CHAPTER 12

Housing: Supply, Pricing and Servicing

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1 INTRODUCTION

Housing is at the core of modern economies. According to the 2009-2010 Household Budget Survey in Ireland, housing comprised a greater share of consumer expenditure than any other category. Of the €42,150 spent by the average household in that year, nearly one-fifth was spent on housing, with another 10 per cent spent on goods and services related to housing (including fuel, light, durables and household non-durables). This compares with 16.2 per cent spent a year on food, the next largest category. For households with mortgages or private sector rents, the fraction spent on housing costs was even greater (22.5 per cent for households with a mortgage and 26.3 per cent for households in the private rented sector).

More generally, property is the dominant asset in household portfolios. Detailed information on household wealth is available from the newly established Household Finance & Consumption Survey, part of a cross-European effort to better understand household balance sheets in the wake of the Great Recession (see also Chapter 8). The typical Irish household had gross wealth of €175,500 in 2013 and debt of just over €75,000, leaving typical net wealth for Irish households of €105,000. The vast majority of Irish household wealth is held in property ('real assets') of some form, in particular the main residence (53 per cent of real assets) but also land (21 per cent) and other property (15 per cent). Compared to real assets, financial assets were a much smaller part of the typical household's balance sheet, with the majority (55 per cent) held in savings, an average of €4,500 per household. Similarly, almost 95 per cent of

household debt related to either a mortgage on the main residence (72 per cent) or on another property (23 per cent).   From a household perspective, then, the housing sector matters and, related to this, it is of prime importance for policymakers. The Great Recession, associated with the Global Financial Crisis of 2008, had its roots in a run-up of housing debt in the USA and elsewhere (see Chapter 7) and there is strong evidence that the same is true of the Great Depression of the 1930s.[1] Despite this, housing has remained – at least until recently – something of a neglected topic in economics and economic policymaking, falling between the two stools of microeconomics and macroeconomics.

This chapter addresses the Irish policy space relating to housing. Section 2 will outline the rationale for government intervention. Section 3 presents housing as a market, documenting the supply and demand forces at work, as well as tenure considerations. Particular attention is paid to demand shifters, with Section 4 focusing on one demand shifter, mortgage credit, which has recently been the subject of significant policy intervention, and to the elasticity of supply, which is the subject of Section 5. Section 6 focuses on non-market provision of housing, in particular social housing, through both price and supply supports. Section 7 discusses the utilities related to housing, such as water and household waste, and the policy issues arising, while Section 8 concludes.

For the purposes of clarity, it is useful to set out here the terminology that will be used in this chapter. First, the term 'property' refers to any form of real estate comprising land and a structure, including residential or commercial property, as well as land without any structures on it. The term 'housing' is used to refer specifically to residential real estate, i.e. any property used for accommodation. This is distinct from the term 'house', which is one form of accommodation, with others including apartments. A 'dwelling' will refer to something that is built on a site, whereas a 'property' refers to both the dwelling and the site. Housing prices may refer to sale prices or rental prices, thus these specific terms will be used where appropriate, while the housing price ratio refers to the annual rental price as a fraction of the sale price.

2   RATIONALE FOR STATE INTERVENTION

Due to the importance of property in the economy, understanding the rationale for the nature and extent of government intervention in the sector is critical. Two central reasons are discussed below for government intervention in the property sector, namely efficiency (and in particular externalities) and equity and information failures. Costs of government action or changes in policy are also discussed in brief.

Efficiency
As is outlined in Section 5, on the supply of housing, land is essentially fixed in supply and is immobile. Thus, it is highly susceptible to externalities. For example, a factory emitting pollutants will affect residents nearby. Alternatively, the construction of a new rail line, with stations, will have an effect on the properties close to those

stations. Policymakers may expect the bulk of these effects to be positive in nature, as these properties enjoy greater access to other parts of the country as a result, although there may also be negative spillovers, e.g. traffic congestion at rush-hour or extra crime as a result of higher footfall.

The presence of such externalities can be generalised slightly to thinking about land values as reflecting a missing market. While land varies hugely in value around the country, and indeed even within cities, those variations do not stem primarily from the actions of the current owner or previous owners. Instead, differences in the value of land across space reflect the actions of others, including society generally as well as government actions specifically. The presence of an employment cluster, or a consumption cluster (such as restaurants), may not reflect any specific policy actions, rather a natural tendency for agglomeration. This creates a spillover amenity enjoyed by landowners nearby. In addition, specific government actions – such as the example of a new rail line given above – may also significantly affect land values.

However, if land values are not taxed, such increases in the value of land cannot be connected to the initial investment decisions. This creates a misallocation of resources, in a regime without land taxes, compared to one with land taxes, as there may be, for example, under-investment in rail infrastructure. The same logic applies to other government actions that affect land values, including other transport infrastructure, such as motorways and airports, but also a wide range of other amenities, including parks, green space and blue-flag beaches, as well as schools, hospitals and police stations, where freedom from crime is amenity.

Equity and Information Failures
In aggregate, the demand for housing is, ultimately, very inelastic: everyone needs access to shelter on a regular basis. Housing requires resources, though. Therefore, with a spread of incomes in the economy, it is inevitable that, at any given point, there will be residents who cannot afford to cover the cost of their housing, even in a situation where housing supply is at a point close to maximum efficiency. This is the rationale for substantial government intervention, in order to ensure that all citizens have adequate housing. This can take two forms, as discussed in some detail in Section 6: boosting demand (for example, through income supports) or increasing supply (for example, through the direct construction of dwellings).

The government may also intervene to address information failures, which may undermine efficiency. It is for this reason that Ireland has had, since 2012, a public register of transaction prices for residential property. Other countries have, for similar reasons, publicly available registers of bids on residential property and maps of land ownership. The EU requirement to have an energy performance certificate, known in Ireland as a Building Energy Rating (BER), combines both informational and behavioural motivations. It is believed that such certificates will lead to more informed decision making on the part of consumers, largely through making energy consumption more salient to the consumer and providing an incentive to improve the energy efficiency of the housing stock.

A similar argument could be made for the numerous minimum standards that apply to Irish housing currently, such as requirements relating to minimum sizes,

orientation, facilities (such as kitchens and bathrooms) and, in the case of apartments, requirements relating to lifts, balconies and basement car-parking. This, however, creates two tensions. The first tension is with personal freedoms, as a universal requirement for minimum sizes may prevent people from living as close to an urban centre as they otherwise would like, more central properties being dearer, *ceteris paribus*. The second tension is with social justice, as preventing the construction of smaller and cheaper homes, for example, may price out those on lower incomes, unless government subsidies are increased to compensate. More broadly, as in other policy areas, in addition to market failure, policymakers need to be aware of the scope for, and effect of, government failure.

This may include effects from changes in policy. Arguably, as explained below, regulatory and policy changes relating to mortgage credit and the taxation of construction created the dramatic property market bubble and crash seen in Ireland over the period 1995-2012.

3   MARKET FOR HOUSING

Since 2012, a mismatch of supply and demand has characterised the Irish housing market. It can be seen in the scarcity of student accommodation, an increasing number of homeless people, including those in work, and in the rapid increase of prices and rents in certain parts of the country. In Dublin, sale and rental prices rose by more than 40 per cent between 2012 and 2016. In other parts of the country, particularly in rural areas where tax reliefs were most generous, prices and rents have registered much more modest increases in the same period. This reflects the underlying economics of the housing market.

A Composite Good
The ability to buy and sell housing means that the sector can be thought of as a market, with price and quantity outcomes reflecting underlying supply and demand and related policy interventions. The asset-based nature of housing – in other words, its durability and the possibility of reselling it at a later date – means that demand will reflect not just demand for housing as a service (the rental component) but also the costs and/or potential gains of holding housing as an asset.

For those who own their own home, housing as a service is often termed 'implicit rent': just as a house in the rented sector has an occupier (tenant) who pays rent to an owner (landlord), it is possible to think of those who own their homes as receiving (imputed) rent payments from themselves. Put another way, the owner of a housing asset is saving on accommodation costs by not having to rent somewhere to live. This is different to someone with the same wealth but who bought a different type of asset (e.g. shares in a publicly listed company); they would still need to spend on rents.

In addition to the distinction between housing as a service and housing as an asset, a second central feature of housing is that it is a composite good, such that every individual property is unique (as the sites are, even if the dwellings are identical). Microeconomic studies of housing – in other words, where the unit of observation is

the individual house, rather than the housing market – exploit this fact. They typically attempt to explain the sale or rental price of an individual property using a range of characteristics relating to the dwelling and to the location. In brief, the value of any property can be broken down into the site and what is built on it.

Specific dwelling characteristics include the size, type, age and quality of the built dwelling itself. Comparisons across dwellings need to take into account in particular the number of rooms (such as bedrooms) but more generally the full floor area. More accurate comparisons will also take into account the type of dwelling: a 70sqm apartment will face a different demand curve to a 70sqm terraced house. Similar issues arise with age – typically newer properties command a higher price but vintage premiums (e.g. for Victorian or Georgian homes) also exist. As mentioned earlier, following an EU directive, it has become mandatory for properties listed for sale or rent to include their BER and, not surprisingly, research has shown that more energy efficient homes command a price premium over less efficiency counterparts, *ceteris paribus*.

The second set of characteristics that affect the value of a property relate to the plot of land. Whereas the owner has relatively complete control – subject to, for example, preservation orders – over the value of what is built on the site, they do not have any meaningful control over the value of their site. As mentioned in Section 2, this depends on a large set of factors, including proximity to the nearest city centre, to the coast, and to other amenities such as transport facilities, green space and schools, as well as distance from dis-amenities, such as pollution of any form, including noise or visual pollution, congestion and crime. The site value will also depend on factors that depend on neighbourhood characteristics, rather than geography, such as the fraction of people in the neighbourhood that have a degree or the fraction at work. The bulk of variation in housing prices comes instead from the land value, as opposed to dwelling characteristics. This is a theme for policy discussed in later sections.

Fundamentals
While the above discussion focuses on the nature of demand at the property level, i.e. what differentiates one property from another, much of the public policy focus in housing is at the aggregate or market level. When thinking at the market level, it is useful to highlight the distinction between two sets of factors affecting housing outcomes: fundamentals and asset factors. Fundamentals affect both implicit rents, and thus sale prices, as well as market rents, whereas asset factors affect the relationship between sale and rental prices. For example, an increase in average incomes of 10 per cent would be expected to increase both sale and rental prices. However, increased confidence about future economic conditions is likely to have a major demand effect only for owner-occupied properties. The three main fundamentals affecting the price of housing, both sale and rental, are household income, demographics and housing supply.

Household Income
Income is a key measure of underlying demand for housing and is best measured as real (i.e. inflation-adjusted) income per household. The relationship between incomes

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and house prices is positive: households will spend more on housing as average incomes rise or as the typical household enjoys an additional source of income. It is worth noting that a change in household income could come from a number of sources. First, it may stem from a simple increase in incomes paid to each person. Second, it may reflect greater participation in the labour force on the part of the typical household, e.g. greater numbers of women staying in the labour force, as occurred during the 1990s in Ireland. Lastly, it reflects unemployment. If ten percent of the working age population lose their employment, as happened between late 2007 and early 2010, this reduces the number of incomes the average household enjoys.

The positive relationship between income and accommodation costs occurs through two channels. First, even if households keep constant the fraction of their expenditure devoted to housing, an increase in income will mean more spent on housing. Without any change in housing supply, this merely pushes house prices up. Second, there is empirical evidence that housing may be what economists term a luxury good. This means that as incomes increase, the fraction of money spent on housing does not stay static, it increases. Evidence from the Irish housing market over the period 1975-2012 suggests that an increase in income of 10 per cent (keeping other factors, including the general price level, constant) is associated with a 12.6 per cent increase in the real price of housing.

Demographics
The second demand-side factor affecting rents, both market rents and implicit rents, is demographics. There are a number of elements to demographics that affect housing demand, including fertility rates, longevity, the age structure of the population and divorce/separation rates. These are best captured in the broadest measure of demographics, the number of persons per household. This number is typically slow-moving and has been falling from roughly four in the 1970s to less than three today. (A related concept is the headship rate, which measures the fraction of the population that heads up their own household.)

To see how the ratio of persons to households could impact house prices and rents, contrast the housing requirements of a population of four million people split into two million, two-person households with the same population split into one million households of four people each. Over the period 1980-2012, the number of persons in the typical Irish household fell by one. This increase in effective housing demand per head of population was associated with an increase in real house prices of roughly 40 per cent.

It is highly likely that Ireland's average household size will continue to fall over the coming decades (see Chapter 6). This could create significant demand for new homes. For example, assume that Ireland's population stays constant at 4.8m, but that the average household size falls from 2.7 (as it was in 2011) to 2.5. This in itself would require the construction of 142,000 extra dwellings. Given roughly 14,000 dwellings were constructed in 2016, that is, the equivalent of 10 years output from the building sector, even if population were to remain stable. Convergence to the EU average of 2.3 persons per household would require the construction of an additional 300,000 dwellings in Ireland: more than 20 years of current supply.

Supply
In terms of impact on prices and rents, housing supply works in the opposite direction to household income. An increase in the number of dwellings relative to the number of households gives the demand side of the market greater bargaining power, lowering prices and rents. Note that, perhaps slightly counterintuitively, this factor also includes net migration, as a large inflow (for example) of households into the country reduces the quantity of housing stock available to each household, thus driving down supply relative to demand.

The correct measure of supply is not the number of dwellings per household, but instead the value of the housing stock (measured annually by the Central Statistics Office in the national accounts as the real net capital stock in residential dwellings) per household. This is because not all dwellings are equal. If Ireland's housing stock has been gradually moving over time from smaller rural cottages and urban terraced dwellings to larger and/or more energy efficient homes, this increase in the quality of supply will not be reflected in a simple count of dwellings.

Research on the Irish housing market 1975-2012 suggests that an increase in the real value of the housing stock of 10 per cent is associated with a fall in real house prices of 8 per cent. A similar relationship between supply and rental values is likely to hold. Note that the effect is slightly less than proportional: as housing stock increases, there is a price effect but also a small quantity effect (see later).

Asset Factors
Key Concepts
It is important to highlight that a house can be thought of as an asset similar to other financial assets. The durable nature of housing means there may be a demand for housing simply because it is expected that there will be demand for housing in the future. This suggests expected capital gain as a source of housing demand, and the remainder of this section deals with the concept of user cost, of which expected capital gain is a principal component. The other asset factor that may affect demand for housing is the condition of the mortgage credit market (see later).

The yield on a financial asset can be thought of as reflecting the ratio of returns (e.g. dividends or price gains) to the price of the asset. Similarly, the yield on housing – the ratio of the annual rental price to its value if sold – can be measured and compared with other assets. The three factors outlined above – real incomes per household, real housing supply per household, and demographics – affect both sale and rental prices in the housing market. Therefore, it is unlikely that changes in any would have a significant effect on the yield (or annual return) on housing.

A fall in user cost or more relaxed credit conditions, on the other hand, will – for reasons outlined below – shift out the demand curve for property for sale and therefore increase sale prices but not rental prices. They are, thus, the principal determinants of the equilibrium yield in the property market. The yield is often considered one of the most important barometers of the health of a housing market. A yield that is 'too low' is taken to signify that sale prices have become detached from their fundamentals, as reflected in rental prices, whereas a yield that is 'too high' may mean that impediments exist to the proper functioning of the sale market.

User Cost

The user cost refers to how expensive it is to hold an asset for a given period, typically a year. It is thus a measure of the cost of capital, taking into account the opportunity cost (the interest rate), but also holding costs (such as maintenance and depreciation) and expected capital gains. This is a core concept in finance and applies also to housing due to its durable nature.

In relation to residential housing in Ireland, there are two main contributors to user cost. The first is the cost of holding housing. For owner-occupiers, this includes the nominal mortgage interest rate (before 2013, the net or after-tax rate was different to the gross or advertised rate due to mortgage interest relief), costs of maintenance and depreciation, and property taxes such as stamp duty and Local Property Tax. Most of these costs are relatively stable over time, while the most variable – the mortgage interest rate – has varied within narrow bands (roughly 3 per cent to 6 per cent) since Ireland entered the euro zone.

The second and typically more important aspect of user cost is expectations of future house prices, in other words expected capital gain. As mentioned above, interest rates and property taxes have a relatively small range over the course of the cycle. However, expectations about the annual change in house prices can vary between plus 20 per cent year-on-year (as was the case in the mid-2000s) and minus 20 per cent (as was the case in the late 2000s). This reflects the fact that expectations about sale prices for housing are to some extent adaptive, i.e. they reflect not only expected future changes in fundamentals but also momentum from recent trends.

Among the gaps in our knowledge of the housing market – not just in Ireland but indeed across the developed world – is a high-quality, high-frequency measure of housing market expectations.[2] In practice, these need to be measured in a survey format and, without surveys extending back in time, it is not possible to say definitively what the impact of expectations on housing market outcomes has been. A relatively standard assumption is that the average change in house prices over the last four years is a good measure of expected capital gains. When applied to the case of Ireland's housing bubble and crash, this suggests that the user cost rose from minus 10 per cent (with strong price appreciation, there was no cost to capital) to plus 20 per cent between 2006 and 2012, an increase in costs that was associated with a fall in equilibrium prices of approximately 45 per cent.

A negative user cost suggests almost irrepressible demand for housing, as appears to have been the case in Ireland in the final stages of the housing market bubble, and is far from healthy. A per-annum user cost of 20 per cent also is highly unhealthy and suggests a normalization of expectations that would lead to an outward shift in demand for housing and thus a rise in price. In lay terms, this is often described as house prices "overshooting" both on the way up and the way down and stems from adaptive expectations.
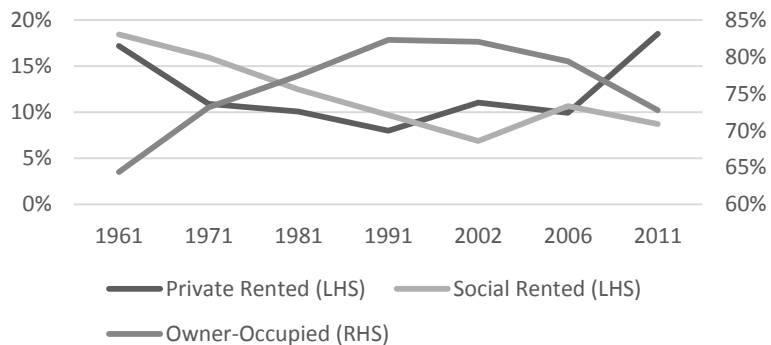
Tenure Factors

The discussion so far has mentioned sale and rental prices, implying the existence of two segments of the housing market. The presence of both sale and rental demand for property may reflect heterogeneous preferences among people of similar

circumstances: some people may prefer flexibility or a more central location, and thus rent, while others may buy. In addition, the existence of rental market may reflect constrained demand, where households want to own property but are unable to do so, for some reason.

It is important to note that the boundary between these two segments is not fixed and changes with technology (broadly defined, i.e. including policy technology and financial technology) as well as with preferences. Figure 12.1 presents the fraction of households by tenure type in Ireland, at each census since 1961. It includes social housing (Section 7) as well as owner-occupied and market rental, and shows a clear upward trend in owner-occupancy from 1961 to 1991. Both private market rental and social rental fell during the same period, although it is important to note that the fraction in social housing did not increase between 1991 and 2011, while the fraction in private rented accommodation rose from 8 to more than 18 per cent.

Figure 12.1 Fraction of Households, by Tenure Type, Ireland (1961-2011)

Source: Census of Ireland (various issues)

Contrary to popular perception, Ireland does not have an unusually high fraction of its population that own their home. Indeed, the homeownership rate in Ireland is one of the lowest in Europe, ranking 21st out of 28 countries. Many central and eastern European countries have significantly higher homeownership rates, due in large part to redistribution of property after the fall of the Soviet Union and its satellite states in the early 1990s.

A final note concerns the relationship between household income and yields. As outlined earlier, a higher income at household level would be expected to increase housing demand, with upward pressure on sale and rental prices. However, it may be possible that the effect is greater for sale prices than rental prices. For example, if it is the case that home-ownership rates increase with incomes, then as incomes go up over time – in particular relative to the cost and supply of dwellings – this will reduce the demand for rented accommodation relative to the owner-occupied sector.

4   ROLE OF CREDIT

Commercial Property
While the bulk of the chapter focuses on residential property, one must also consider commercial property, which includes real estate used for retail, offices and industrial, among other uses. Broadly speaking, both commercial and residential sectors are subject to the same forces of supply and demand. Thus, the pattern of commercial property prices, both sale and rental, mirrors to a large extent those of residential property prices, both sale and rental, over the last generation.

Nonetheless, there are some important differences. One stems from the credit side. As a general rule, residential property is highly leveraged, i.e. there is likely to be a high fraction of debt associated with every euro of housing wealth. Given that businesses are more mobile than residents, including the option for businesses to cease to exist, commercial property is typically far less leveraged than housing. Whereas equity is a percentage claim on an asset, debt is a nominal (i.e. euro) claim. The greater role for equity in commercial property provides a larger buffer in times of falling values.

Combined with the fact that its owners and its occupiers are not households and, by and large, have separate legal status, allowing them to go bankrupt in the extreme case, commercial property is far less of a concern for public policy than residential property. Given recent Irish history, though, it is necessary to include one crucial caveat to this statement. Where a government chooses to guarantee the liabilities of its financial institutions, as Ireland did in 2009, this creates a link between the taxpayer and the performance of commercial property, in particular the development of new property. In effect, Irish banks had borrowed large sums from international capital markets and lent to developers (both commercial and residential), who could not repay when the Irish property bubble burst. When the Irish government – in an attempt to preserve the Irish financial system – guaranteed all liabilities, rather than for example just new liabilities, it made commercial property a policy issue in a way perhaps unique in modern economic history (see Chapter 7). This is unlikely to occur in future, as the principle of 'bailing in' bondholders (those who lend to banks) is now enshrined in EU policy (see Chapter 3).
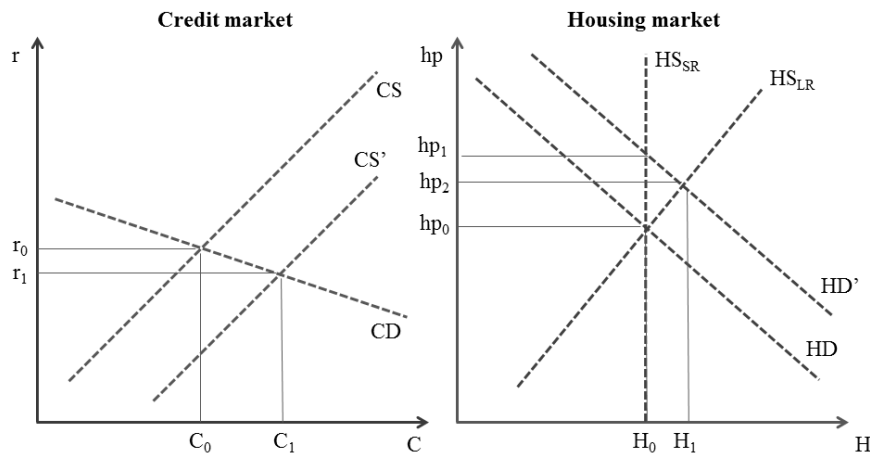
Mortgage Credit Market
Returning to residential property, a fifth major factor affecting housing market outcomes is non-price conditions in the mortgage credit market. To see why non-price conditions matter, compare 2006 and 2014. In both years, average incomes were similar and financial institutions would have offered a household on an average income mortgages with similar rates. However, the conditions of borrowing were very different in those two years. In particular, a significant fraction of first-time buyers in 2006 required no down-payment on their mortgage, while many others required a deposit of less than 5 per cent. In contrast, most first-time buyers in 2014 required a deposit of at least 10 per cent, in many cases 15 per cent.

The deposit required of the typical first-time buyer is a measure of leverage, or how stretched a first-time buyer is. The higher the leverage, the less protected an

asset-holder is in response to a negative price shock. If first-time buyers are required to have a 20 per cent deposit to obtain a mortgage, this means that if housing prices were to fall by 15 per cent, a family that needed to move (e.g. in response to losing a job) would have enough equity to be able to absorb the fall in house price. In contrast, if first-time buyers need no deposit, i.e. the mortgage is worth 100 per cent of the value of their home, then any fall in housing prices means that they will be unable to sell up in response to a loss of income or employment. This latter situation describes the fate of many families once the Irish housing market collapsed after 2007.

Somewhat surprisingly, given their importance in the macro-economy, long-run series on the loan-to-value (LTV) of the typical first-time buyer are not available for Ireland.[3] However, a proxy measure, the ratio of the stock of mortgages to the stock of household bank deposits, can capture the change in credit conditions over recent decades. In particular, the ratio of mortgage credit to household deposits rose by 100 percentage points, from less than 80 per cent to 180 per cent, in the decade to 2008. The evidence shows strongly that it is not just user cost that determines the equilibrium yield for housing, it is also credit conditions.

Figure 12.2 Stylised Analysis of an Outward Shift in Credit Supply

One of the reasons that credit conditions are so important is the relatively elastic nature of the demand for mortgage credit. Everything else being equal, offering more credit to a household with a given level of income allows them to access more of their future earnings and thus buy a more expensive property. Given the high income elasticity of housing, the typical household will borrow as much as it can. This relatively flat elasticity of credit demand is shown in the left-hand side panel of Figure 12.2.

An outward shift in credit supply (from CS to CS') – for example, due to a change in regulations that allows banks to lend more to borrowers – will result in a far

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greater proportional increase in the quantity of credit supplied than the fall in its price (interest rate). This translates into an outward shift in the demand for housing (from HD to HD', in the right-hand panel), significantly pushing up the average sale price of housing.

Central Bank Mortgage Regulations

Referring back to the five main factors affecting housing market outcomes, policy intervention in relation to the housing market typically will not be in reference to either incomes or demographics. Income is, in many senses, an outcome variable and it is unlikely that any government would attempt to stimulate income purely to alter housing market outcomes (as opposed to policy measures to stimulate income for its own sake).

Similarly, it is unlikely that policy would be designed to affect demographics purely to affect the housing market. Instead, there are three principal areas where housing market policy is undertaken: macro-prudential policy, reflecting the asset factors outlined above; housing supply; and social housing policies, reflecting equity and tenure concerns.

The term macro-prudential policy refers to regulation of the financial system that aims to reduce the risk of the financial system as a whole, particularly the risk it could pose to the broader economy (see Chapter 3). While the term is relatively new, policies that would now be characterised as macro-prudential date back at least to the 1930s response to the Great Depression, if not before. Macro-prudential policy is typically seen as regulation relating to the financial sector, rather than the housing sector. Nonetheless, the strong overlap between housing and finance, particularly at the household level, means that the two sectors are inextricably linked. In terms of housing-related finance, the two dominant forms of macro-prudential regulation are loan-to-value and debt-to-income. Since 2015, both are in force in the Irish housing market.

In January 2015, the Central Bank of Ireland introduced proportionate limits for loan-to-value and loan-to-income for new mortgage lending, covering both 'primary dwelling houses' (PDHs, or owner-occupied homes) and buy-to-let (BTL) mortgages. For owner-occupied homes, both conditions must apply, i.e. households will be only be able to borrow a certain multiple of their income provided it is also not beyond a certain multiple of their savings. On loan-to-value, there are different limits for first-time buyers and for other buyers. Since 2016, first-time buyers are required to have a maximum loan-to-value of 90 per cent Non-first time buyers are subject to a limit of 80 per cent LTV for their mortgages – if a family that already has a mortgage wants to borrow €400,000, they must have €100,000 in savings. BTL mortgages are subject to a more stringent 70 per cent LTV requirement.

In addition, owner-occupier mortgages are subject to a limit of 3.5 times loan to gross income (LTI). But in the case of both LTV and LTI caps, over the entire loan book of individual banks, exceptions are allowed. In particular, banks are allowed to exceed the 3.5 LTI limit on a total of 20 per cent of the value of all PDH mortgages each year. Banks are also allowed exceed the LTV restrictions for PDH mortgages for up to 15 per cent of their mortgage book.

Issues Arising

Empirical analysis of the Irish housing market suggests that the single biggest contributor to the bubble in the run-up to 2007 was the decline in lending standards. Nonetheless, while there is widespread agreement that the broad thrust of the macro-prudential regulations is desirable, the exact nature of the Central Bank rules raises questions. All market regulation is typically designed to address a market failure and the rationale for limiting leverage by putting in place a maximum loan-to-value ratio can be described as addressing the market failure of excess leverage. It is unclear, however, why first-time and subsequent purchasers of owner-occupied property are treated differently.

Additionally, the rationale for the loan-to-income limits is unclear. First, they are tied to a particular interest rate regime. If mortgage interest rates were to rise to levels seen in the 1980s (10-15 per cent), rather than 3-6 per cent seen since the 2000s, the limits would be significantly less relevant as few banks would be willing to extend families four or five times their gross income. Consider a €350,000 property with an 85 per cent loan of roughly €300,000. At a mortgage interest rate of 4 per cent, the monthly repayment would be €1,400, whereas at 8 per cent the repayment would be almost €2,200 and at 12 per cent just over €3,000. It is not clear how a limit of borrowing relative to gross income protects lenders or borrowers.

A further complication arises given the variation in land values around the country. In early 2015, when the regulations were brought in, the value of a three-bedroomed semi-detached property varied from less than €70,000 in some areas to over €700,000 in others. This variation in house prices far exceeds the variation in incomes across space and reflects different amenities, such as access to employment, offered in different locations. It also allows households to choose housing that reflects their priorities: for some families, access to expensive urban amenities is important and this will be reflected in their spending, whereas for others, they would rather spend their income on goods, not amenities.

Under the Central Bank regulations, families that otherwise would rather spend more of their income on housing than other goods may be forced to substitute away into other goods. For example, a household whose income means they would have to borrow four times their gross income to buy in Dublin may instead be told to buy further away from Dublin, where prices are cheaper but their fuel bills larger.

5   HOUSING SUPPLY AND REGULATIONS

In Figure 12.2, short-run housing supply was shown as inelastic – it is not possible to add 5 per cent to the housing stock overnight or even over a period of many months – while the long-run housing supply curve was more elastic. The central question addressed in this section is what factors affect the shape of the long-run housing supply curve or, more precisely, the elasticity of housing supply.

For example, if demand for housing were to increase by 10 per cent over the next five years, what would be the increase in supply? In a healthy housing system, supply

should also increase by 10 per cent, thus preserving sale and rental prices at the same level (adjusting for general inflation). A failure of housing supply to respond to new demand reflects a dysfunctional housing system. Between the 2011 and 2016 Censuses, the Greater Dublin Area witnessed an increase in demand of almost 10 per cent but an increase in supply of less than 1 per cent, suggesting a hugely dysfunctional housing system.

Housing supply has two components. The first is the natural churn in the existing supply, which depends on tastes, as well as the natural increase or decrease in the market due to first-time buyers and deaths/executor sales. As this is just the redistribution of existing stock, the second and more important element of supply is the construction of new homes.[4] Note, however, that for the case given above, there is an asymmetry between an increase and a decrease in demand. A fall in demand by 10 per cent requires merely a reduced level of building, and if construction fails to fall fast enough, the effect on the economy is positive, in the form of reduced accommodation costs. A rise in demand by 10 per cent requires new building, which involves a wide variety of inputs and markets, including land, finance and policy as well as construction.

The focus here will be on the following two components of the cost of building new property: the cost of land, and the cost of construction on that land. Every individual site is, in some way, unique. Thus, the market for land deviates fundamentally from the textbook model of perfect competition: each site is a local monopoly, although there are likely to be close (but imperfect) substitutes nearby. In addition, land is fixed in supply. This marks another key deviation from the model of perfect competition, which assumes perfectly elastic supply of a good in response to market prices. The policy implications of inelastic land are discussed below.

Setting aside land costs temporarily, the construction of new dwellings is based on a number of hard and soft parameters. At its simplest, construction will take place where the difference between the net present value of rental income and the cost of building is positive. The net present value of rental income means the value, in today's terms, of the rental service into the future and will reflect prevailing rental prices (either market or implicit, if the dwelling is to be sold), the expected rate of inflation in prices, and the rate at which future amounts are discounted. These costs include a desired profit margin, so in a competitive construction market, any positive difference between income and costs ought to be reflected in the residual factor, namely land prices.

The core concept in understanding building supply, therefore, is the break-even rent. This is the level of market or implicit rent at which all costs, including whatever 'normal' return is desired by the owners of capital, are covered. Assuming for the moment that the cost of a plot of land is residual, i.e. reflects other costs, rather than speculative, there are roughly ten key parameters determining the break-even rent associated with a dwelling. Thus, in addition to factors relating to land use, for a given level of demand, these parameters will largely determine the supply of new homes and the elasticity of new supply. They can be categorized, loosely, as being either regulatory factors or market factors.

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Regulatory Factors

Five regulatory factors affecting costs are outlined below: per-square-metre costs; size restrictions; density restrictions; local authority levies; and VAT. Four of these are 'hard costs', i.e. in euro per square metre terms, while the fifth – the VAT rate – is a 'soft cost' in percentage terms. A key metric in the housing supply equation is the ratio of all hard costs to all soft costs.

Construction Costs

The central factor in determining the break-even rent is the cost of construction per square metre. In theory, construction costs could be considered a market factor. However, in the Irish case, while the cost of building materials is largely subject to global forces, the dominant element in construction costs – the hourly wage rate in construction – is heavily regulated. In addition, other regulations, such as requirements for each unit in an apartment block to have its own basement car-parking space, add to construction costs.

There is some evidence that construction costs per square metre are significantly higher in Ireland than in its peers. For example, the cost per square metre of medium density apartments in 2013 was almost 45 per cent more expensive than in Germany (€1,360/sqm vs. €950/sqm) and per-square-metre construction costs for apartments were roughly 50 per cent more expensive in Dublin than in the Netherlands and Canada. Similarly, rebuild costs by professionals suggest that, for a family home, the price of an additional square metre in Dublin is almost €1,800, compared to €1,700 in the Greater London area and €1,000 in Northern Ireland.[5] These are all industry figures, however. A policy analysis of the reason construction is so expensive in Ireland is required to address the issue of a lack of supply.

Minimum Size and Maximum Density

The second factor is the required (average or minimum) size per unit in square metres. This is set at local level currently in Ireland, but with national guidelines for all multi-unit developments. For one- and two-bedroom apartments, the minimum unit size in Dublin (in particular in Dublin City Council and in Dun Laoghaire-Rathdown) was in 2015 among the largest in Europe. This means that the minimum size was greatest in the parts of the Irish housing market that could sustain smaller units due to the presence of location-specific amenities. While larger units bring benefits reflected in higher rental values, they also add to costs. Regulatory changes brought in in late 2015 set new national maximums for apartments.

The third factor is the number of units allowed per acre. This varies widely across the country and, in Dublin City Council where pressure for agglomeration is greatest, there are guidelines for bringing about greater density but also, paradoxically, stringent limits on height. These limits vary by district within Dublin, and are typically limited to seven floors, with some areas allowed twelve floors. In some local authority areas, in particular in Dublin, the number of units is further restricted by limits on orientation and the regulated ratio of lifts/stairwells to units on each floor. For example, as is the case currently in central Dublin, a one-acre site where no solely north- or east-facing units are allowed (and where the vast majority of units must be

dual-orientation) will have a smaller number of units than one where a greater mix is allowed.

Taxes

The two final regulatory factors relate to taxes. One is local authority levies, which are typically levied on a per-square metre basis. The other is the VAT rate, which is regulated nationally: construction activities are subject to a reduced 13.5 per cent VAT rate. In practical terms, as in other sectors, the VAT rate can be thought of as effectively a profit margin charged by the state.

Market Factors

Soft Costs

There are five market factors that help determine the break-even rent and thus the supply of new dwellings, for a given set of demand factors including incomes. All five are "soft costs", i.e. in percentage terms.

The first factor is fees, with development of new dwellings incurring a range of fees, including professional, legal and compliance fees. Also included in this category (for ease of exposition) is stamp duty, although strictly speaking, this is of course a regulatory charge. These fees are in percentage terms, thus any increase in hard costs will be reflected in higher fees.

A second market factor is the interest rate (and term length) associated with site purchase and construction works. In general, this can be assumed to be determined largely at economy-wide level, although financial institutions may regard some projects as higher risk than other, which would then be reflected in the interest rate charged. Typically, Irish development projects would be funded through a mix of debt finance and equity finance (including retained earnings). The desired profit margin on equity finance is a third market factor and, as with other market factors, is a percentage addition to costs.

The above factors can be used to calculate the cost of a dwelling, including VAT and profit margins, and thus its purchase price. For owner-occupied homes, the final factor needed is a comparison of this cost with the likely purchasing power of those interested in buying the homes. This will include asset factors, including the mortgage interest rate and deposit required by buyers, as discussed above.

For rental dwellings, there are two final market factors that are relevant. The first is the desired net yield for investors. Institutional landlords will have a desired net yield, in annual terms, and this affects the relationship between the full price and the break-even monthly rent. The margin between the risk-free return and the desired return on, say, Dublin residential rental property will be largely determined by a combination of the class-specific risk premium (property compared to bonds) and the location-specific risk premium (Dublin compared to major markets).

The last factor that affects costs and the supply of new homes is the management margin. This includes service costs (management fees) and depreciation. The gross rental yield is the combination of the desired net yield and the management margin. It is used to convert the up-front break-even costs into a monthly rent, which can then be compared with ability to pay on the market.

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Taking a sample development of 36 two-bedroom apartments on a one-acre site in Dublin, and excluding land costs (until the next section), the core build costs represent roughly half of total costs. The remainder would be mostly a roughly equal split between levies, profit and VAT. With no site costs, the all-in cost of perhaps €320,000 per unit in early 2017 translates into a monthly break-even rent of about €1,600 for a two-bedroom apartment. This figure, which excludes any land costs, is well above the prevailing rent for a two-bedroom apartment in Ireland (roughly €800) and in line with the rents in the most expensive areas of Dublin.

State-Provision?
Some have argued that the issue is with profit-led development and that other models, such as state provided homes or cooperative development, should be pursued. These are certainly options to be explored but they do not eliminate the opportunity cost of capital. If the state were to invest without return, this is capital that could have been employed on other projects, for example in health, education or transport that would have delivered a social return on investment. Similarly, cooperative development (such as the German *Baugruppen*) requires the voluntary relinquishing of capital – in this case for a share in a development. It is also worth remembering that profits in a competitive market will form a relatively small share of overall costs and thus the impact on the break-even rent will be limited.

Given the apparently large discrepancy between the cost of a square metre in Ireland and in other economies, efforts to boost supply and lower the cost of accommodation are better directed at these hard costs. This is doubly so as, the lower the hard costs, the smaller the soft cost multiplier is in euro terms. For example, if profit, VAT and fees together add 30 per cent to the hard costs, a reduction in hard costs from €200,000 to €150,000 will have a knock-on effect on 'soft costs', from €60,000 to €45,000. (In practice, the all-in soft-cost multiplier is closer to 65 per cent.)

This has implications for minimum standards. While there may be an understandable desire to increase the quality of the minimum acceptable unit, this has an effect on cost. If an additional square metre costs €2,000 and the minimum one-bedroom apartment size is 55sqm (as was the case in Dublin) and not 40sqm (as in many European cities), this means that the hard costs of the smallest allowable dwelling in Dublin would be expected to be €30,000 higher. With a soft-cost multiplier of 65 per cent, this is an additional €50,000 to the full cost of the unit. Where investors seek a 5 per cent net yield, this adds €250 to the monthly break-even rent, a not insignificant additional cost for those on lower or middle incomes to bear.

Land Markets
Until now, the issue of land costs has been avoided. More specifically, it has been assumed that land costs will reflect the difference between the net present value of the market rent and the break-even costs (excluding land). This residual form of calculating land values is how many developers approach whether or not to purchase a plot of land, but it does not accurately reflect land markets.

In practice, land markets operate through a combination of such residual net-present-value calculations, reference points and speculative behaviour. Residual

calculations take into account market rents and the cost of building, as outlined above. Reference points refer to, effectively, norms in pricing behaviour. For example, it may be the case that if an acre of land sold for €2.5m in one part of Dublin 2, then the holder of another site nearby will not be willing to sell for substantially less than this, regardless of the ratio of market rents to build costs. In addition to reference points, there are also speculative motives for holding land. Where there is no penalty for holding land vacant, those owning or purchasing land may do so, in anticipation of future capital gains.

A final source of uncertainty in land markets is the use to which land can be put. In countries such as Ireland, land has a use specified in local authority development plans but these are not fixed. By applying for planning permission, it may be possible to convert land from one use (e.g. industrial) to another or mixed use (e.g. office, retail or residential). Thus, land may come with option value, broadly defined.

Land Values and Taxation
A challenge for policymakers is the tendency for inertia in land use. For example, in Dublin, there remain army barracks on the same sites as in the 18th century, bus depots on the same sites as 19th century tram depots, and industrial estates on the same sites as the 20th century. However, the demand for particular locations will change across decades. Much as labour market policy has moved from passive to active since the 1980s, it is now important that policymakers adopt a similar policy for land. In particular, the recognition of under-employed land is key, as is the identification of regulatory or policy barriers to the use of particular sites. Inertia in land use can be overcome by altering the annual user cost of a site. In many countries, such as Denmark, Estonia, and parts of Australia and the USA, this is done through a land or site value tax, which charges the owner of a site a fraction of the value of that site, if it were put to the best allowable use.

Earlier, mention was made of the inelastic aggregate supply of land. The near-perfect inelasticity of the supply of land raises an important policy implication. Unlike other forms of wealth, which may be highly mobile, land is immobile and thus it will bear the burden of taxation. Historically, land tax formed the basis of many government revenue systems. To this day, it forms one of the most valuable assets in any modern economy and thus a land tax is a de facto wealth tax, unable to be avoided by the wealthiest citizens.

In addition, though, a land tax internalises the externality associated with location-specific investments by government. For example, the construction of a new motorway linking commuter towns with a nearby city gives those towns greater market access. This will be reflected in, among other things, greater property values. Under a land value tax system, this upswing in value creates a return on the investment made by the taxpayer. The same argument applies to other social investments, including urban parks. A land value tax is an important mechanism in enabling policymakers to move from a cost-based approach to public spending decisions to one based on the ratio of social benefits to costs.

Role of NAMA

The Irish market for development land has, since 2010, been dominated by the National Asset Management Agency (NAMA). This agency was set up as a 'bad bank', to recapitalise the Irish financial system (see Chapter 3). Roughly €77bn of loans, secured against what was valued at approximately €88bn of collateral at the peak, were bought from the Irish banks for about €37bn. These are then to be sold off over time at amounts that reflect their long-term economic value. As of early 2017, it is envisaged that NAMA will not make a loss and may make a small profit.[6]

However, NAMA's work has meant that it has become the dominant market player in development land in Ireland. Its exact role is unclear, as in theory it should be a supplier (of land) to developers but in practice, it is the stated intention of NAMA to remain as a landholder in Dublin's north docklands. In addition, land that NAMA does sell is not sold on condition of development, thus encouraging speculative landholders. The combination of all these factors means that the price of development land currently is far from the textbook case of residual valuation.

6   SOCIAL HOUSING

Rationale and Features

The final area of housing policy relates to tenure and social housing. In practical terms, one could think of households ordered from richest to poorest. The richest fraction, perhaps 70 per cent, have incomes that are both high enough and secure enough to borrow a mortgage and thus they typically own their home. Of the remaining 30 per cent of households, these will be split between those in the private rented sector and those in the social housing sector.

The private rented sector has, as described above, a minimum rent below which costs are not covered. Currently in Ireland, as outlined in the previous section, it is difficult to build new accommodation at a monthly cost of less than €1,000. At the same time, households can only devote a certain fraction of their disposable income sustainably to accommodation. The rule of thumb is that a household should not spend more than one third of its disposable income on housing. Taking into account the Irish tax system, this means that a household earning €45,000 should be spending no more than €1,000 per month on housing.

The role for the State in providing social housing is, therefore, clear. Regardless of the minimum cost of providing adequate housing, there will be a segment of the population with insufficient income to cover their accommodation costs. The rationale for State intervention is therefore to ensure access to housing for all, taken as a basic human right. It is also clear from this the ideal form of State intervention: a supplement to income to ensure that accommodation costs can be met. In particular, given the rationale for intervention, the subsidy should be larger, the poorer the household. If €12,000 is needed for adequate accommodation per year, and no more than one third of after-tax income should be spent on accommodation, those

households with an after-tax income of €30,000 should receive a far smaller subsidy than those with an after-tax income of €20,000.

Unfortunately, Ireland's current social housing system is such that this clarity is lacking. As with other aspects of the welfare system, the predominant form of housing subsidy, rent supplement, is a fixed amount. This hinders vertical equity while the on/off nature of the subsidy has implications for horizontal equity across working and unemployed households.

In addition, Ireland's social housing system has moved away from debt-financed publicly-funded construction of new homes. Under what is termed the Part V arrangement (after the relevant section of the Planning & Development Acts, 2000-2006), developers are typically required to set aside 10 per cent (previously 20 per cent) of any new development for social housing. Aside from the fact that developers were often able to get around this requirement, either directly (through payments to the local authority) or indirectly, this has the in-built feature of generating quantities of social housing that are pro-cyclical, while demand for social housing is likely to be strongly counter-cyclical. In particular, when private developers are building 8,000 dwellings a year, rather than 80,000, the provision of social housing is likely to be grossly inadequate.

Ireland's Housing Finance Agency exists precisely to lend to local authorities and voluntary housing bodies, giving the social sector access to international capital markets. In addition, the underlying collateral is strong, given that the rental payments are effectively State-guaranteed. However, the weakness (and indeed complexity) of the prevailing Differential Rent schemes, coupled with a reliance on fixed Rent Supplement subsidies, means that there is very little demand on the part of social housing providers for development capital.

Controlling the level or rate of change in rents is often considered as a tool for policymakers in relation to housing. In late 2016, the Minister for Housing introduced a system for diagnosing Rent Pressure Zones, which capped rental inflation at 4 per cent per year for areas with excessive inflation in rents. This is the equivalent of a binding price ceiling. As with all price ceilings, it means that there will be excess demand and that supply and demand will equilibrate through black market activity (such as side payments) or through non-price rationing, through for example queuing or lotteries. However, it should be remembered that high rental prices are a symptom of a lack of supply and thus controls on rental inflation may further dull the pressure for new housing supply.

A 'Human Right'?
The system outlined above is connected to policy debates about a universal basic income and about whether housing should be included in the Constitution as a human right. The close juxtaposition of economic recession and rising accommodation costs in Ireland in the decade from 2006 to 2016 has led many to call for a right to housing to be included in the Irish constitution. Those who call for such a right often cite other countries or the Universal Declaration of Human Rights and the Council of Europe's European Social Charter, both of which include a right to adequate housing.

While the inclusion of a right to housing in the Irish Constitution might bring about a meaningful right in practice, it is likely that this would only be so after a landmark court case, including various appeals. How that right would be made effective, in general to the populace at large and not just the plaintiffs of that particular case, would still need to be worked out. A system of subsidising households based on the gap between their means and their needs would achieve this, having the greatest impact for the lowest cost. Nonetheless, the cost of such a scheme would be sizeable: a subsidy averaging €400 per month for 500,000 households translates into an annual exposure of €2.4bn.

Such a scheme, though, would mark a further step towards a system of universal basic income, elements of which are already in place for younger (child benefit) and older citizens (pension entitlements; see Chapter 8). Technically, it would be closer to a negative income tax, where a certain threshold for subsistence is established, and redistribution is to those below that threshold. A final note on this is that it can be extended to other areas. For example, as outlined in a report published by the Housing Agency, policy supports for housing and care needs of Ireland's older people should reflect the gap between an individual household's means and the cost of its needs, both housing and care.[7]

7   SERVICING HOUSING

Introduction

As mentioned earlier, housing comprises the single largest fraction of household expenditure. Its importance also stems from it sitting at the heart of a range of complements (and substitutes). For example, a household may choose to spend 35 per cent of their monthly budget on Property A, close to their work, or 25 per cent to live further out in Property B and spend 10 per cent on transport: in this sense, Property A and transport can be seen as substitutes, while Property B and transport are clear complements.

In addition to transport services, there are a number of other services that are connected to housing. These include water, waste disposal, electricity, heating, and telecommunications (previously landline, but now principally broadband). This section briefly discusses the market structures of these services and public policy issues arising, as well as discussing the role of property taxes.

As seen earlier, each site is unique and thus a local monopoly and – even if all dwellings built on sites were identical – this means that each property is differentiated from all others. The corollary of this is that any services supplied to a property also have to be differentiated. For example, a broadband line to a property requires at least some of the line to be specific to that property. Similarly, with household waste collection, there is a cost of effort required for each bin lifted.

As discussed in Chapter 5, a system with many differentiated suppliers is unlikely to occur, where there are significant fixed costs relating to infrastructure. This is the case with water, authorised waste disposal, broadband, electricity and heating. In the

case of heating and electricity, there may be lengthy supply chains, while there are likely to be capacity constraints in all utilities, affecting the elasticity of supply. Thus, it may be expected that the likely market form in many utilities related to the servicing of housing will be oligopolistic or even monopolistic.

Waste Disposal and Water
Water supply is discussed at some length in Chapter 5. Waste disposal is also covered there, but it will also be dealt with briefly here.

Historically, waste regulation and management functions were the responsibility of local governments throughout the country and the provision of kerbside waste collections to domestic households and businesses were funded through the collection of domestic property rates (see below). The abolition of rates in the 1970s left local authorities responsible for this service, without a source of revenue to pay for it. Over the following 30 years, the service became increasingly privatised, albeit with extensive use of waiver schemes to those on low incomes. This occurred in particular in response to a 1998 Department of the Environment policy statement on waste management and the associated introduction (albeit controversial) of bin charges.

The exit of public operators created something of a vacuum, with private market operators keen to secure particular affluent areas, while other less affluent areas were left with very few service providers. Many areas in Ireland suffer from congestion caused by numerous waste providers accessing the same roads, often competing with rush-hour traffic, while other areas have little or no competition, leaving local monopolies free to increase prices. Ultimately, public policy in Ireland deviated from best practice, with a reliance on 'competition in the market' rather than 'competition for the market'. Where there is likely to be a natural monopoly or wasteful costs of duplication, it may make more sense for policymakers to tender for access to a market every few years, and allow competition at the level of the district (see Chapter 5).

International experience would indicate that competition *for* the market, in the form of public tendering competitions every few years, would seem to be the most effective option. Regulators would be able to specify the terms of the tender and allow service level agreements, pricing structure and revenues to be known in advance offering clarity to market bidders.

Other Utilities
Other utilities serving households at their residence, such as broadband, electricity and heating, rely heavily on infrastructure and other fixed costs. In particular, there is potential for wasteful duplication of resources in the distribution network, while the importance of brands and consumer trust is likely to mean that supply is a natural oligopoly. In contrast, generation is likely to be much more utility-specific, with potential for market structures close to perfect competition in some utilities.

As a general rule, then, it is likely that there will be a natural monopoly in the transmission grid for a particular utility. This is true for water, electricity and gas, for example, with all suppliers using the same grid to reach the consumer. The distribution of gas and electricity relies on publicly-owned networks, which customer-

facing suppliers pay to access, and was discussed at some length already in Chapter 11.

The Irish government is implementing a National Broadband Plan, to bring broadband to rural Ireland. The target is that all 1.9 million homes and business across Ireland will have fibre broadband by the end of 2020, with service provider *eir* estimating that 80 per cent will have access through the market. It is clear that such a scheme involves those living in high-density areas subsidising those in low-density areas. This is one of the challenges of a country as sparsely populated as Ireland. Ireland has on average fewer than 70 people per square kilometre, roughly one quarter the density of the UK and just one hundredth the population density of Singapore, which has a similar population (see Chapter 11). An issue of moral hazard arises also: if high-cost locations are subsidised by the taxpayer, a concern may arise as to whether the population will remain excessively dispersed, thus driving up the cost of living compared to other countries.

8 CONCLUSION

This chapter has reviewed the economics and policy issues surrounding the property market. Due to its policy importance, it focused almost exclusively on residential property, although the case of commercial property was discussed, in particular due to its role in Ireland's economic crisis in the late 2000s.

Housing can be understood as a market, with demand and supply forces at work. The demand forces include the fundamental forces of household income, which reflects unemployment, labour market participation and trends in per-worker incomes, and demographics, most widely reflected in the ratio of people to households. In Ireland's case, this steadily falling ratio creates a significant need for new homes each year, even in a situation where overall population is static.

In addition to these fundamentals, there are also asset factors that act as demand shifters, affecting sale prices but not rental prices, and thus the equilibrium ratio between the two. The user cost reflects, above all, expected capital gains, which are volatile and typically backward-looking. Credit conditions are another demand shifter, albeit one that was omitted from analyses undertaken in the 1990s and 2000s. The smaller the down-payment required by borrowers, the more leverage households take on. This pushes up housing prices and creates significant exposure for households, if prices were to fall.

Due to the elastic demand for credit, outward shifts in credit supply translate into more credit, rather than cheaper credit. This shifts out the demand for housing, pushing up prices, at least in the short run. At this point, the elasticity of housing supply is critical. A one-for-one response to new housing demand will leave sale and rental prices unaffected in the medium-to-long term. However, in practice, housing supply is inelastic. As discussed, it is likely that the dramatic failure of housing supply in Ireland since 2011 reflects some combination of these factors, with the break-even rent well above market rents in most of the country as of 2017.

This has implications for the provision of social housing, also. Best practice in social housing would give greatest financial support to those suffering from the largest gap between their means and their accommodation needs. Unfortunately, policy in Ireland relating to social housing relies excessively on fixed subsidies, pro-cyclical housing supply devices and then, due to the failure of these, a plethora of emergency measures. Moving towards an income-based subsidy would create even greater incentives to reduce the break-even cost of building new homes in Ireland. Moving towards greater control of rents is unlikely to solve the supply shortage.

Ultimately, there are two principal barometers of the health of a housing system. The first is the yield, or relationship between sale and rental prices. This reflects, however, not only user cost but also credit conditions and thus financial technology and confidence. Nonetheless, it remains a useful tool for policymakers to assess conditions in the housing market. The second barometer is the elasticity of supply, of both market and non-market segments. The nearly complete failure of the housing system to respond to a significant increase in demand in Ireland, particularly in the Greater Dublin Area, since 2011, represents one of the greatest challenges to policymakers over the period 2017-2022.

Endnotes

[1] For more on the role of housing and household debt in the Great Recession (and Great Depression), see B. Eichengreen, *Hall of Mirrors*, Oxford University Press, Oxford 2014., and Mian & Sufi, , *House of Debt*, University of Chicago Press, Chicago 2014.

[2] An annual survey was conducted in Ireland by the ESRI, as a supplement to the Consumer Sentiment Survey 2003-2008. Since 2011, a similar consumer survey, now undertaken on an on-going basis and reported quarterly, is part of the Daft.ie Report.

[3] In late February 2015, the Central Bank of Ireland launched a Household Credit Market Report but this also does not report the typical loan-to-value of first-time buyers.

[4] Rather than the gross number of new dwellings built, the addition to supply each year is the amount net of obsolescence, in other words housing that has depreciated past the point at which it is habitable. While the rate of depreciation is not known with certainty, the rate of new completions was so low in 2011/2012 that in certain periods it is likely Ireland's housing stock was shrinking.

[5] Sources: Turner & Townsend, 'A brighter outlook: International construction cost survey 2013'; SCSI House Rebuilding Calculator (available online at: https://www.scsi.ie/advice/house_rebuilding_calculator) and BCIS Public Rebuild Calculator (available online at: http://calculator.bcis.co.uk/), both accessed last 1st March 2017. Sterling figures were converted to euro using a 0.75 euro/sterling exchange rate.

[6] It is worth pointing out that, in the context of all bank liabilities having been guaranteed by the taxpayer, the exact amount paid by NAMA for the loans was of secondary importance. For example, if NAMA had paid less for the loans, and thus subsequently made a larger profit, this would have meant that taxpayers would have had to inject larger amounts into the banks.

[7] Amarach Research, Ronan Lyons, Lorcan Sirr & Innovation Delivery, *Housing for Older People – Thinking Ahead,* 2016, available at https://www.housingagency.ie/Housing/media/Media/About%20Us/Report-Housing-for-Older-People-Thinking-Ahead-(2016).pdf

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