned and reflected the great housing boom and bust of the last 15 years. The opportunity to push paradigm exploration or change that might put in place a real micro basis for housing macroeconomics is in acute danger of being lost as housing research drops further down the priorities of national research councils. What have we learned about 'markets' in the macro context?

FROM REGIONAL TO NATIONAL NOTIONS OF HOUSING MARKETS

Over the last decade there has been a renewed interest in the role of 'the housing market' in the national economy. The long boom, from the early 1990s to 2007 and the subsequent GFC, have all featured housing prices, wealth and equity withdrawal as key elements of instability (see Smith and Searle, 2010). In consequence, for the vast majority of economists the phrase 'housing market' connotes not an interest per se in the real functioning of housing markets but how the incorporation of macro housing outcomes, such as price changes and aggregate shifts in housing debts and equity, changes the forecasts of macro models.

Macroeconomic models or assessments involving housing have typically been concerned, as in recent fiscal stimulus programmes, with the multiplier effects of housing investment or with the role of

housing markets in economic cycles. There has been a resolute disregard of how housing market outcomes influence national productivity, growth and competitiveness. Glaeser (2009) has recently argued that 'the wealth of cities' is influenced by labour migration and that to understand metropolitan growth there has to be a focus beyond wage rates to a wider 'net advantages' perspective. In that broader view, Glaeser emphasises how housing costs and varieties can influence labour market outcomes, human capital and city growth. But there is a broad range of housing outcomes, affecting existing as well as mobile households, that could conceivably impact human capital, and business investment decisions too (see Maclennan, 2008). Housing research and housing policy has much work to do in confirming that often locally argued benefits of good housing outcomes can have productivity and growth effects. Strong policy efforts – for instance neighbourhood renewal programmes in the UK – often stand upon a rather empirically empty black box connecting housing to the economy.

Setting housing in the context of a macro-modelling framework has some important virtues. The drivers of demand and supply, such as incomes, taxes and interest rates, can be linked to national housing outcomes. If anything, such analysis also draws attention to the major markets of functions connected to the business of constructing, financing and selling housing: what was labelled above as 'housing the verb'. These housing activities then have strong connections to labour, capital , land and materials markets.

However, and again emphasised by recent events, the strong reductionism of mainstream economic analysis removes from the core framework inherently important features of the housing market. This is valid insofar as macroeconomists confront different concerns from those concerned with local housing market functioning and policies. For instance, many housing researchers, used to analysis of household data and local housing systems, show some signs of agitation with macroeconomists, such as Buiter (2009),

who suggest that house price gains have little net impact on household consumption, largely because one person's gain is another's loss (either now or in the future). Microanalysts need to recognise that aggregate analyses have validity.

But it is also reasonable for housing market analysts to seek to challenge the relevance of reductionist macro assumptions and whether better stylised facts about housing can be incorporated in macro thinking. This micro-to-macro learning was the great success of labour economics in the second half of the last century; micro results shifted macro thinking, but this process has operated very weakly and slowly in housing sector analyses. For instance, since 2008 the key question in most countries has been whether housing price slowdowns (and reductions in some settings) have bottomed out and reversed or whether a double-dip will ensue into 2011. In reality, there are no predictive answers to such questions, unless there is an understanding of the psychology of housing market choices and household behaviours as regards housing wealth. This is an area governments will not pay to research adequately.

Recent experience also draws attention to the spatial aggregations involved, so that market imbalance and instability is neither adequately measured nor understood by aggregating the performance of quite different regions or metropolitan areas. The innovative work of Muellbauer (2005), Meen (2001) and others has helped abate the reductionism of macro models so that at least some aspects of the broad spatial structure of national and regional housing markets, that fundamental dimension of space, is allowed to have influence in analysis (see Chapter 14). Building on his earlier work on the different spatial dimensions or levels of housing market economics, Meen has developed a series of housing market models that move from nation, to regional then sub-regional scales. These models, as used by Meen, have important roles in systematically simulating the consequences of different demographic and economic futures for

relatively small spaces. In a similar and related vein, Bramley (2002) and others have pushed this towards more formal modelling of future housing needs and demands within regional housing planning areas. These models have strengths and weaknesses (they rely on relatively simple house price to income ratios to split households into those capable of making affordable and unaffordable choices) but their major limitation is how they are used in the planning system In many planning authorities, planners – generally unfamiliar with housing economics – fixate upon a singular estimate of future affordable housing needs and demands. They use tentative forecasts as a target rather than as a consideration in a rather complex decision that needs to meld other sources of information as well as constant market monitoring.

So top-down interest in housing markets is important and there are developing strands of research. Aside from the downward shift of Meen-type modelling, there have been sustained studies of housing wealth behaviour, housing finance and economic outcomes that shift from national to local scales. In a series of papers, Case, Quigley and Shiller (Case and Siller, 2003; Case et al, 2005a, 2005b) have unravelled the consumption effects and economic consequences of housing price change at local, metropolitan, regional and national levels. These have been separate pieces of work and not conducted in a single local to national modelling framework, but each scale of work has been convincingly informed by the levels of analysis that lie above and below it. This persistent, consistent approach to housing market analysis that uses the strengths of conventional frameworks without being constrained by them is an exemplar of the kinds of housing market analysis required to make housing economics credible.

However, the macro models and debates of the present would be much better informed if we had better understandings of local housing market behaviours, turning points, etc. Recent developments in national to regional modelling of markets have been helpful, but

as they still remain reductionist in the mechanisms or market processes involved they might be described as the same intellectual engine, just a smaller version. The concern in the third section was that there needs to be a different emphasis in the 'engineering' of how we think about local housing markets, not just adopting smaller spatial scales.

If a better-informed housing microeconomics is to emerge, the question remains as to whether we can capture something less reductionist in modelling at the macro scale. We have to set new micro research on local drivers and transmission mechanism in a macro context because the recent, spectacular and damaging outcomes in many metropolitan housing systems have involved the local absorption and transformation of national and global drivers in local systems. We have to improve, and link, our understandings of housing market analysis at both local and national levels.

INTEREST IN POLICY: ENDNOTE?

Some economists rapidly move from the status of market analysts to what the late George Stigler referred to as 'preachers': that is, there is a propensity to make the moral judgement that a well-functioning market system is to be preferred and should be largely left to its own devices to allocate resources, reward efforts, etc. For many economists, the market is a preferred, ethically imbued system. Individuals are assumed to be the best judge of their own well-being and the system is assumed to be relatively well informed, and generally free from market failures and monopolies.

The discussion in this chapter would not support the view that unfettered housing markets would always work well as systems, even if the underlying distribution of income and wealth were widely acceptable. There are too many possible flaws in the market, too many potential fumbles for the invisible hand, to assume *ex ante* that local markets should be policy-free. And the experience of the GFC suggests that if macro policy applies too reductionist a view of how housing markets operate (for instance in assuming that sectoral asset price booms should not be the concern of monetary policy) then there may be damaging economy-wide effects. The British economy, at least, now faces a minimum of five hard years as a result of a policy judgement that deregulated markets needed little scrutiny and would work well (and they have had significant benefits too) and the capital market would be efficient in shaping instruments and assessing risks. The mistake was that the markets did not operate in the expected *ex ante* fashion. And that is why in the enduringly important housing sector there is a need to improve real understandings of housing systems.

As researchers, we still need to make a modest assessment of what we actually know about the operation of housing markets over space and time. Our research agendas have stalled, precisely when we need to make real progress. Policymakers need to listen to these notes of caution as they confront a challenging decade ahead for housing market adjustment across the advanced economies.

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